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CONTENTS

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(See page 18)

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CONTENTS

ABDOMINAL PRESENTATION OF LYMPHOMA: A CLINICO-PATHOLOGICAL STUDY OF 19 CASES.

A.N. Md. Atai Rabbi 1.
Mahmud Hasan 2.
A.S.M. Rezaul Matin 3.
Tarek-Al-Nasar 4.
Hilal-E-Azam. 5.

Key Words :

Abdominal Lymphoma

Summary:

Lymphomas are uncommon malignant tumour of Gastro-intestinal tract. 19 cases were reported in this series of which 16 are males and 3 were females. The mean age was 34.4 years. 10 out of 19 cases had primary lymphoma. 4 had secondary by lymphamatous involvement. 5 were cases of nodal lymphomas with or without superfical lymph node involvements. 3 patients had in volmement of caecum, 2 had diffuse involvement of small intestine.

Introduction:

Lymphomas are uncommon malignant tumours of the gastrointestinal tract. In western countries, lymphomas constitute less than 5% of all gastric,1.5% of all colonic and 1% of all rectal tumors. With significant advances in the management of lymphomas, the prognosis of this condition has improved. There is need for early diagnosis, careful staging and appropriate multimodality treatment, if patients of lymphoma in our country are to be given the benefits of recent advances, though extra-abdominal or retroperitoneal lymphatic tissue are not uncommon and present as a diagnostic problem. These tumours may secondarily involve the gastrointestinal tract, or it can be a primary affection.

Gastrointestinal lymphomas have not so far been described in Bangladeshi literature. We have come across several cases of lymphomas involving

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gastrointestinal tract and lymphoid tissue of the abdomen in our clinical practice. In this paper we describe the clinical patterns, sites of involvement, methods of diagnosis and short term results of treatment of some of these cases.

Patients and Methods:

All patients presented with gastrointestinal symptoms or an abdominal lump. Cases were collected from different sources. Nine were taken from the surgical unit of the IPGMR, six from private clinics of Dhaka, three from Modernised Sadar Hospital of Noakhali and one case was collected from the Mitford Hospital.

In only one of these cases a clinical diagnosis of lymphoma was made pre-operatively on the basis of diarrhoea, abdominal lump and prominent small bowel mucosal folds on X-ray. Duration of symptoms of these patients ranged from 3 months to 1 year with the exception of one patient in whom it was six years.

In addition to clinical examination, routine hematological examination, urine and stool examination were done in every case. Barium meal examination of a stomach and duodenum, follow through small intestine, Barium enema with or without air contrast were done in patients where it was indicated. Rectal nodule was biopsied in one patient. Biochemistry and cytology of ascitic fluid was done in 1 patient. In all but 4 patients, laparotomy was done. Tissue from the gastrointestinal lesion and adjacent lymph nodes and in some cases the whole resected specimen were sent for histopathological examination.

Clinical Finding:

Of this 19 patients, 16 were males and 3 were females. Their mean age was 34.4 years (S.D. 14.8 years) General symptoms and sings are shown in table-1. Most patients had anaemia, weakness and fever, only one patient had generalised lymphadenopathy. Mode of presentation of these patients are shown in Table-2. Three patients presented acutely, one with acute on chronic small intestinal obstruction and two with features of an abscess. Physical findings in these patients are shown in Table-3. Anatomical site of involvement of the lymphomas are shown in Table-4. Ten out of the 19 cases had primary gastrointestinal lymphoma. Four had secondary lymphomatous involvement of

Table I:

General Symptoms and signs out of 19 cases.

Anaemia	18	94.74%
Progressive weakness	16	84.16%
Fever	16	84.16%

Table II:

Presenting features of 19 cases.

Acute on chronic Intestinal obstruction	1	5.26%
Chronic Duodenal obstruction	2	10.52%
Sub-acute small Intestinal obstruction	5	26.32%
Persistent Diarrhoea	2	10.52%
Rectal Bleeding	2	10.52%
Features simulating abscess	2	10.52%
Abdominal Lump with Occasional intestinal Colic	3	15.78%
Abdominal Lump alone	2	10.52%

the gastrointestinal tract, and the remaining five were cases of nodal lymphoma with or without superficial lymph node involvement. Seven patients had small intestinal involvement. Two out of these had diffuse involvement of the small intestine with involvement of the nodes. Three patients had involvement of the caecum. Distribution of the primary gastrointestinal lymphomas are shown in Table-5. Majority of the cases consisted of involvement of the small intestine (four cases) and caecum (three cases).

Table III:
Local findings.

1. Visible and Palpable Lump	10
Right Iliac fossa	3
Left Iliac fossa	2
Right & Left Iliac fossa	1
Right Lumber Region	1
Left Hypochondrium, epigastrium & Umbilical	1
Right Lumbar, part of Iliac Region	1
Epigastrium	1
2. Visible Peristalasis	6
3. Ascites	2
4. Cervical and Axillary Lymph Adenitis	1
5. Inguinal Glands	1
6. Per-rectal digital examination Finding	
Diffuse mucosal Involvement with non ulcerated nodules	1
Polypoidal mass in the upper part of Rectum	1

Table IV:
The site of involvement of gastrointestinal lymphomas.

1. Stomach	1
2. Duodenum	1
3. Small Intestine	5
4. Diffuse small intestinal mucosal involvement with mesenteric nodes/ cervical nodes	2
5. Caecum	3
6. Ascending Colon	1
7. Sigmoid Colon	1
8. Diffuse colonic and Rectal involvement and cervical involvement	1
9. Left Iliac lump	1
10. Mesenteric glands only	2

Table V:
Anatomical distribution of primary gastrointestinal lymphoma.

Gastric	1	10%
Duodenal	1	10%
Small intestine	4	40%
Caecum	3	30%
Sigmoid Colon	1	10%

Brief description of these cases according to site of involvement follows:-

Gastric Lymphoma :

A man of 55 years presented with vague upper abdominal pain for 6

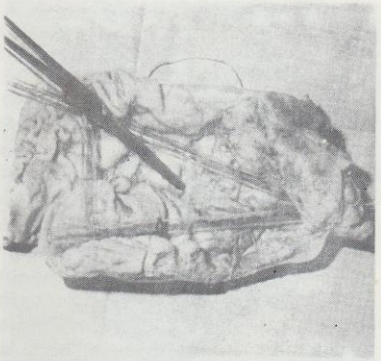


Fig -1 Gastric lymphoma

months. For which he visited doctors. Radiological and other investigations failed to reveal any abnormality. But he was becoming progressively weak. But later he had an episode of melaena lasting for about 6 days for which he was admitted. Barium meal X-rays of stomach and duodenum this time also failed to reveal any positive finding but endoscopy showed diffuse antral mucosal infiltration with a malignant looking ulcer. Biopsy did not reveal any malignancy. After laparotomy, lower partial gastrectomy was done with excision of enlarged nodes. Morphologically there was diffuse involvement of antrum and part of body with mucosal ulceration having the features of malignancy. Histopathology confirmed the gastric and nodal lesions being lymphoma.

Small intestinal lymphoma

Two patients presented with the features of duodenal obstruction. They were anaemic and in one of them there was a small globular lump which was non-tender and fixed. Barium contrast

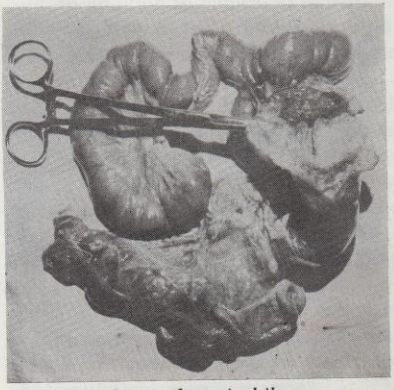


Fig-2 Lymphoma of terminal ileum

X-rays of stomach and duodenum showed obstruction in the second part of the duodenum in one patient and in the person with lump it was normal. Laparotomy revealed annular constriction in the second part of duodenum. Gallbladder was also distended. Adjacent nodes were enlarged. After opening the duodenum it was found that there was projecting annular masses from 3/4th circumferrence of the duodenum. In the other patient there was a pingpong sized enlarged lymph node pressing the duodenum near the D-J flexure. This tumour could not be removed as it was very much adherent in posterior abdominal wall. Part of this tumour and adjacent lymph nodes were sent for histopathological examination. It was a cases of Hodgkin's disease.

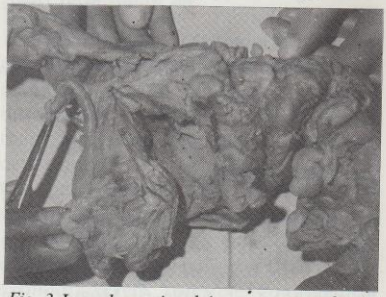
Multiple small intestinal annular rings with neovascularisation of some of them were found in five patients. Enlarged mesenteric nodes were present in all. In one of them the nodes were matted and were "caseous" and the general findings were so convincing that this patient was put on anti-tubercular treatment. But histopathology showed the lesion to be lymphoma.

Two patients presented with prolognged loose motion with loss of weight. One of them later developed bilateral cervical lymph node enlargement and in the other patient, mesenteric nodes were palpable. Barium follow through showed prominent ileal mucosal folds. In this patient laparotomy was done and whole thickness ileal biopsy and lymph node was taken for microspopic examination. In the other patient initial biopsy, rectal mucosal and subsequent cervical lymph node biopsy

confirmed the diagnosis of being lymphoma.

Ileo–caecal lump

These two patients had common symptoms and findings i.e. occasional intestinal colic with palpable non–tender slightly mobile lump in the right iliac



Fig–3 Lymphoma involving caecum and ascending colon

fossa. They also complained of occasional diarrohoea. Right hemicolectomy was done in both the cases. Both the lymph nodes and caecal lesions proved to be lymphoma.

Lump in the lumbar region with skin involvement

This lady underwent appendectomy two months before presentation for symptoms suggestive of appendicitis. During appendectomy, the surgeon found a small caecal lump but the appendix looked normal. Later she developed a large non–tender lump extending over right iliac fossa, right lumber region, part of the hypogastrium and umbilical region. There was finding of skin involvement. At one point it looked like as if it was "pointing" with shiny thin skin. This patient had very minimum bowel and constitutional symptoms. Barium enema showed filling defect in the caecum. Right hemicolectomy, with the excision of parietal infiltration was done. The parietal infiltration was from a mass different from that of caecum. Frozen section biopsy was done. This patient had no other enlarged mesenteric lymph node. Histopathology showed that both the lesions were lymphoma. The tumor involving the caecum weighed about 500 gm.

Intra–abdominal lump with or without ascites

One patient had a huge abdominal lump occupying most of the left upper abdomen. He had ascites also. The lump was non–tender and non ballotable. Cytology of the ascitic fluid showed plenty of R.B.C. Laparotomy showed matted mesenteric lymph nodes. Partially excised lymph node was submitted to histopathology. There were two more patients with enlarged right iliac lymph nodes and intermittent fever. After exploration biopsy were taken in both cases, which revealed lymphoma in all these cases.

Presenting features simulating abscess

Both the patients were in the second decade . They presented with continuous fever for about one month with hectic rise. They had severe constitutional symptoms. One of them had history suggestive of right colon involvement for about 6 months and barium enema showed filling defect in the ascending colon. Right paracolic abscess resulting from carcinoma of the colon was diagnosed. After incision, biopsy of the scooped material gave the diagnosis of poorly differentiated lymphocytic

lymphoma. The other patient was diagnosed as left iliac abscess. After exploration necrotic material was found, beside a solid lymph node was taken and was submitted for histopathology, which reported it to be Hodgkin's Lymphoma.

Bleeding per rectum

These two patients had clinical features of carcinoma rectum i.e. bleeding per rectum, tenesmus, sense of incomplete evacuation. One patient had these rectal symptoms for about 6 years. But on abdominal examination, it was found that there were nodular non-tender masses in both iliac fossa, and there was also ascites. Digital and sigmoidoscopic examination showed diffuse mucosal involvement with non-ulcerated rectal nodules. Biopsy was taken from this nodule which revealed lymphoma. Subsequently this patient developed cervical lymphadenopathy and biopsy of cervical node was taken which showed the same pathology. Barium enema with air contrast in this patient very prominent mucosal folds to give rise pseudo-polypoidal appearence. In the other patient, digital examination showed a polypoidal growth in the upper part of rectum. In Barium enema, it was found that there was a filling defect with shouldering in the recto-sigmoid junction. Laparotomy showed that it was a case of intussusception of the sigmoid colon into the rectum and the apex was formed by a polypoidal sigmoid growth. Sigmoid colectomy was done. Biopsy showed the case to be lymphoma.

Histological pattern

Sixteen of the Ninteen cases of our series were Non-Hodgkin's lymphoma (48.2%), the rest were cases of Hodgkin's disease (15.8%) Table-6. Most of the cases were of the type of malignant lymphoma lymphocytic (26.3%) and Malignant lymphoma histiocytic (26.3%). There were no case of mixed type of malignant lymphoma in our series. Of the three cases of Hodgkin's disease, two had

Table VI: *Histological varieties in our series 19 cases.*

Non-Hodgkin's Lymphoma	16	84.2%
Malignant Lymphoma (Undifferentiated	3	15.78%
Malignant Lymphoma (Histocytic type)	5	26.32%
Malignant Lymphoma (Lymphocytic type well differenctiated)	1	5.26%
Malignant Lymphoma Mixed (Histocytic & Lymphocytic)	Nil	00%
Malignant Lymphoma, Hodgkin's type	3	15.78%
(a) Lymphocytic Predominance (b) Nodular Sclerosis (c) Mixed cellularity (d) Lymphocytic deplition	Not described	
Unclassfied	2	10.52%
	Total 19	

ilio–inguinal lymph node involvement only band one case had both mesenteric and small bowel involvement. The patient with gastic lesion had diffuse lymphocytic lymphoma (moderately differentiated). Most cases of small bowel involvement had diffuse lymphocytic lymphoma (poorly differentiated type).

Short term follow up

All of these patients were advised chemotherapy. Some of them have been managed by our physician colleague interested in chemotherapy and some of them were referred to Radiotherapy department of the Dhaka Medical College. Attempts were made to keep contact with every patient. We could keep in touch with twelve patients only. Within our knowledge three of these twelve cases expired; seven received combination chemotherapy. The patient with right para colic abscess developed faecal fistula and expired on twenty fifth post operative day before any chemotherapy could be administred. Another elderly patient who had caecal involvement of lymphoma died in course of four months following surgery and he received only one cycle of chemotherapy. The third patient who died in the four months period, had massive messenteric lymph node involvement which was reported histologically to be lymphocytic lymphoma. This patient did not have chemotheraphy or radiotherapy.

Of nine patients who are known be alive till this report, some are leading a normal life and some have had partial improvement of their features. Three patients are worth mentioning. One having gastric lymphoma, one having small bowel lymphoma, one having large bowel lymphoma who are followed up for ten months, five months and eighteen months (till this report) respectively. All these patients received full course of chemotherapy following radical excision of anatomical involvement. None of these patients had liver, spleen and central lymph node involvement. These are the patients who are enjoying asymptomatic life, gained weight and leading normal life. Most of the remaining patient reported to have partial improvement of the symptoms.

Discussion

Gastrointestinal lymphomas may be primary or may be manifestations of generalised lymphoma. In comparison to nodal presentation of lymphoma primary gastrointestinal lymphomas are uncommon. Exact incidence of primary gastrointestinal lymphoma is not known, but it may be between 1–2 / 100000/ years[3]. Primary involvement is common in the stomach or ileum but occassionally it involves the colon and rectum[4]. But in this series, involvement of the ileum was the commonest and colonic involvement was the next common site. Incidence of gastric lymphoma is reported to be .5–8% of all gastric malignancies. Lymphoma comprises of about 18% of the malignant tumours of the small intestine[6], 5% of al colonic and 0.1% of all the rectal tumors[2].

Bawson et al.[7] has given some criteria on which diagnosis of primary gastrointestinal lymphoma should be based these are:–

1. During first examination, there must not be any superficial lymphadenopathy.
2. There must not be any mediastinal lymph node enlargement.
3. Total and differential count of W.B.C. should be within normal

limit.

4. At laparotomy, gastrointestinal lesions should be predominent and only lymph nodes obviously affected should be those in the immediate neighbourhood.
5. Liver and spleen should appear tumour free.

In our series, we had ten cases of primary involvement of G.I. tract. These cases have satisfied the above mentioned criteria. Presentation of gastrointestinal lymphomas varies according to site and extent of involvement. Commonest symptoms of gastric lymphomas are pain, anorexia, nausea, hematemesis and melaena. Peptic ulcer like manifestation occur in about 30% of cases[5], which is consistent with the presentation of our single patient.

Malabsorption is a presentation of small intestinal lymphoma. It is most likely to be present when there is diffuse involvement in the mesenteric lymph nodes or even in cases with only extra–abdominal nodal involvement, malabsorption may occur[8]. Two of our patients, presented with long continued diarrhoea and one of them had lymphomatosis and the other patient had extensive mesenteric node involvement with diffuse infiltration in the ileum.

Lymphoma involving small intestine may minic tuberculous and ischaemic strictures and there can be multiple skip lesions[9]. Majority of patients in this series with small intestinal involvement had multiple skipped annular strictures and all of them had the features of subacute small intestinal obstruction.

Common symptoms of large bowel lymphomas are occassional abdominal pain and rectal bleeding[10]. All of our patients with colo–rectal involvement and abdominal pain, but rectal bleeding was present only in 2 patients. One young patient had the presentation simulating abscess for 3 months. Two patients had history suggestive of acute appendicitis. Both of them had palpable lump in the right iliac fossa and were clinically thought to be unresolved appendicular lump. Appendicectomy was done in one patient and in the other parient right hemicolectomy was done. In the post appendicectomy period the lump increased in size and had parietal involvement, right hemicolectomy in this patient was done 3 months later.

Radiological findings are not diagnostic, findings depend on the nature of morphological involvement. In this series, findings suggestive of duodenal obstruction, small intestinal stricture, prominent ileal folds, filling defect in the colon, double contrast of large intestine showed such prominent mucosal folds to give pseudopolypoidal appearence.

30% of reticulum cell sarcoma of stomach on endoscopy show a peculiar 'volcano like' ulcer crater with raised margin[5]. In another series endoscopic biopsy was positive in 83.4% cases[5]. In secondary lymphoma, aspiration cytology may be negative as the lesions are often submucosal and small[11].

In our series endoscopy of gastric lymphoma patient showed diffuse antral mucosal involvement with ulceration and it was thought to be carcinoma.

Conclusion

Gastrointestinal lymphomas differ from nodal lymphomas. Frequency of histological sub–types are different,

majority being of high grade maliganancies. Apparent cure of some tumours which histologically were high grade malignant by surgical resection alone suggest a fundamental biological difference from nodal lymphomas[12]. Lymphomas tend to be more malignant in the lower than in the upper intestinal tract[13]. Incidence of lymphoma in our country is not known. Lymphomas presenting with peripheral lymphadenopathy is frequently seen in our country. Lymphomas involving the abdominal organs are also seen occasionally. The presentations of this type of lymphoma is varied. Patients having abdominal symptoms with or without a palpable mass who do not otherwise fit with more common diseases, are in the group with high probability of having lymphoma. Early diagnosis and appropriate treatment can increase longevity and relieve the symptoms in many patients. Histological typing is important as the treatment and prognosis depends upon this.

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COMPARATIVE EFFICACY OF BLOOD, URINE, STOOL AND BONE-MORROW CULTURES FOR ISOLATION OF SALMONELLA TYPHI IN TYPHOID FEVER.

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M.S. Akbar 3

Key Words :

Typhoid Fever, Salmonella typhi, Bone-marrow Culture.

Summary :

The isolation of Salmonella typhi from blood, urine, stool and bone-marrow was compared in 8 patients with typhoid fever. All of the had received some antibiotic therapy before presentation. S. typhi was isolated from bonemarrow culture in 7 patients (87.5%). In contrast, S. typhi was isolated from stool cultures in only (50%), from blood cultures in 2(25%), and urine cultures in 1(12.5%). Culture of bone-marrow was the most sensitive test for the isolation of S. typhi.

Introduction :

Typhoid fever is a common endemic disease in Bangladesh. Most cases are diagnosed on the basis of the Widal Test, which may often give false positive results (Duguid, 1973). Confirmation of acute typhoid fever requires the bacteriological isolation of S.typhi (Hornick et al 1970). In untreated patients blood cultures, especially, are positive in 80% cases (Hornick et al 1970). However the majority of febrile children in this country come to hospitals late in the course of the disease and almost all have had some form of antibiotic therapy. This leads to a low positivity of routine cultures (Gilman et al, 1978).

Previous studies in other countries have shown that bone-marrow aspirate cultures yeild S. typhi in all stages of the illness, despite prior antibiotic therapy. (Gilman et al, 1978 , Robertson et al 1968). We report the initial results of a prospective study where we have compared the relative efficacy of cultures from various sites for recovery of S. typhi, in a population where blind therapy with antibiotics in common.

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Patients and Methods :

Patients : Study case were selected from the admitted patients of the Dhaka Shishu Hospital. Typhoid fever was defined as an acute illness in a patient with compatible signs and symptoms accompanied by bacteriological recovery of S. typhi from at least one site. 10 children between 1–15 years age were initially taken for study. 2 were excluded as they did not meet the criteria. A thorough history, including history of prior antibiotic therapy, was taken and physical examination performed.

Bacteriology : Cultures were performed as follows :

(1) 5 ml of blood was inoculated into tetrathionate broth or supplemented peptone broth and incubated for 7 days at 37°C. Simultaneous sub–cultures of the broth was done every 24 hours on Mc–Conkey and S–S (Salmonella – Shigella) agar media.

(2) 5 ml of bone–marrow was aspirated from the iliac crest and cultured by the above mentioned procedure.

(3) Stool was plated directly on Mc–Conkey and S–S agar media and incubated at 37°C for 24 hours.

(4) Urine was plated directly on Mc–Conkey and S–S agar media and incubated at 37°C for 24 hours.

Suspicious colonies were identified by standard techniques (Edwards P.R. et al 1972). Sensitivity to chloraphenicol, ampicillin and co–trimaxazole was measured.

Result :

The frequency of isolation of S. typhi from the various culture sites is given in Table I. Bone–marrow cultures were positive in 7 (87.5%) patients, stool cultures in 4 (50%) patients, blood cultures in 2 (25%) patients and urine culutre in 1 (12.5%)patient. S. typhi was isolated from bone–marrow alone in 2(25%) patients, and from stool alone in 1(12.5%) patient. No organisms were isolated from blood and urine alone.

The results of the various cultures were compared with the duration of the illness with which the patients had presented (Table–II). 33% of blood cultures were positive in the 2nd week. This was reduced to 20% in the third week. Urine culture positivity rose from 0% to 20% from the 2nd to the 3rd week. Similarly stool culture positivity rose from 33% to 60% from the 2nd to the 3rd week. Bone–marrow cultures were positive 100% and 80% in the 2nd and 3rd week respectively.

All isolates were sensitive to ampicillin, chloramphenicol and co–trimaxazole.

Table–I : *Frequency of isolation of salmonella typhi from various body fluids.*

Site of Culture	No. of patients cultured	No. positive (%)	No. of patients with positive culture from one site alone (%)
Blood	8	2 (25)	0
Stool	8	4 (50)	1 (12.5)
Urine	8	1(12.5)	0
Bone Marrow	8	7(87.5)	2 (25)

Table–II *Comparison between duration of illness and the culture positivity of the various body fluids.*

No of patients	*Duration of illness in weeks*	*No. of positive cases (%)*			
		Blood	*Urine*	*Stool*	*Bone Marrow*
3	*2*	*1 (33)*	*0*	*1 (33)*	*3 (100)*
5	*3*	*1 (20)*	*1 (20)*	*3 (60)*	*4 (86)*

Discussion :

In most centres the confirmatory diagnosis of typhoid fever rests on the isolation of S. typhi from blood cultures. However, the effects of prior antibiotic ingestion are never taken into consideration. Over–the–counter sales of antibiotics and self–therapy are common practices in our country. This form of blind antibiotic therapy most often results in inadequate treatment rather than cure. All these may lead to a low positivity of blood cultures (Robertson et al 1968).

Our study revealed a blood culture positivity in 2(25%) patients only. This low percentage was presumably due to the ingestion of antibiotics in all our patients. Conversely, the bone–marrow cultures were positive in 7(87.5%) cases, thus establishing itself as an important procedure in the isolation of S. typhi in typhoid fever.

In one patient S. typhi was isolated from stool alone. This patient could be a carrier and has to be followed up with monthly stool cultures till be stops shedding the organism.

Most cases came to hospital in the second or third week of the illness. Nonetheless, bone–marrow cultures yielded a high percentage of positivity, thus enabling us to come to an early and exact diagnosis.

No strains were resistant to chloramphenicol, co–trimaxazole or ampicillin. However, drug resistence should be searched for as cases have been reported from Vietnam and Mexico. (Vazquez et al 1972; Butler et al, 1973).

Culture of bone marrow is costs little. It may be done in most hospitals in Bangladesh. Our data suggests that prior antibiotic therapy suppresses S. typhi bacteraemia, but does not eradicate the organism sequestered in the bone marrow.

We have reported the intial results of a prospective study. Our conclusions have to be confirmed on a larger population of patients.

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TUMORAL CALCINOSIS–AN UNRECOGNISED DISEASE. REPORT OF TEN CASES.

A. Sobhan Pramanik

Key Words :

Tumoral calcinosis.

Summary :

Tumoral Calcinosis is a peculiar, not very uncommon usually bilateral symmetrical, tumour–like mass characterized by soft tissue calcification for no apparent reason. All cases in this series have occured in old feable village women. Recognition of ten cases in surgical out–patient department of IPGMR in about two years period suggest that the condition is not rare but goes unrecognised in many other patients due to lack of familiarity of the condition. Surgical excision appears to be the only effective treatment.

Asstt. Prof. & RS (General) IPGM&R

Introduction :

This condition was first given the name of tumoral calcinosis by Inclan in 1943, althouth it was originally described by Duret in 1899. Only a few cases have been reported since then, until 1965, when Lafferty et al summarised the cases in the literature and reported the first extensive investigation of typical case in his series–and concluded that the calcification is dystrophic in nature. It has also been reported by Palmer 1966 and Thomson. 1966.

MC clatchie and Bremner (1969) described 26 cases fox of calcified, tumour–like masses of unknown aetiology. These had occured in the soft tissues mainly around the hips and buttocks. Malik and Hasan (76) reported a clinicopathological study of 20 cases.

Tumoral calcinosis may be solitary, bilateral or may affect multiple sites. It is quite different from soft tissue calcification seen in hyper–calcaemia due to chronic renal failure and other causes. Trauma has frequently been blamed as an aetiological factor, but never proved. On the other hand, a familial incidence, hyperphosphataemia and chronic haemodialysis with hyperphosphataemia have all been observed in a few cases. We report 10 cases during two years period in IPGMR and it appears that the disease cannot be all that rare but it probably goes unrecognised due to lack of familiarity. Clinical diagnosis made by other doctors in cases of this series are Calcified sebaceous cyst, bony growth, fibro–sarcoma, neurofibroma, and dermatofibroma etc.

Patients & Methods :

Case Reports :– The main features are summarised in Table–1. All cases occured in females and age varies from 45 to 75. The site of involvement is lateral aspect of buttock in all cases. In six cases, there were bilateral involvement and the rest 4 (four) detected in one side only. There was no family history in any of the cases and none of the lesion has recurred at follow–up 6 months to 2 years after excision. There was no abnormality in serum calcium or Phosphate levels.

Case No. 1 :

A thin 56 yrs old woman came to IPGMR referred from BDR Hospital with complaints of painless swellings over the lateral aspect of buttock on both sides which had grown slowly over 20 yrs. period to a size of 5cmx 6cm. She could not remember any definite history of trauma but gave the history of using her buttock to carry water–jar and baby. The masses have gradually increased in size and was painless through out the course of development. On examintion, the masses felt hard, irregular lobulated and non–tender. The masses were not freely mobile and the overlying skin appeared to be adherent to the masses. X–ray examination showed a lobulated radio-opaque extra- oesseous masses in soft tissues on both buttocks. On excisional biopsy, creamy fluid leaked from the masses which dried to a chalky powder.

Table I: *Summary of case Reports*

Case No.	Age yrs	Sex	Site	Duration yrs	serum+ca	po4
1	56	F	Hip (R)	20	7.5	3.0
2	45	F	Hip (Box)	15	8.0	3.5
3	60	F	Hip (L)	10	8.2	2.8
4	60	F	Hip (Both)	2½	7.5	3.2
5	50	F	Hip (Both)	7	7.0	3.0
6	67	F	Hip (L)	12	8.0	3.5
7	45	F	Hip (R)	5	7.0	3.0
8	55	F	Hip (Both)	10	8.0	3.2
9	75	F	Hip (Both)	20	7.5	3.0
10	50	F	Hip (Both)	6	8.2	3.5

Fig–1–A pt of tumour calcinosis.

Post operatively, the wound was infected but healed after some dressings.

Case No. 2 : A 65 yrs. old woman came from village presented with 15 yrs. history of pain buttock on both sides. Gradual increase in size of the masses, and from the last two yrs., she developed non–healing ulcers over the masses with some showed a well–demarcated, lobulated radio–opaque mass in soft tissues separated form iliac bones. Excision was difficult because of adherence of the masses to underlying and overlying tissues. Post–operatively the wound heal was delayed.

Radiology :

Tumoral calcinosis on plain X–Ray appears as lobulated masses of radio–opaque material which is extra–skelatal. Hony–comb like cysts are seen in some cases. Nearby bone or joints are not involved. Size and shape may vary as according to the extent of disease.

Pathology :

The tumour–like swellings removed surgically were well–defined, lobulated masses containing multiple sac–like spaces filled with amorphous chalky

Fig–2 plain X–ray of pelvis showing calcifications

materials and occasionally with liquefied material. In some cases the cyst were lined by granulomatous inflammatory tissue made up of mononucleate and multinucleate histiocytes, the latter mainly of foreign body giant cell type. In the earlier or more active stages the lesions took the form of small cystic spaces traversed and limited by fine

fibrous trabeculae. The contained fluid in which lay masses of minute, round, calcified granules, which appeared more closely aggregated at the edges of the cysts. Lying in the cysts among these minute granules were much larger, irregularly rounded masses. Chronic inflammatory cells were present outside this in variable but usually limited numbers. There was no evidence of fat necrosis or of old haemorrhage and no organisms were ever found. No foreign material of any sort was seen in routine section. There was no vasculitis or deposition of fibrin–like material.

Inspite of superficial histological similarities, other necrotizing and granulamatous lesions like tuberculosis, rheumatoid disease, granuloma induratum etc. could be confidently ruled out and no evidence of a pre–existing lesion such as a ganglion, a bursa or a soft tissue tumour could be found.

Discussion :

Tumoral calcinosis is a peculiar tumour–like condition with a consistent pathology characterized by massive calcification for no apparent reason. All ten cases in this series show indentical appearances. All cases are old feable village women presenting with painless swellings slowly growing over period of years in the lateral aspect of buttock. 7 cases out of 10 had bilateral lesion and 3 had in one side only. All patients were above 40 and oldest patient was 75. Duration of lesion varies from 2½ yrs. to 20 years.

It presents as a painless swelling usually in the vicinity of joints but its relationship to a joint is less clear. Palmer reported involvement of tumoral calcinosis in finger, toe, elbow, knee and around scapula. He also reported records of male predominence in his series with age variation from 60–65. Several authors have suggested a familial history. Density on radiographs is variable and fluid levels may be seen in the cysts with large lesion. The chalky, white fluid that escapes on incising the mass is characteristic. Histology shows a honey–comb of cysts filled with calcified and or liquefied debris, separated by fibrous septa that may be–cellular or lined by granulomatous inflamatory tissue. Veress et al 76 suggested two phases in the calcareous material surrounded by mononuclear and giant cells of histiocytic origin and an inactive phase in which these are replaced by dense collagens.

The aetiology remains unknown but three possiblilities have been put forward. First, mechanical injury or at any rate, repeated minor trauma particularly in our cases in whom the anatomical locations of the lesions are thought to be those areas which usually come into contact with the hard beds or the grounds during sleeping. Carrying of water–jar with the help of lateral aspect of hip by the poor village women in our country may cause repeated minor trauma and may explain the aetiology.

Secondly, a racial or genetic predisposition; the condition is certainly much commoner in Africans but a familial incidence is rare. Balachandran et al (80) described a family in which tumoral calcinosis occured in 7 of 13 siblings. None of our cases gave the history of any familial incidence.

Thirdly, an abnormality of phosphorus metabolism, which has been observed mainly in related patients. But, all cases in our series have normal serum

phosphate level.

Lufkin et al (80) studied 2 related patients with tumoral calcinosis and hyperphosphataemia to determine their renal tubular response to parathyroid hormone and acetazolamide, a phosphaturic agent. During the baseline period both patients showed an abnormally low excretion of phosphorus despite their hyperphos–phataemia. Parathyroid hormone and acetazolamide caused an increase in excretion and their effects were additive. Levels of vitamin D metabolites were normal in both patients. They concluded that patients with tumoral calcinosis have a reduced ability to exerete phosphorus which is not due to an impaired response to parathyroid hormone or phosphaturic agents or to a distrubance of vitamin D metabolism.

From pathological point of view one some what reluctantly puts tumoral calcinosis into the group of dystrophic calcification i.e. calcification in degenerated or dead tissues or extracellular organic material. But in tumoral calcinosis, the primary lesion is a disgestion of collagens near joints or bones by cells with the morphology and function of osteoclasts. This is accompanied or followed by calcification in the digestion fluid in the form of minute granules, as the necessary alkalinity and alkaline phosphatase are present. Calcification is therefore secondary and is not associated with any distrubance of calcium or phosphorus metabolism.

The process differs from other examples of dystrophic calcification in that it is associated with an increased and not a reduced vascularity and is progressive and self perpetuating. If the condition is remembered differential diagnosis is not difficult.

Viz :

1. Dystrophic, where calcium is deposited in dead tissues.
2. Calcinosis; where the calcium lies in or under the skin as in calcinosis unversalis or circumcision.
3. In viscera, due to hypercalcaemia or Hyperphosphataemia.
4. Arterial calcification in atheroma or medial degeneration.
5. Calcification within calculi.

Undoubtedly tumoral calcinosis is separate and sixth entity.

There are four other conditions in which similar calcified tumours occur, but they are all quite distinct.

1. Chronic vitamin–D intoxication.
2. The Milk–alkali syndrome.
3. Chronic nephritis.
4. Primary hyperparathyroidism.

In some way tumoral calcinosis is the exact reverse of myositis ossificans, where bone formation, with or without a history of trauma, occurs in muscles and other non–osseous tissues near to joints. Here connective tissue cells undergoing metaplasia to osteoblasts and laying down the dense collagen of osteoid tissue, follwed by the deposition of calcium phosphate to give bone. In tumoral calcinosis we have the destruction of pre–existing collagen in peri–articular nonosseous tissues by cells with osteoblastic functions, followed by deposition of calcium phosphate in the fluid accompanying the digestion of collagen. The sites of selection are all near joints which are liable to trauma in the form of pressure during sleep over very hard beds. The factor of predisposition, however, is probably the more important operative one in most cases.

A variety of treatments have been tried in these cases. Most of those patients got antibiotics randomly with analgesics and corticosteroids in some cases — without any success. There is no doubt that full surgical removal is the correct treatment and essential. Recurrence has been reported in cases of incompleted removal of the masses. Soft tissue radiography should be a pre–operative procedure as well, to check early the full extent of the lesion and to guide the surgeon. None of the cases in this series reported yet any recurrence after surgical excision.

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EFFICACY OF SUBLINGUAL NIFEDIPINE IN THE EMERGENCY TREATMENT OF SEVERE HYPERTENSION

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S.M. Altaf Hossain 3.
Firoz Ahmed Quraisi 4.

Key Words :
Hypertension;sublingual Nifedipine

Summary :

Efficacy of Nifedipine in the treatment of hypertensive emergencies is evaluated. 21 patients who had a systolic Blood pressure of 200 mmHg or more (16 cases) or a diastolic blood pressure of 120 mmHg or more (20 cases) were given Nifedipine sublingually. 17 patients (80.95%) responded to single dose of 10mg Nifedipine with a fall in Blood pressure from 209.4 ± 31.9/123.2 ± 6.8 (Mean ± SD) mmHg to 147.3 ± 20.9/92 ± 7.3 mmHg (mean ± SD) 24.1 ± 16.8 minutes. 4 patients (19.05%) required 2nd dose of 10 mg. Nifedipine. 2 patients responded with the reduction of blood pressure from 222 ± 3.5/155 mmHg to 140 ± 28.2/100 mmHg in 112.5 ± 31.8 minutes. 2 patients responded poorly with a reduction of B.P. from 260 ± 14.1/140 mmHg to 192.5 ± 38.8/125 ± 14.1 mmHg in more than 2 hours. Noted side effects were Hypotension (2 cases), Hot Flushing (2 cases).

Nifedipine is effective and quite safe as a non parenteral agent in the management of hypertensive emergencies.

Introduction :

Nifedipine, a calcium channel blocker has successfully been used in angina of different aetiology and other cardiovascular disorders.[1-4] It inhibits contraction of smooth muscle by impairment of calcium entry in side the cells[2] producing vasodilatation which

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results in lowering of systemic vascular resistance [5]. Thus it acts as a vasodilator and can be expected to have a marked blood pressure reducing activity[6]. Sublingual administration of Nifedipine produces a rapid fall of blood pressure and seems to be useful in the management of hypertensive emergencies.[8]

This study was aimed at demonstration of efficacy of Nifedipine used sublingually for rapid reduction of blood pressure.

Patients & Methods :

This prospective study included 21 patients who were treated in the cardiology department of IPGMR. Headache, vertigo, palpitation, restlessness, or features of encephalopathy necessitated rapid reduction of Blood pressure which was 200 mmHg or more (16 cases), or 120 mmHg or more (20 cases) or both (15 cases).

Blood pressure was measured by Mercury Manometer in the Lying position two times at the interval of 5 minutes. Total disappearance of korotkoff (phase–V) sounds were recorded as diastolic blood pressure[9]. Thorough physical examination was done in each patient.

10 mg Nifedipine marketed in Bangladesh as capsule was administered sublingually to each patient after inflicting 2–3 perforations in it with a 25 needle so as to enable active constituent coming into contact with sublingual mucous membrane immediately after chewing. Thereafter keeping the B.P. cuff attached to arm blood pressure was measured every 5 minutes and subsequently after every 10 minutes till consecutive 2 readings revealed the B.P. reaching found at the desired level, oral medication was then started. Failing to achieve an adequate response by 30 minutes another 10 mg. capsule was similarly administered. All the recordings of B.P. were taken in supine position. Complete emptying of Nifedipine was ensured by asking the patient and examing under–surface of the tongue.

Student's 't' test for paired Data was used for the comparison of Pre and post treatment blood pressure, 't' test for unpaired data was used for comprison of blood pressure of two separate groups. Datas are presented as mean ± SD).

Results :

Out of 21 patients 11 (52.38%) were male, 10 (47.61%) were female. Their age were 53 ± 15.4 years in male & 47.8 ± 12yrs. in female. 17 patients (80.9%) responded to single dose of Nifedipine with reduction of B.P. from 209.4 ± 31.9/123.2 ± 6.8 mmHg to 147.3 ± 20.9/92 ± 7.3 mmHg. Time required for reduction of B.P. to the goal level varied from 5 ± 60 minutes (24.1 ± 16.8 mins., mean ± SD).

4 patients required (19.1%) second dose of 10mg. Nifedipine sublingually with resultant reduction of B.P. in 2 (50%) patients from 222.5 ± 3.5/155 ± 7 mmHg to 140 ± 28.2/100 mmHg in 112 ± 31.8 minutes. 2 (50%) patients responded moderately (260 ± 14.1/140 mmHg to 192.5 ± 38.8/125 ± 14.1 mmHg) but upto the goal level i.e. 160/100 mmHg or less even after 2 hours.

Reduction of blood pressure in 17 cases was significant — both systolic

Table–I

Factors Entry Data :	Results. Single dose responders
Men, n = 11 mean age – 53 ± 15.4 yrs. Women, n = 10 mean age yrs 47.8± 12	n 17 Final B.P. 147.3 ± 20.9/92±7.3 Time required 24.1±16.8 minutes 2nd dose : n 4 Responder 2 non responder 2 Final B. P. Responders 140±28.2/100
B. P. mmHg Systolic 200 or more 16 Diastolic 120 or more 20 Systolic 200 or more plus diastolic 120 or more–15 Initial B. P. (Responders) 209.4±31.9/123.2±6.8 Initial B. P. (non responders) 241.2±23.2/147.5±9.5	Non responders 192.5±38.8/125±14.1 Time required for responders 112.5±31.8 minutes. Side–effects : Hypotension n 2 Hot flushing, n 2

(P< .01) and more so in diastolic (P< .001). Initial blood pressure was significantly higher in 4 cases who required second dose of Nifedipine (P< .02) then the 17 cases who required single dose. Reduction of blood pressure in 2 of the four cases did not reach the goal level in comparism to the other 2 though rate of fall of B.P. not significant (P<.1). This may be due to CRF and Malignant Hypertension from which they were suffering from.

Approximate duration of hypotensive action of Nifedipine was observed in 6 cases out of 21 & was found to be 3½ hours. Mean heart rate decreased from 85 ± 6 to 70 ± 4 in the post drug period.

Table–II

Medication received previously			Types of drug taken–singly or in combination		
No drug	n	4	Methyldopa	:	8
Single drug	n	2	Prazosin	:	3
Double drug	n	5	Diuretics	:	7
Triple drug	n	3	Reserpine	:	1
Insufficient drug history	n	7			

Side Effects :

Out of 21 patients marked hypotension (1, 90/60 mmHg; 1,100/60 mmHg) was observed in 2 cases, Another 2 patients complained of hot flushing. No other side effects were noted.

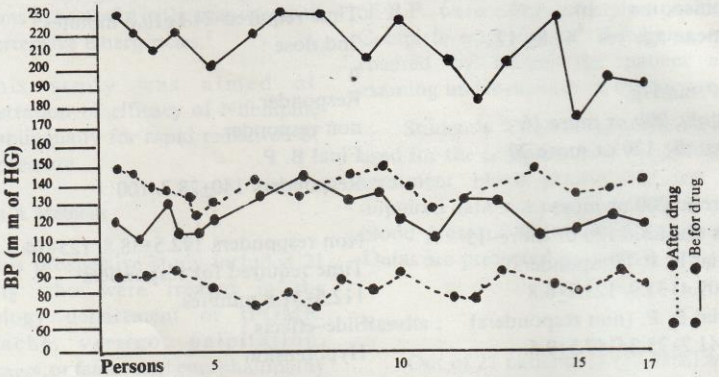

Fig 1. *Blood pressure (mean + SD) of 17 patients who responded to single dose of Nifedipine.* *Top curve–systolic B.P. Down curve–Diastolic B.P.*

Discussion :

Antihypertensive effect of Nifedipine was described in 1972 by Klutsch et all and subsequently confirmed by others. Nifedipine has been widely used for Angina pectories & other cardiovascular disorders. But the experience regarding its antihypertensive effect is relatively less known to us.

This study (a pilot study) comprising 21 patients was aimed at assessing the efficacy of Nifedipine as an emergency antihypertensive agent. Murakami et al studied 13 patients with Nifedipine in 72 and observed sharp drop of blood pressure. He reported the increase in heart rate. Bear et al successfully treated 42 hypertensive patients out of 43 with Nifedipine sublingually. Recently Jacob I. Haft et al[3] carried out a therapeutic trial with Nifedipine in hypertensive emergencies in 63 patients. With success they had treated 61 patients out of which 42 responded with single dose of 10mg. Nifedipine in 39.9 ± 13 minutes and 19 responded with second sublingual dose in 66 ± 17.8 mins. of them develop hypotension and they recommended sublingual Nifedipine as safe & effective method of Non parenteral therapy.

In this study significant reduction of B.P. is noted in 17 patients out of 21 with single dose and in 2 patients with double dose. Mean time required in single dose responders was 24.1 ± 16.8 mins. So, this study confirms with that of Haft & Litterer's study indicating that it is quite effective in prompt reduction of B.P. in emergencies. 2–3 perforations in each

capsule before administration ensured rapid absorption (as indicated by response) as opposed to the 10 perforations in Haft et al study. Out of 2 who did not respond adequately 1 had been detected as a case of Malignant Hypertension & 1 as Chronic Renal Failure. Haft et al study did not report of any side effects but 2 patients in this series developed marked hypotension and another 2 hot flush. It should be kept in mind during treatment of severe Hypertension that rapid lowering of B.P. may precipited cerebrovascular accident which is undesirable. Previous medication of hypertension did not produce different response. No other adverse effects were noted in the study which indicates that sublingual Nifedipine is quite safe and effective in case of hypertensive emergencies like that of Haft et al's study. But the number of subjects in this study in small i.e. 21 cases. Moreover haemodynamic study, coronary blood flow & plasma renin level were not done. So firm conclusion can not be made.

Conclusion :

Sublingual Nifedipine is effective & safe for rapid reduction of blood pressure thus may replace the utility of parenteral therapy in case of emergencies. But further clinical trial with large no. of patients along with haemodynamic study, alteration in plasma renin profile is needed to establish its hypotensive effect.

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APPENDECTOMY IN APPENDIX MASS

Shafiqul Hoque

Key Words :
Appendectomy; Appendix Mass; Appendicitis.

Summary :

Eighteen patients with early appendix mass (within 4 days of onset) has been operated upon for a curative resection. The masses were found to be formed by inflammed appendix, caecum, omentum, ileum and parietes in varying combinations. Appendectomy was successfully employed by blunt finger and sharp scissor dissection without significant per-operative hazards. Post-operative outcome was satisfactory with acceptable complications of wound infection in 27.8% and mild diarrhoea in 5.55% cases. The average hospital stay was 11.83 days (5-20 days). The Operative procedure and the advantages of appendectomy in early appendix mass are discussed.

Introduction :

Controversy does exist whether the appendix mass should be primarily operated upon or managed conservatively. In our country a conservative approach has been universally advocated observing the mass for several weeks for an elective appendectomy later on. In this way of management a number of patients develop an abscess or may require an operation in unfavourable situation. Such complication of appendix mass can be prevented if the offending appendix is removed at the first presentation. With this idea primary appendectomy has been successfully employed in patients with early appendix mass after an attack of acute appendicitis This paper reports their clinical course, operative indication, technique and outcome of these patients.

Materials and Methods :

During the period of 1979 to 1982 in the Dhaka Medical College Hospital 18 patients have undergone laparotomy for a mass in the right lower quadrant which had formed within 1-4 days after symptoms of acute appendicitis. Clinical examination excluded an abscess formation. In this regard a visible or fixed mass was taken as well-advanced & unsuitable for a primary appendectomy and henceforth excluded from the series. Patients in which the mass was obscured or not well-defined by the muscle

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rigidity, were re–examined under general anaesthesia to define the mass before exploration.

The abdomen was explored under general anaesthesia through a Lanz incision in majority cases or by right mid–paramedian incision in cases where the lump was ill–defined or doubtful. After the exploration the morbid anatomy was identified and the mass was isolated by placing mops all around. A cleavage was then detected through which a gentle finger dissection was applied for separation of adherent organs. Adherent omentum was usually proximally ligated and divided to be removed en masse. In some patients, adherent inflammed ileum provided a technical difficulty to blunt finger dissection because of its visual similarity to the inflammed meso–appendix. A sharp scissor dissection applied close to the appendix accomplishes the job without injuring the gut. The base of the appendix was healthy in most of the cases and dealt with in the usual manner of ligation, division & inversion of stump. In 2 patients where the entire appendix was gangrenous, it was divided at the level of healthy caecal wall under purse string suture protection and the stump was inverted by another purse string suture. In one case, sero–muscular tear of caecum has occured during separation of adherent caecum tht was repaired by few interrupted catgut stiches.

In patients with extensive gangrene or much adhesion a drain was left through a seperate stab wound for few days. The wound was then closed in layers.

Post–operatively the patient was kept on intravenous fluid for 2 days and covered with broad–spectrum antibiotic for 5–7 days. The post–operative complications and the duration of hospital stay were recorded.

Results :

Six patients were female and 12 were male with their age ranging from 2nd to 5th decade (Table I).

Six patients presented within 24–48 hours of onset of symptoms of acute appendicitis whereas the rest of the patients had experienced the attack 48–96 hours before presentation (Table II). Six patients had previous attacks of appendicitis (Table III).

Table IV shows the principal symptoms of pain, fever and nausea or vomiting.

In 15 patients the mass was detected by initial clinical examination and in 3 cases it was detected under general anaesthesia.

Table I : *Age & Sex Distribution*

Age (Years)	Male	Female	Total
Below 20	4	2	6
21 — 30	2	2	4
31 — 40	4	2	6
Over 40	2	0	2
	12	6	18

Table II : *Duration of Symptoms*

Period	No. of Patients	Percentage
24–48 hours	6	33.33%
48–96 hours	12	66.67%

The table VI shows the morbid anatomy of the mass where it was formed by the inflammed appendix, omentum & parietes in most of the cases (44%).

Wound infection was the major post–operative complication occured in 5 patients which was dealt by repeated dressings & secondary sutures when necessory. One patient developed diarrhoea on the 3rd day that was treated by oral saline.

The average hospital stay was 11–83 days ranging from 5 to 20 days.

Table III : *Previous attacks of appendicitis*

Frequency	No. of Patients	Time of previous attacks
No attacks	12 (66.67 %)	
One attack	4 (22.22%)	3 months, 6 months, 1 yr & 2 yr respectively
Two attacks	2 (11.11%)	3 months & 1 yr and 1 yr & 1½ yr respectively.

Discussion :

Primary appendectomy in early appendix mass could prevent the unwanted complications of abscess formation in about 10–20% and recurrent appendicitis in about 3–20% patients if treated conservatively (Table VII). Even there are reports of death from pulmonary embolism during non–operative treatment of appendix mass (Foran B et al) or after operation for abscess (Hoffmann J et al, '84.) In selecting patients for primary appendectomy in appendix mass after an attack of acute appendicitis, a history of less than one week duration is important. Because, the collagenous tissue (principal tissue to form adhesion) that forms in the process of inflammation within 5 days are fine and immature (Peacock EE '79) which can be easily lysed. Moreover, Jordan JS ' 79 et al found that an abscess was formed in appendix mass with an average duration of symptoms of 7.8 days though it may occur within 2 days. So a patient with appendix mass is less likely to develop an abscess within 7 days of symptoms. When anterior abdominal wall could not be moved freely from the mass, the mass is fixed, the case should be taken as well advanced and not suitable for primary appendectomy. Failure to detect mass due to rigidity and tenderness is not a contraindication where examination under anaesthesia prior to laparotomy might reveal an operable mass.

A generous incision is necessary for good exploration. Either a horizontal incision or a lower right paramedian incision can be employed. However a

Table IV : *Principal Symptoms*

1. Pain	a) Periumbilical onset	11	61.11
	b) Lower abdominal onset	7	38.89
2. Fever	a) Below 100°F	8	44.44
	b) Above 100°F	10	55.56
3. Nausea/ Vomiting	a) Present	16	88.89
	b) Absent	2	11.11

muscle–cutting horizontal incision with or without extension could probably deal all the cases. Adhesive obstacles was not found to be of much difficulty by blunt finger dissection in this series of early appendix mass. As all the patients in this series were of 4 days duration the author suggests that appendix mass of less than 1 week duration could be managed by primary appendectomy. The technical difficulty in dissecting the inflammed ileum because of its close similarity with vascular adhesions could be overcome by keeping the plane of dissection closer to the appendix. And hazards of notable bowel injury or spread of sepsis was not encountered here as also in series of Foran B et al. In the posterior dissection the ureter & gonadal vessels might need attention, however the author did not find any difficulty in this situation. If the entire appendix is gangrenous, there is a collection of pus or much vascular adhesions need to be seperated it is better to keep a drain for few days.

Wound infection of 27.8% in this series can be well compared with 43% of Arnbornsson E and 56.25% of Puri P et al (81). Incidence is more when operated on abscess in their series. In 1971 a Lancet editorial stated that estimates of the frequency of wound infection after appendectomy vary widely, up to 30% or even higher. The rate may be reduced by good surgical technique, protective wound packs, antibiotic prophylaxis as advocated by Gaffney PR (84) Appendectomy on early appendix mass especially before the formation of abscess will probably reduce the incidence of faecal fistula generalised peritonitis, pelvic abscess, wound dehiscence that has

Table V: *Clinical Findings*

Major Findings		No. of Patients	Percentage
1. Palpable Mass.	a) Well defined	11	61.11
	b) Ill defined	4	22.22
	c) Not defined but detected under anaesthesia	3	16.67
2. Marked rigidity	a) Present	14	77.78
	b) Absent	4	22.22
3. Tenderness	a) Localised	14	77.78
	b) Diffuse	4	22.22

Table VI : *Morbid Anatomy of the Appendix Mass*

Morbid Anatomy	No. of Patients	Percentage
1. Inflammed appendix + Omentum	4	22.22
2. Inflammed App. + Omentum + Parietes	4	22.22
3. Inflammed App. + Omentum + Parietes + Ileum	3	16.67
4. Inflammed App. + Omentum + Ileum	2	11.11
5. Inflammed App. + Omentum + Ileum + Caecum	2	11.11
6. Inflammed App. + Omentum + Ileum + Caecum + Parietes	2	11.11
7. Inflammed App. + Parietes + Ileum + Caecum	1	5.56
	18	100.00

Table VII : *Incidences of Abcess & Recurrent Appendicitis when appendix Mass treated Conservatively*

Author	No. of Patients	Incidence of Abscess	Incidence of Recurrence
1. Arnbjornsson E	27	6 (22.22%)	5 (18.5%)
2. Foran B et al	30	4 (13.33%)	4 (13.33%)
3. Hoffmann J et al	56	12 (21.4%)	9 (20.5%)
4. Janik JS et al	37	7 (19 %)	1 (2.7%)
5. Puri P et al	31	3 (9.6%)	1 (3.22%)
6. Shipsey MR et al	77	8 (10.0%)	
7. Skoubo–Kristensen E et al	193	23 (12.0%)	12 (7.1%)
8. Thomas DR	37	6 (19.3%)	2 (6.45%)

occured in randomly selected cases of Jordan JS et al, Puri P et al & Arnbjornsson E. None of these complications was encountered in the present series.

In Table VIII hospital stay in different protocols of appendix mass treatment in various published series is compared. Arnbjornsson E & Foran B et al has reduced the hospital stay to 6 & 7.5 days respectively (11.8 days present series) by primary surgery (Appendectomy) comparing with conservative treatment followed by elective (Interval) apendectomy. Reports of Janik JS et al, Jordan JS et al & Shipsey MR et al show better results. Drainage of abscess followed by elective appendectomy takes more hospital days for obvious reasons. Longer hospital stay with primary appendectomy in randomly selected series mentioned above were obviously for inclusion of late cases with well formed abscesses. The shorter & one time hospital stay by primary appendectomy will also reduce drug & man–hour utilisation.

Finally, the author recommends primary appendectomy in appendix mass of less than 1 week duration without clinical evidence of abscess. However in late cases a conservative approach as per text book teaching is yet a safer way of management.

Table VIII : *Hospital Stay in Different Protocols of Appendix Mass Treatment.*

Authors	Normal Resolution + Elective Appendectomy	Abscess Drainage + Elect. Appendect.	Primary Surgery
Arnbjornsson E	11 + 4 days		6 days
Foran B et al	11 + ?		7.5 days
Janik JS et al	10.9 + 10 days	23.8 days	
Jordan JS et al	13.6–14.5		
Puri P et al	18.1 + 8.4 days	23.7 + 10.1	32.3 days
Shipsey MR et al	16 days	32 days	15 days
Present series			11.8 days

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SURVEY OF INCIDENCE OF GOITRE AMONG THE STUDENTS OF EDUCATIONAL INSTITUTIONS OF DINAJPUR MUNICIPAL AREA BY USING RADIO-IODINE

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Fariduddin Ahmed 2

Key Words :
Goitre: Eductational Institution.

Summary:
During one and half years prevalence of Goitre among the students of Dinajpur Municipal area was studied by using radio-iodine 7.77% of pupulation surveyed are suffering from Goitre. Of which 7.41% is iodine dificiency goitre, 0.04% is cold nodule, 0.06% is simple goitre & 0.01% is multinodular goitre.

Introduction

During July 1981 to December 1982 A national goitre prevalence study was conducted by the Institute of Public Health Nutrition, Dietetics and Food Science. This included Dinajpur Sadar Upazilla, where survey at two locations were made and the number of persons suffering from goitre in school was found to be 3.66%. (1) The aim of this survey conducted by Nuclear Medicine Centre, Dinajpur (NMC,D) was to make a fresh assessment of the incidence of goitre among the students of educational institutions of Dinajpur Municipal Area and to classify them. This can be used as a reference point for the assessment of endemicity of goitre in future.

Materials and Method

In this survey 10,000 students from 19 different educational institutions were clinically screened for thyroid enlargement and of them 822 were brought to the Centre for radio-iodine uptake (RATU) and thyroid scanning. Of these, 45 were found to be normal by RAIU and Scan.

RAIU is a measure of the accumulation of iodine in the thyroid gland and it indicates the iodine status of the body as well as functional condition of thyroid cells. At NMC,D, 2hr. 24hr

Principal Medical Officer 1
Medical Officer 2
Bangladesh Atomic Energy Commission.

uptake rates are routinely measured. While 2hr and 24hr uptake indicate how much and how soon the radioiodine is accumulated in the gland, 48hr uptake gives a measure of the organification and discharge of the thyroid hormone into the circulation. thereby preliminary exclusion of cases of thyro–toxicosis are made. By throid scanning size of the thyroid gland is assessed. This method is also useful for localisation of aberrant thyroid tissue, determination of the extent and nature of thyroid enlargement and presence of thyroid adenoma or metastasis (Ahmed, '84).

Results :

National prevalence rate of goitre is 10.5% and that of Dinajpur District and Dinajpur Sadar Upazilla is 17.69% and 3.66% respectively (Rahman, '82).

Our survey showed that 7.77% of the population surveyed are suffering from thyroid enlargement i.e. goitre.

Table I : *Classification of thyroid enlargement as per thyroid scan and RAIU*

	No. of patient	Percentage
Total population surveyed	10,000	100%
No. of persons examined for thyroid swelling	822	8.22%
Iodine deficiency goitre. (IDC)	741	7.41%
Cold nodule	4	0.04%
Simple goitre	6	0.06%
Multinodular goitre	1	0.01%
Inconclusive test (Due to drug intake and and interferences with RAIU)	25	0.25%

Table–II *Age wise distribution of IDC*

Age in years		No. of patient	Patinet in %
Upto	10	170	1.70%
10	12	220	2.20%
12	14	215	2.15%
14	16	74	0.74%
16	18	13	0.13%
Above	18	13	0.13 %
Total	741	Total 7.41	

Table–III *Age and sex wise distribution of IDC*

Age in years	male		Female	
	No. of patient	Patient in %	No. of Patient	Patient in %
Upto 10	43	0.43%	127	1.27%
10 12	62	0.62%	158	1.58%
12 14	26	0.26%	189	1.89%
14 16	13	0.13%	61	0.61%
16 18	11	0.11%	38	0.38%
Above 18	4	0.04%	9	0.09%
	Total 159	Tota 1.59%	Total 582	Total 5.82%

Discussion :

In comparison with the clinical survey conducted by the Institute of Public Health Nutrition, Dietetics and Food Science (which is 3.66%) our survey showed that 7.77% of the sample is suffering from goitre of which 7.41% is iodine deficiency goitre; 0.04% is cold nodule; 0.06% is simple goitre; 0.01% is multinodular goitre.

In our survey highest predominance of goitre was in the 10–12 years age group in both sexes and 12–14 years age group in the female group.

From this survey it becomes evident that the total goitre population is not suffering from Iodine deficiency goitre alone.

Incidence of goitre is more in the 10 years to 14 yerars age group

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SURGICAL PROBLEMS OF THE TRIBAL PEOPLE OF THE CHITTAGONG HILL TRACTS

Robert J. Hart

Key Words:
Surgical Problem: Tribal people.

Summary:

Different tribles of people live in Chittagong Hill Tracts. Communications in the hill tracts are also poor. Very difficult to render the surgical services. Quiet a good number of patient with varities of diseases such as urinary calculi, carcinoma of Penis, peptic ulcers, ovarian tumour, carcinoma stomach etc are always available.

Introduction

The district of the Chittagong Hill Tracts lies in the South East corner of Bangladesh, and is inhabited mainly by tribal people whose ancesters came from Burma and farther East. The tribal population is said to be 600,000 of whom 450,000 are Chakma (Ali, '85). The other main tribes are the Marmas (Mogh), Tripura, Bawm, Murung and Khyang. Each tribe has its own customs, dress and language, and not all can speak Bengali. Communications in the hills are difficult, and there are few roads. Many injured patients arrive very late at hospital. Wild animals abound, and bear mauls and injuries from wild bear are not infrequent.

The Christian Hospital at Chandraghona was set up in 1907 to provide medical care for the hill people, and a Leprosy Home was started a few years later. As the hospitals are situated on the border of Hill Tracts and Chittagong district a large number of Bengali patients also come for treatment. There are interesting differeneces in the surgical problems of the two groups, which form the subject of this paper.

Results :

10 years survey of the operation records (November 1975–October 1985) TOTAL NO. OPERATIONS 26,275.

Bengali 24,565 Tribal 1,710 Percentage of Tribal patients 6.5%

Surgeon
Christian Hospital,
Chandraghona

Disease	total	Bengali	Tribal	%
Peptic Ulcer	661	660	1	0.15%
Carcinoma of Stomach	130	127	3	2.3%
Buergers' Disease	315	313	2	0.6%
Bladder Stones	131	73	58	44%
Other Stone (Renal, Ureteric, Urethral)	93	74	19	20%
Carcinoma of Penis	28	14	14	50%
Ovarian Cysts	162	128	34	21%

Discussion :

It is clear that urinary calculi, carcinoma of the penis and ovarian cysts are relatively common among the tribal people, while peptic ulcer, carcinoma of the stomach and Buergers disease are rare. The reasons for these differences are not completely known, but there are some clues.

1) *Urinary Calculi* are 10 times commoner in tribals than Bengalis, in particular bladder stones. 7 were seen in children under 10 years. Bladder stones used to be prevalent in western countries, with a high incidence in children, but are now rare except in old men with prostatic obstruction. This is attributed to improved nutrition, especially increased Protein/Carbohydrate ratio (Bailey and love, '59). Vitamin A deficiency may play a part by causing epithelial desquamation (Fain & Falise, 57).

In the Hill tracts it is generally believed that the problem lies in the quantity and quality of water drunk. People living on the tops of hills may have to carry all there water from the streams or ring wells in the valleys, and so drink little. It is said that the water has a high mineral (calcium) content, but I have no proof of this.

2) *Carcinoma of the Penis* is 15 times more common in the tribal than Bengali population. Circumcision correctly performed soon after birth confers almost total immunity, but later circumcision does not provide the same degree of protection (Bailey love, '59). In Bangladesh circumcision is only routinely performed by the Muslim population. Carcinoma is more common in tropical than temperate zones and chronic infection and phimosis may predispose. In our series of 28 cases, 14 were Bengalis:–

10 Hindu
2 Barua
2 Muslim

14 were tribal:–

8 Chakma
5 Marma
1 Tripura

The relative preponderance in tribal patients may be related to differences in personal hygiene. When water is scarce, the daily bath favoured by Bengalis is not possible.

3) *Ovarian Cysts* are four times more common in the tribal population. I have no idea of the reason for this.

4) *Peptic Ulcer* is almost unknown in the tribal poupulation, and strikingly common among the Bengalis. The number of operation (661, made up of 614 doudenal and 46 gastric ulcers) is a small proportion of all gastric patients seen. The only tribal patient in our series is an elderly Tripura leprosy patient, resident for many years at Chandraghona, whose duodenal ulcer was found during an operation for epigastric hernia. The possibility of tribal patients suffering in silence, and then dying when their peptic ulcer perforates cannot be entirely discounted. It is reasonable to assume that thedifference is a dietary one. The hillypeople eat plenty of uncooked fruits and vegetables, including many natural leaves and plants. Rice is hand milled, and cooked for less time. Salt and spices are used more sparingly, and tea and coffes drunk less. There are no prohibitions about meat, and any insect, animal, fish or bird which is edible is included in the diet.

5) *Carcinoma of the Stomach* was the most commonly occuring tumour in the world in 1975, but is now declining worldwide. There are racial differences in the incidence but genetic factors are less important than environmental ones, especially diet. Factors associated with carcinoma are dried salted fish, pickled foods, cured meats, salt, lack of refrigeration, and low gastric acid (Trunswell '85). These favour the conversion of nitrates in the stomach to nitrosamides and nitrosamines, which are carcinogenic. Fruit and vegetables rich in Vitamin C are protective. (Mur & Pavken '85).

Carcinoma is more than twice as common among Bengalis than the tribal population, whose diet is less salted, and contains abundant fresh fruit and vegetables.

6) *Buergers Disease* is a common problems among the Bengalis; in our part of Bangladesh, particularly those coming from Noakhali and Comilla districts. It is generally agreed to have a direct relation to smoking. The rarity among tribal people is probably hereditary, though there are differences in smoking habits. The hilly people use strong tobacco in cigars or clay pipes, and do not inhale the smoke. They also often chew tobacco, or use hokas where the smoke is bubbled through water.

7) *Other Surgical Problems* Gallstones, Appendicitis, Diabetes and Genital prolapse, all common among the Bengali population, are rare in tribals. There seems to be a high proportion of unusual tumours, especialy sarcoma in our series of tribal surgery. They include a highly malignant Haemangio–endothelioma of the forearm in a Khyang nurse, an enormous Rodent Ulcer destroying the eye of a Chakma lady, and a fibrosarcoma of the scalp. Epitheliomas are common, and sometimes related to the use of jungle medicine applied to leprosy patches. Our hospital acts as a main centre for the tribal people for cataract surgery (82 cases), Family Planning (326) Tubal ligations and Leprosy surgery (240 cases).

Conclusion

It is a privilege to serve these hill people, who are often unwilling to travel further from the Hill Tracts to get medical and surgical help. As communications improve and travel becomes easier, we hope we will be able to do more to relieve their often unnecessary suffering.

My thanks are due to Prof. Fazlul Karim, professor of Surgery, Chittagong Medical College, and Dr. S. M. Chowdhury, Medical Superintendent of Christian Hospital, Chandraghona, for encourageing me to prepare thepaper. Also to my wife for her patience during the preparation, and for typing the manuscript.

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THE TREATMENT OF TETANUS IN THE RURAL SETTING

Donn W. Ketcham

Key words :

Tetanus: Treatment in rural areas.

Summary :

Tetanus is one of the problem in Bangladesh like other developing countries. The treatment is often thought of as difficult, expensive and requiring sophisticated equipment. Memorial Christian Hospital, situated in the Cox's Bazar district, sees a great deal of tetanus In a simple more hospital with limited resources and thus must treat tetanus with a minimum of sophistication. In spite of this imposed simplicity, they are out salvaging full 38% of the neonatal tetanus patients and 81% of non–neo–natal patients. They have experimented with different medications route of administration and dosages. Interestingly, the very simplest of the protocols yields result quite as good as the more involved protocols.

Memorial Christian Hospital
Malumghat Cox's Bazar

Introduction

Tetanus is one of the scourges of developing countries where compulsary anti-tetanus innoculation programs have not yet been carried out. It is one of the most prominent causes of neo-natal deaths in this country.

Altogether to often there is a sense of hopelessness that overwhelms the physician caring for the tetanus patient. The disease is known to have a high mortality rate. We have all read of the work being done in more sophisticated medical centers in which tracheostomy, muscle relaxants, and respirator support are used in an attempt to save these infortunate patients. There may be a tendency on the part of the rural practitioner to assume that such sophistication is necessary for survival. Making this assumption, the rural practitioner feels that the case is hopeless, and he gives up anything other than a nominal effort to save the patient.

Memorial Christian Hospital is a forty bedded hospital situated 65 miles south of Chittagong on the road to Cox's Bazar. At this hospital we have been serving a mainly rural pupulation for nearly twenty years. Quite understandably, we have seen a great number of tetanus patients. Our aggregate series is now over 1000 cases. In the course of seeking better survival rates with the meager resources available to us, we have tried several different methods of treatment with varying degrees of success. My purpose in this paper is to present one method that works acceptably for us and can be pursued with an absolute minimum of equipment and with rather ordinary nursing care. I want to encourage you who find yourself in the rural setting to treat tetanus with a set plan and with the confidence that you will succeed much more often than you fail.

I shall describe the method we use and with which we have a very creditable survival rate.We divide our cases into two categoris, neo-nates in whom we have a survival rate of 41.4%, and non-neo-nates in whom our survival rate is 83.4%. These figures include all degrees of severity of tetanus. Unlike some tetanus series which exclude those who die within 24 hours of admission, we also include those in our statistics. There will be the occasional patient who sings out of the hospital against medical advice. These patients are all considered as deaths in our statistical analysis unless we have certain knowledge that they actually did survive the disease.

The only equipment needed is:

Hypodermic syringe and needles
A small nasogastric tube
An old intravenous set to hold feeding solutions. Need not be sterile.
Milk
Sugar
Salt
A supply of Diazepam injection and tablets
A supply of tetanus anti-toxin
A supply of penicillin for oral use
It is helpful to have a few instruments with which to debride wounds.

Other equipment, such as suction apparatus and manually operated breathing units are helpful, but not at all essential.

With this rather simple equipment, you can save the majority of tetanus patients.

Therapeutic Program

1. Tetanus anti–toxin (ATS). Give 10,000 units by the intramuscular route in neo–natal and other very young patients immediately upon admission. In the patients in whom intra–venous medication can be easily administered, give only 750 units by the intravenous route daily for three days, (1) There is considerable debate about the dosage and route of the anti–toxin. Over the years the dosage has gotten less and less until there are those who use no anti–toxin. Our program is predicated upon the fact that the intramuscular route gives a delayed response, the serum levels of anti–toxin not peaking until nearly 72 hours. Of course, immediately available circulating anti–toxin is desirable so as to bind the circulating toxins before they become tissue–bound. In our experience, the use of intravenous medications in the very small child often requires surgical placement of an intravenous cannula. We can find no statistical difference in either the neonates or the nonneonates between those who receive the larger intramuscular dose and those who receive the smaller multiple intravenous doses in our series. We persist in the use of the smalller intravenous dosage in those to whom it can easily be given partly because it is theoretically better and partly because it is less expensive. In fact, it seems to make no difference.

2. Penicillin is given by the oral route To simplify the dosage, we make the rather arbitrary decision to adjust dosage by age, thus avoiding the necessity of even weighing the patient. For those up to one year of age, we give 62.5 mg. at six hour intervals. For those ages 2 to 5 we give 125 mgm. For those 6 and over, we give 250 mgm. Penicillin seems to work well, though there are those who would dispute this choice. There is interesting evidence that Flagyl is effective against anaerobic organisms.

3. Acetaminophen is used appropriately to reduce fever.

4. Diazepam (Valium, Seduxen) is the main agent that controls the outcome of the case. We use 10 mgm. either intramuscularly or intravenously immediately upon admission in those who are having active spasms, regardless of age or weight. We then start regular doses of Diazepam to provide baseline sedation. We make an estimate of the patient's weight. Those weighing less than 50 pounds receive 10 mgm. orally every four hours, night and day. Those weighing more than 50 pounds receive 20 mgm. at four hour intervals. This is often enough to control spasms. In many instances, however, the patient continues to have intense spasms. In addition to the above doses of Diazepam we add further Diazepam so as to titrate the patient to the point of stopping the spasms. For this purpose we give an additional 10 mgm. every hour if need be.

These doses of Diazepam may appear rather heroic. In fact, we find them sometimes inadequate. There are two important facts about Diazepam that must be understood. First, it appears that there is a degree of built–in protection against oral Diazepam. It has been shown that the higher the serum level of Diazepam and its metabolites, the less absorption of further Diazepam from the gut takes place. Of course, we all know that it is possible to overdose a patient and to totally overwhelm this protective mechanism, but this homeostatic mechanism does seem to smooth out the otherwise expected fluctuations in serum

to smooth out the otherwise expected fluctuations in serum level. Second, and more important, it has been shown rather conclusively that when comparing the serum levels of Diazepam necessary to stop spasms in the very young child as opposed to older patients, the very young require serum levels that are six or seven times higher than the older patients.(2–3) This explains why we dare to divide the patients rather arbitrarily at the 50 pound level and why we dare to use the same dosage for all patients immediately upon arrival and also for the hourly titrations. I must admit that it appears rather frightening to use such dosages of Diazepam, but it has greatly increased the survival in tetanus not only in our series but in virtually all the the studies reported in the literature.

Feeding :

Most of the patients with tetanus will find it difficult or impossible to swallow. In these cases we insert a small bore nasogastric tube for feeding and medication purposes. All oral medications can be ground up and dissolved and given through the tube.

As a general rule, you can calculate that very small children (10 pounds or less) will require about 60 ml. of fluids per pounds of body weight per 24 hours just for maintenance. The adult will require something in the magnitude of 3000 ml. per 24 hours. You must add to these quantities further fluids to replace measurable loss and more yet to replace the extra–ordinary losses caused by intense muscle activity and fever in tetanus. Since these fluids are being given orally, there is little fear of overloading the vascular system. Thus, I would recommend giving the neo–nate 20 ml. per hour (total 480 ml per day) and the adult 150 ml. per hour (3600 ml per day). In order to get nutrients into the patient, we usually use a solution of milk diluted to halfstrength with a solution containing six tablespoons of sugar and 1/2 teaspoon of salt per liter. This allows the patient approximately 3/4 calory per ml. of solution. This will be slightly less than they may need, but it is not far from their actual needs. Further calories can be added by either adding extra milk powder or extra sugar. This may well cause diarrhoea in the child, however.

Other considerations :

We do not try to provide the quiet, dark atmosphere that is considered desirable. We are simply not able to provide this in our hospital. Our results are still quite acceptable.

An indwelling urinary catheter may be desirable.

We do not bath the patients or sponge them for fever. We find that bathing increases the intensity and frequency of the spasms.

It is noteworthy that in none of our patients have we used tracheostomy or paralysis with ventilation. For comparison, I refer you to a paper recently published in the Medical Journal of Australia. Newton–John reports a series of 106 patients in which a full 46% of his patients were tracheostomized, paralyzed and ventilated. With all that added effort and expense and danger (two of his patients died of tension pneumothorax) his survival rate is statistically no different than ours.

The patient should be searched carefully to discern the portal of entry of the tetanus organism. There will be about one–fourth of patients in whom one will be unable to find a portal of entry. There

will be another one-fourth in whom there is a perforated tympanic membrane with drainage. This is a portal of entry that rather surprises the Western doctor but is a common entry path for the organism. We note in passing that when this is the portal of entry, with judicious treatment, one may expect nearly 100% survival. I can only surmise that in the middle ear the organism traverses the rather delicate mucosal lining only to find no further place in which to burrow in search of an anaerobic environment.

Having searched for the portal of entry, careful but generous debridement should be carried out if at all possible. Do not hesitate to leave the wound entlirely open with no attempt at closure.

Tetanus Treatment Protocol
Tetanus Anti-toxin (ATS)

750 units given intra venously daily for three days or 10,000 units given intramuscularly.

Diazepam (Valium, Seduxin)

10 mgm. intra venously or intramuscularly immediately upon admission if there are intense spasms.

10 mgm. orally or by nasogastric tube every four hours if the patient is estimated to weight less than 50 pounds.

20 mgm. orally or by nasogastric tube every four hours if the patient is estimated to weigh more than 50 pounds.

10 mgm. orally or by nasogastric tube every hour as needed to stop spasms.

Penicillin

62.5 mgm. (1/2 tsp of syrup) every six hours for patients under one year of age.

125 mgm. (1 tsp of syrup) every six hours for patients ages 2 to 5.

250 mgm. (one tablet or capsule) every six hours for patients age 6 or more.

Acetaminophen every four hours as needed for temperature over 102 degrees F.

Insert naso-gastric tube for feedings.

Provide a solution of one-half milk and one half water with 6 tablespoons of sugar and 1/2 teaspoon of salt per liter of water for feeding. Give neo-nates 20 ml. per hour. Adults get 150 ml. per hour. Adjust dosages for others accordingly.

No bathing or sponging.

Do not allow mother to hold the child.

Foley catheter if needed.

As the patient starts to recover, the dosages of Diazepam will, of course, be tapered and finally discontinued.

Before the patient leaves the hospital, institute a program of innoculation with tetanus toxoid to prevent tetanus in the future. One attack of tetanus does NOT confer immunity.

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MILK AND PEPTIC ULCER THERAPY A REVIEW

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Key Words :
Milk : Peptic ulcer.

Summary :

Milk has long been a part of treatment for peptic ulcer disease in the belief that it suppresses gastic acid seeretion acid neutralizes gastric acid. This belief is not supported by scientific data. Studies have shown that although milk has short lasting buffering effect., it stimulates gastric acid secretionand this effect lasts for at least three hours. Frequent indigestion of milk may cause untoward effects due to lactose intoleance and many lead to milk-syndrome. Ingestion of large quantities of milk should not be recommended as treatment for peptic ulcer disease.

The popular belief is that milk suppresses gastric acid secretion and neutralizes gastric, but the various studies on milk do not support the view. Persons with peptic ulcer disease often ingest milk to reduce pain symptoms, because they and sometimes their Physicians equate reliëf of pain with, healing of peptic ulcer.

Milk formed the basis of Sippy ulcer diet (Sippy, 1915). Despite the fact that no scientific data exist to support strict adherence to a milk-cream or bland diet regimen in the treatment of peptic ulcer disease, variations of these therapies have persisted in both institutionalized and private practice settings (walsh, 1977).

Ippoliti and his associates (1976) reported that in patients with duodenal ulcer in intragastric instillation of 240 ml of whole, low fat,non-fat or low calcium milk significantly increased gastric acid secretion above basal level. Different fat content of the milk did not influence the secretory rate. The acid stimulatory effect of milk persisted for atleast 3 hours after ingestion. Bingle and Lennard Jones (1960) noted that milk had a transient buffering effect neutralizing gastric acid only for 20 minutes. Sixty minutes after milk ingestion the gastric PH had returned to basal level. Also Doll and associates (1966) reported that continuous intragastric milk drip failed to produce effective neutralization in ulcer patients. Recently, Paffenbarger, Wing and Hyde (1975) reported that college students who drank 1 to 4 glasses of milk daily were significantly less likely to develop ulcer in later life than

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non–drinkers of milk. This may be an, as yet, undescribed protective effect of milk on gastric mucosa or may reflect a decreased use of potentially ulcerogenic substances such as tobacco and coffee in daily milk drinkers.

Calcium is a very potent stimulant of gastrin and hence acid secretion (Lamers and van Tongeren, 1977. Trudeau and McGuigan, 1969). Milk contains plenty of Calcium — 118 mg% (Watt & Merrill, 1963). Therefore, milk is a powerful stimulant of acid secretion.

There are also potential risks associated with the use of large amounts of milk in the management of ulcer patients. Chronic use of large amounts of high fat milk may add undesirable calories to the diet. Lactose intolerance, manifested by abdominal bloating, gaseousness and diarrhoea may be precipitated by milk use in lactose dificient subjects. Frequent ingestion of whole milk in the treatment of peptic ulcer disease has been reported to be associated with an accelerated mortality from atherosclerotic heart disease (sandweiss, 1961). In addition, alternating hourly ingestion of milk and calcium has been shown to produce a rise in serum calcium and creatinine concentration, which may lead to the development of the Milk – Alkali syndrome (McMillan and Freeman, 1965).

Because milk has only a transient buffering effect followed by a sustained rise in acid secretion, there is reason to question its frequent ingestion in the therapy of peptic ulcer disease. But one cannot deny the therapeutic benefits of learned behaviour. Many patients actually benefit from what they believe will benefit them. Milk ingestion reduces the pain of peptic ulcer in many instances and, therefore, might be exerting some benefit. Patients who have grown used to and who choose this form of therapy cannot be viewed too harshly, nor can Physician colleagues who continue to recommend it. One can only remind them of the available facts.

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PROBLEMS OF HOSPITAL PLANNING AND DESIGN IN BANGLADESH

Shaheda Rahman

Key Words :

Planning Principles of hospital design.

Summary

To-day there are well-established methodology for programming, planning and designing of health care facilities in a more rational, deliberate and systemic manner. In Bangladesh the existing structure and techniques followed are out-dated, uncordinated and inappropiate, which has lead to obvious pit-falls. This paper attempts to analyse the existing situation, problems and conditions responsible for it and discusses some of the priorities in this field.

Introduction :

Health care facilities are essentially shelters in which health care functions are performed. Nevertheless the efficiency of design of these shelters influences the performance standards of medical and nursing care alongwith other services beyond technical and functional considerations. Moreover decisions concerning the design of health building and running of the health service building system have both immediate and long term social and economic consequences (Delral 1976). Health facilities i.e. building installation, equipment together with maintenance programmes constitute an essential element of any health care infra-structure. From the point of view of investment planning physical facilities clearly represent a capital item (Klecz-Kowaki 1985). Of the whole range of health facilities hospitals are most expensive in terms of capital and operational cost. These costs increase as

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the hospitals become more sophisticated. For this reason it is necessary to plan hospitals with more rationality considering them as effective instruments of health service. Hospitals although indespensible are merely parts of a whole — the apex of the health care delivery system. Hospitals for the matter all health buildings are results of overall process of health service planning(Browo 1977). Therefore, it is first necessary to identify the role each health facility is expected to play in the country's health care delivery system before its physical and functional requirements can be identified and quantified.

Planning and design principles of health facilities

At the planning and design level of an individual facility it can be said that the process consists of series of rationally design and systematically carried out stages which share much of the scientific method as applied to research. These stages as generally followed can be stipulated into a number of functional phases. In U.K. (Bravo 1977) they are classified as

1. Briefing
—Programme / Project — Proforma
2. Design
—Plan, elevation, sections, structure
3. Production
—Working Drawings, Specification, costestimate, bill of quantity, tender document etc.
4. Construction
—Building
5. Commissioning
—Bringing hospital into use
6. Evaluation
—Feed-back

When organised sequentially in practice these stages are undertaken not in a single movement but rather in an unending spiral of incremental efforts towards improvement. To evolve a planning process that is rational, delibarate and systemic the process perforce, undergoes changes and adjustments. A substantial part of the total effort has to be devoted to the briefing or functional programming stage. This is because the information provided by the brief regarding users requirements, planning principles, work-load, staffing pattern, environmental factors, schedule of accomodation etc. forms the very basis of architectural design solution that is to be developed (Cany 1978).

Systems followed in Bangladesh

The principles of planning and design of health care facilities that are followed in Bangladesh are uncoordinated. The briefing or the functional programming phase which is considered by far the most important stage by health facility planners could be said to be non-existent. In Bangladesh, like many devloping countries hospitals are still being designed as one-off project with frozen type plan based on schedule of accomodation without any comprehension of the principles of hospital planning and design or understanding the elements which make a hospital. Operational policies which define the task of the architect by stating in detail the functional content,

philosophy of services, work–load, planning principles, staffing, functional relationship both at macro and micro–level, environmental factors, equipments, performance standards etc. are virtually unknown. Even if an apology of operational policies are ever provided they are too sketchy to be of any use to the architect.

In absence of the task definition by the client two systems are generally found in practice. If a private consulting firm is engaged by the client i.e. the usergroup then the entire planning and design process is based on a series of discussion between the architect and a client representative usually a doctor or the hospital administrator. In Bangladesh the hospital administrator is usually a doctor without clinical duties but having no specific training in hospital administration. Presently in Bangladesh there are eight Medical College Hospitals and these represent the country's highest level of hospitals. None of these hospitals have a trained hospital administrator nor are there any known programme in the country to train them either at home or abroad. The client representative is thus ill equipped to furnish the necessary information sought by the professionals. The architects, more often than not, having no previous experience of hospital building design fails to communicate his need to the client in a common frame of reference. Another difficulty arising out of this system is that many important factors are overlooked and if these omissions are not timely identified they seriously cripple the hospital system.

When the responsibility of planning and designing of hospitals are carried out by the public authority briefing and design are seperate process performed by seperate bodies namely the Ministry of Health and Public Works Department. Links between the two responsible interrupted by the transfer of personnel. The design solutions are based on the schedule of accomodation provided by the Ministry of Health with minimum, if any, forethought being given to the ways the hospital will function when put into use. Although hospitals involve many different specialists within a single organization and the hospital being a product of the effort of many professionals there is no collaboration between the different disciplinary groups at any stage of programming and design. This system has lead hospitals being considered as a collection of independent design components viz structural, mechanical, electrical etc. each being assigned to the corresponding specialist not necessarily of any experience in hospital planning and design. More simply put the concept of multi–disciplinary planning team which is well established today in the health planning and design system is yet unknown in Bangladesh.

Since all hospital projects are concieved as individuals projects the architects and planners, are always seeking an unique solution to an original problem. More simply the health facility planners and designers are always concerned with a specific building plan. This practice has lead to waste of valuable information and scarce skill gained from a hospital project. Since there is no hospital development programme in the country the experience gained from one project cannot be disseminated to others.

As a consequence of these

inappropiate methodology the hospitals designed are irrational and unresponsive to the community's need. They also fail to play the role expected of them in the national health strategy. Moreover these hospitals tend to become a financial burden as regard to operation, maintenance, and staffing to the point of becoming an embarassment.

The absence of training for necessary expertise absence of research into planning, design and management of hospitals, and lack of systemic evaluation of facilities compounded by apathy and inactivity of the responsible bodies leaves little scope of improvement of the present situation.

Deficiencies of the system:

The present state of affairs in Bangladesh stem from the existing uncordinated structures and techniques followed compounded by deficiencies of basic nature in the related field. Some of these deficiencies can be summerised as follows,

a. Lack of pre-requisites and tools of planning :

WHO experts defines regulation, norms, standards, machinary for planning, training for planning, training for management, and mechanism for community involvement as prerequisites for planning. The tools for planning has been identified by the same as the planning team, information requirements,

b. Lack of expertise function

Presently there is a great paucity of necessary expertise in the field of health facility planning and design at all levels. Architects currently entrusted with the country's health building programmes both in the private and public sector lack of necessary skill, experience, and of special education. These professionals cope with a wide range of other building categories and are often not able to build up sufficient experience in the planning, design and construction of health buildings. Moreover the absence of a comprehensive hospital development programme disrupts the continuity of skill from one project to another.

c. Lack of technical literature :

Unavailibility of relevant technical literature seriously handicaps the health facility planners and designers in Bangladesh. A vast bulk of written material in this discipline has been produced in developed countries and although no doubt it is possible to extract some useful information from it, the hard-pressed architects are not likely to lend time and oppurtunity to do so. Even if ventured there is always the danger of such material being misapplied as often had been the case in many developing countries with no lesser disaster (Klecz-Kowaki 1975). Recentlly information related to health planning are being made available for developing countries by WHO and other international bodies. These too call for modification and adaptation to local needs.

d. Lack of Research :

The importance of research in this field can hardly be emphasised. Health facility system of any country is moulded by its health service system, morbidity pattern, resource base, technological level, climate, socio-economic development and socio-cultural factors. All these variables differ from country to country and even from region to region within the same country. Thus health facilities require a very local

solution. The acute deficiency of resources in Bangladesh demands research into tools, methodology of planning and design, management techniques best suited to the country's need. Unfortunately efforts are yet to be made in this direction.

Conclusion :

To sum up, presently in Bangladesh there is a great vacum in the health facility planning and design field. In the face of the deficiences discussed, what are the priorities ? There is an urgent needed data-base for norms, standards and legislation which not only offer a 'bench-mark' to work from but are also means of quality control. A systematic inventory of the existing facilities environmental data indispensible for development of functional programmes. Necessary expertise has to be developed with the objective of forming multi-disciplinary planning teams. Problems of planning, programming, building, staffing and operating health care facilites are complex and cannot be solved without considering economics, man-power policy, town and country planning, means of coummunication and other factors pertaining to socio-economic field. This necessitates the setting up of an inter-ministrial committee for health planning, programming, designing and evaluation. To develop a dynamic progressive and scientific system it is important that research is made into planning, programming, design and management problems. Given the country's resource constraints and magnitude of problem the task at hand even if be difficult is not an impossible one. The situation now faced in Bangladesh is not uncommon in other developing countries. There is parallel to be found in those of developed countries in the post-war days. Many developing countries with international and intersectoral colloboration has been able to surmount their difficulites and establish a rational systematic approach to planning and design of health care facilities.

On account of the far-reaching consequences the country's health urgent that the problems in this field be dealt with due seriousness and necessary measures be taken to prevent the situation from going out of hand. In Bangladesh resources are scarce. To make most of them, limited resources must be streched imaginatively and allocated judiciously. There is little margin for error when limited resources are streched.

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FUNCTIONAL PROGRAMMING A NECESSITY IN HOSPITAL PLANNING

Shaheda Rahman

Key Words :

Functional Programming; Roles and responsibilities of the client and architect.

Summary :

Traditionally in Bangladesh hospitals are designed in direct response to an immediate need with minimal concern for organising and scheduling. This has resulted in hospital buildings which defeats its own purpose. There is a need for proper programming of hospital projects if efficient hospitals are to be built. This also calls for better communication and understanding between the client and professionals of the design construct team. The paper aims at creating this awareness amongst the responsible people.

Introduction :

Presently in Bangladesh hospitals are being designed in direct response to an immediate need. If planning is done it is to assemble the necessary funding and talents to achieve the set target — 'a physical facility'. As a consequence the newly purpose built hospitals are often not able to satisfy the users and regrettably enough the architects are being held responsible for the design deficiencies. While the architects must share the responsibility as the professional expert but an inappropiate design solution more often results because the hospital projects generally are not well thought out and are not sufficiently delimited against the architects function. This often is because of failure on the part of the client to understand the role of the architect and clients own responsiblity.

The intention of this paper is to emphasise the need for proper programming of hospital projects and discuss some of the outline aspects of a functional programme. It also attmepts to analyse the role and responsibilities of the client and the architect in a general

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context of hospital planning and design. For the purpose of this paper it has been assumed that the need for a new development project has been identified and its objective has been set.

Need For Programming:

The importance of proper programming of hospital projects can be hardly over emphasised. Hospitals are complex projects even if no greater technologies are involved. ~~Generally putting the building together technologies are involved.~~ Generally putting the building together is a more complicated process.

A hospital involves many different specialists within a single organization and their requirements may overlap and work together or they appear to be in direct oposition (Baynes 1971). There are many contentions in hospital planning and design which do not offer easy decisions. The project itself has become more complex by the fact that the hospital is under the influence of factors of inconstant magnitude. For instance, one has to cope with several generations of medico-technical procedures and equipments in one and the same building. To-day hospital can no longer be viewed as an isolated project but as a response to a health care system. In the recent past the role and objective of hospitals have been constantly changing.

To keep pace with the constantly changing scene is one of the greatest challenge now faced by hospital planners all own the world. In Bangladesh this task of projecting the future while the present is still unknown appears to be virtually an insurmountable problem. Thus while we are set with the most difficult task of reaching the most important and far-reaching decisions when the information at our disposal is very low the only rational approach to the problem is to be more thorough and methodical in programming and planning our hospitals.

Functional programming :

If we accept that a hospital building is a shell to house a definite objective then it is first necessary to define the objective (Goldfunch 1977). On the basis of objective planning, which defines need, nature and scope of services required, the means to achieve the set objectives are planned and programmed. Traditionally the client communicates this programme to the designers in a written document called a brief or a 'functional programme' and which in Bangladesh is commonly known as 'P-Form' or 'Project-Proforma'.

a) Intent of Functional Programming :

The purpose of brief or 'functional programme' is to enable the client to communicate the scope and extent of the project to the architect. As the information provided in the brief forms the very basis of design it must be completely comprehensive and anything less is baffling for the Architect (Baunes 1971) The functional programme must clearly stipulate the role and nature of the hospital, the type and size of the hospital, the use of premises, the scope and range of functions to be provided and their interrelationship, the environmental and technical considerations, a time schedule and a cost target (Mass. 1977).

b) Some aspects of Functional Programming :

The brief or functional programme

to put in another way is "a statement of intent to create an organisation and house it in a building"(Moss 1977). These statement are generally made in form of written policies describing how the building should operate. The operational policies, as they are generally known, are of two types. One relates to the main hospitals functions at the macro-level and which are called whole hospital operation policies.

The other relates to individual departments at micro-level and are called the departmental operation policies.

"The purpose of the operational policies for a particular project is to determine the movement of people and things to and within the hospital to define scope of functions and express in operational terms such concepts as intergration of teaching and patient care, internal flexibility and growth. This establishes reliable criteria for determining the layout of the building and means of communication. (Blanford 1975).

Operational policies serve, therefore, to assist the architect in putting together the various parts of the building so that they function in a way which is convinient and satisfactory to the client. As it has been pointed out in my earlier paper that planning does not follow a straight path leading from a specified need to a scheme for fullfilling it. It is rather a spiral route which repeatedly cover the same ground. If this cyclical view of planning is accepted it is likely the early statement of operational policies will have to be modified as the practical realities unfold during the design process.

The functional programme would generally contain operational policies explaining how the building is to be used, what is to be provided and how it could be achieved. In addition it should also contain functional planning and design data derived from the analysis of need from which workloads can be calculated. This includes the enumeration of beds by categories, out-patient and emergency attendances, number of staffs and the like. A functional programme may include a schedule of accomodation if possible and if the programme is prepared by a multidisciplinary team. If not simply a statement of functional content is more desirable.

c) who should prepare the functional programme ?

Since preparation programme calls for intimate knowledge of the hospital as a system and involves technical and professional or design decisions its desired that such a task is undertaken by a multidisciplinary group (Moss 1977). The Multi-disciplinary planning team would consists of doctors, nurses, hospital administrators, architects, engineers, quantity surveyors, other professionals of the design construction team and hospital organisation as deemed necessary. The purpose of multidisciplinary grouping of planning team is firstly, to ensure that the programme is a comprehensive statement of intent and secondly that as work proceeds there is a planning team member to answer questions on any aspect of the project. When they come together, as they must frequently do, the planning team and the design team merge into one project team.

Table-1 *Index of the 'P-Form' of Development Scheme of IPGMR*

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
INSTITUTE OF POSTGRADUATE MEDICINE AND RESEARCH
DHAKA.
INDEX

Source :'P-Form' of the Development Scheme of IPGMR

A case study : New development scheme of IPGMR :

In the light of the foregoing discussions on the intent and content of a functional programme it would be a logical step to validate the introductory statements. Table-I shows the index of a 'P-Form' used for the development scheme of IPGMR. It was prepared by the Health Ministry in collaboration with the IPGMR authority. As the existing IPGMR hospital building was originally a hotel the institution was functioning at great cost and inconvenience. To alleviate the present difficulties a decision was taken to build a new nursing unit and a operating theatre seute in the same premise. The designed hospital unit is a ten-story building with a total bed capacity of 583 beds. Since its inception in 1972 approximately two-third of the

project has been completed. The completed section has already been commisioned and functioning since December 1984. The general reaction of the users to this newly purpose–built hospital unit is not favourable and the reaction is legitimate.

However, accepting the new hospital building's limitations and the responsibility of the professional experts let us now examine the brief provided to the architects. The index of the P–Form in Table–I shows that the information provided to the designers is anything but comprehensive. An examination of the 'P–Form' (the original document) further reveals that not only the information is incomplete but what is provided is also very sketchy and claims little merit or relevance as a basis for design. For example, while a somewhat eloborate list of instruments has been given the 'P–Form' contains no information regarding their premises, characteristics or use. Similarly, while the number of staff by category is given the staffing pattern is not explained. The 'P–Form' does not offer any information regarding the functional systems and their inter–relationships. There is no description of the operational, administrative and technical procedures to be followed, nor there is a programme of execution. The only some–what relevant information the 'P–Form' offers is a schedule of accomodation; but the manner in which this information is presented is not acceptable. For example the 'P–Form' reads,

"This system of a client drawing up a list of rooms he thinks he needs and then asking the architect to provide them is as if a patient were to tell his doctor what treatment to prescribe" (ADAUS & CAMMOCK 1970.)

The present mode of communicating information between the client and the architect is undesirable and even dangerous. Normally once the professional expert has been selected because of absence of a proper brief or programme the architect has to retrieve the necessary information from the client through a series of discussion and restructure the development programme. One handicap of this practice is if the architect has no previous experience in hospital design, as often is the case, it would not be possible for him to identify the problems or see the problems in all their breadths. He could not then make pertinent queries or relevant

Table II *Intensive care Unit*

1. Number of beds	10 (a) 150	1000 sft
2. Nurses Duty room	1 × 150	150 sft
3. Medical store & equipment	2 × 150	300 sft
4. Doctors Duty Room	1 × 150	150 sft
Source : op. cit		(incomplete)

investigation to build up the having other professional responsibilites is not likely to lend time to make the necessary studies on behalf of the client as he would then have to do it at the cost of his own time. The harm of such a practice is not only the programme will be deficient and cannot lead to a satisfactory result but it also leaves scope for misinterpretation of facts and figures, and leads to idiosyncrasies both on the part of the client and the architect. The situation is further worsened as the discussions and decisions taken in these discussions are not recorded. This results in the overlapping of planning and design activities on one side and in omission of important facts on the other. It causes not only valuable loss of time, money and energy but results in irrevocable design deficiencies which adversely affect the efficiency of the so designed hospital. The IPGMR project could again serve well as an example. In designing the operating departmernt at one point the architect and the surgeons of the institution together worked out a probable solution. However, as the final solution did not incorporate these suggestions an enquiry was made to ascertain the reason for it. It was found the suggested plan which was the product of many hours of painstaking work of the architect and the surgeons simply could not be traced. Consequently the Operating Department which have been finally designed and built has to their team Operating theaters strewn all over the new building in different floors at different ends and in different combinations one, two, three and four.

The need for proper programming and documentation should refuse no further emphases, as presently (and likely to be so in the future) the hospitals are being planned and designed by persons not trained or experienced for the work and that the building process is disrupted by frequent transfer of personnel. In the IPGMR project, for example, between 1972 and 1985 there had been seven Project Directors, excluding the present one, all belonging to different speciallies and none of special training or experience in hospital design. Their involvement varied from few months to three years. It will not be a fallacy to presume that similiar discrepancies occured on the professional side.

How does one overcome the existing problems ? First of all by better briefing of the architect. That is the programme should be completely comprehensive and de–limit the architect's function. It must be ensured that policy, management and design decisions would be made in a logical sequence at appropriate levels and at the time required. It is also necessary that all discussions and decisions are recorded and well documented. Proper documentation not only offers a means of controlling the entire design process but also protects the interest of both the client and the profesionals.

Roles and responsibilities of the client and the architects :

If a hospital development programme is to be carried out efficiently a planning organisation, decision making and information system is required which meets the requirement of the client, the planners and designers. The client wants a building which satisfies the criteria he lays down in terms of quality, time, cost and function. The planners and designers need precise information from the client and decisions which are informed,

binding in a logical sequence and accurately recorded as a basis for action.

The establishment of an organisation and system for making and communicating decision involves definition of roles and responsibilities. It is sometimes assumed that these are self-evident and when in fact they are not.

The first task in a hospital project is to describe the conceptional framework in which decisions should be (Blandford 1975). In hospital projects, like all development projects, there are two groups of decision makers one is the client and the other is the professional, and there are three kinds of decisions to be made viz.

a) Executive decisions which are made to put into effect ideas and proposals.
b) Planning decisions which identify and solve organization problems, and
c) Design decisions which identify and solve physical, spatial and structural organization and problems.

The value of distinguishing between the kind of decision to be made is that it assists in determining the various levels of decision — making in the structure. It is, however, necessary to recognise the interdependency of decisions and that it is not always possible to define decisions a priori in terms of who makes them. It is more practical to describe what decisions have to be made and the processes by which they should be made.

Traditionally, never the less, executive decisions are made by the client, while planning decisions in a hospital project should be made by a multidisciplinary planning team. The design decisions obviously lies with the architects and other professionals of the design — construct team subject to approval of the client.

A lot of confusion arises due to client's ignorance to the nature or mode of work of the architect. The Institute of Architects Bangladesh (IAB) stipulates five distinct phases of basic architectural services.

Fig. I : *The Basic Architectural services*

1. Schematic Design Phase	Design Phase
2. Design development phase.	
3. Construction Document phase	Production Phase
4. Bindding or Negotiation phase. Tendering	
5. Construction phase–Administration of the Constructions Contract	Construction Phase

In the schematic design phase on an understanding of the given programme the architect would submit design proposals to the client suggesting a possible built form with a probable functional organization, service and circulation system accompanied with a statement of probable cost. More simply the architect submits the preliminary drawings with a probable cost estimation.

In the next phase, with necessary modification and alterations of the proposal to meet the client's requirements the architect prepares the development drawings and other documents to fix and describe the size and character of the project in explicit terms as to the functional organization, structural, mechanical and electrical

systems, materials and other such essentials as may be appropiate.

When development plans reach a complete form with detail design and documentation of the whole system the construction decuments are prepared which include working drawings, specifications, tender documents etc. This production phase is followed by the construction of the project. It is necessary to note that the described phases although distinct are not independant or separate, and in reality they should stagger and overlap. It is also felt necessary to add that they client must be aware that all major design decisions must be reached by the design development phase. No major change in design is possible beyond this stage without affecting the efficiency and rationality of design of the original solution. It is imperative that the envisaged objectives are not altered during implementation or when the hospital is put into operation.

In hospital projects the role and responsibility of the architects are somewhat expanded. In planning and design of hospital it is held inception, begining in the briefing and planning process and ending with the commissioning of the completed hospital. (Op. cit).

Conclusion :

Finally, it must be stressed that proper programming is an absolute necessity in hospital projects, and effort spent in preparation of a programme determine the quality and success of the final outcome. Functional programming calls for special skill and insight and is for too important to be left to amateurs. (Op. Cit.). The skill required could be developed from accumulated knowledge and experience of those who had been involved with hospital planning and design for a considerable period. Alternatively the skill or expertise could be developed with special training in health facility planning and design courses. In view of the existing vacuum in expertise of this field and the urgencies of the local need it would be advisable to develop 'a core multidisciplionary team' in the planning cell of Health Ministry. Such a team could then act on behalf of the health authorities for all new developmet projects.

The information on the subject in this paper is by no means comprehensive. It is not possible to deal with such a complex issue in one or two papers. It can only touch the problem on the surface. The paper has been written with the hope to create an awareness among the decision–makers that to build efficient hospitals more time and energy should be devoted to the programming of the hospital projects and that the assistance of the experts in this field is a must. For a country like Bangladesh, with extremely limited resources, there is little scope for error or misadventure.

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SURGICAL SERVICE TO RURAL PEOPLE IN DEVELOPING COUNTRIES IN THE CONTEXT TO NEPAL

D. N. Gongal

Key Words :

Surgery: Rural Setting: Nepal.

Summary :

Nepal, a small landlocked country and also one of the poorest countries of the 3rd world. Since it is not possible to provide health services prevention and curative through the medical doctors, and alternate plan to cover the rural areas with paramedical health workers has been developed and made operative. At present surgical services rendered in Nepal is limited. She leads are available even in the central & zonal hospitals are very few. So it is evident the surgical services to rural people at present is negligible.

Surgical service to rural people is an important aspect of health service. It is a topic of much importance, which is not without controversy, especially in a developing country like ours where basic health needs have not reached the rural people, we are trying to implement a sophisticated aspect of health service i.e. surgical service. What follows is some facts, and figures of where we stand in Nepal at the present time and some suggestions for future course of action.

Nepal, a small landlocked country between two giants, is endowed with much natural beauty. Mt. Everest, the highest peak in the world, lies here. Rich as it may be in its natural beauty, it is equally poor economically. The per capita income is about 120 US dollars. As in other developing countries, poverty, illiteracy, population explosion, and inherent cultural taboos have been hindrance in the overall development of the country as well as in the development of its health services.

The top ranking diseases are malnutrition, infectious diseases e.g.

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gastro-enteritis, T.B., leprosy, and parasitic diseases. Nonetheless, surgical conditions are also prevalent. As one plods on along the journey of life, injuries and accidents do occur. Therefore, traumatic conditions and its sequelae rank the highest in the surgical conditions. This is followed by infections, neoplasias etc.

First, let us define surgical service. It is the service in which the science and art of healing injuries and diseases is done by operation.

As noted above, the surgical service delivery to the 90% of people become important. For this, manpower, equipment and physical facilities are necessary. Surgical service is a very important part of health service and is inseperable part of health care delivery.

At present surgical services rendered in Nepal is limited, of which majority is limited to Bir Hospital in Kathmandu and some zonal hospitals. The work done at the other institutes are negligible. The beds available even in the central and zonal hospitals are very few and much difficulty is being experience to accomodate the increasing number of patients. So it is evident that the surgical service to rural people at the present time is very negligible.

Table I

total area	147181 sq km. of which only 1/3 is aerable
population	16.6 million
rural population	90%
literacy rate	23.3%
crude birth rate	42 per 1000
crude death rate	16 per 1000
infant mortality rate	111 per 1000 live birth
average life span	53 for male 50 for female

Aim : to reduce the mortality and morbidity due to surgical conditions.

Objectives :

1. to manage the surgical patients with care and skill.
2. to prevent further complications.
3. to refer the case if required, to proper centre.

To deliver surgical service to the rural people has been problem and this problem has many facets. From the country profile, we can see a few facts.

Table II- *Health Institute where surgical service is expected*

	nos.
Central Hospital at Kathmandu	5
Zonal hospitals 150/100/50 beds	9
District hospitals 25/15 beds	44
Health posts	770

Table–III

Total beds	3522
Bed population ration	1:4265
Doctor population ration	1:20780
Nurse population ration	1:39528
Sr. AHW population ration	1:18223
AHW population ration	1:10630
ANM population ratio	1:9641

Table–IV

Estimatimated specialist in Nepal		in Kathmandu
medicine	20	over 50%
surgery	20	over 50%
paediatrics	14	over 50%
paediatric surgeon	2	100%
neurosurgeon	20	100%
orthopaedic surgeon	6	over 75%
obs/gynaecologists	20	over 50%
ENT	6	100%
anaesthetists	10	100%
cardiology	1	100%
hepatic biliary	1	100%
nephrology	1	100%
gastro–enterology	3	75%
psychiatry	5	100%
thoracic surgeon	1	100%

The above only make clearer the inadequacy of surgical service to rural people. It also reflects the unsound distribution of manpower, beds and in fact the whole surgical service. A total reorganisation right from the peripheral level to the central level is called for, with stress being led upon the peripheral district and zonal hospitals. The problems that we are having to face are:

1. manpower
2. equipment and logistic supply
3. follow up and supervision

One health post is alloted for the population of 5000 in the hills and 15,000 in the terai. This is managed by health assistants or Sr. AHW, AHW and ANM. The health assistants qualified from Institute of Medicine have good theoretical knowledge but seems to be lacking in practical exposure. At the present moment they try to avoid being posted in the hills which may be due to lack of transportation, communication and adequate equipments.

The various district and zonal hospitals do not have enough doctors with surgical skill, anaesthetists, and nurses with training in surgical management and operation theatre techniques.

Equipment and logistic supply, ancillary service remain great constraints. Besides these, the hilly terrain, transportation and communication problems have been great obstacles in the delivery of surgical service.

Plan of action :

1. In general, a policy will have to be made as how much surgical services should be delivered at different level of health institute right from the peripheral health posts to central referral hospital. The central hospital should have all the subspecialites so that the need to refer the patients to India or other countries will not be necessary, something which majority of the population cannot afford.
2. The distribution of manpower according to skill, type of health institute, work load basis etc. will have to be organised.
   The following suggestions may be helpful in overcoming the manpower problem:

(a) Let us take right from the level of the health assistants. Before they are posted to health posts, the fresh graduates from the institute should be exposed to some practice in the casualty department in some central or zonal hospitals for 3 months, and 3 months in district hospitals. They should be made responsible for equipments in the health posts which should be supplied according to the services that are to be rendered there as determined in the general policy.

(b) Medical officer posted in health centres and district hospitals are expected to carry out some surgical activities, but the posting of fresh graduates makes this impossible. They should be permitted to acquire some surgical experience for at least one year, including some experience in anaesthesia and casualty work. During this period he should be given a chance to gain confidence in performing surgical operations.

(c) Para-medical staff and nurses should be trained in the management of surgical patients and operation theatre techniques. Here again the policy of freshing posting fresh graduates should be stopped.

(d) At present another great constraint is the unavailablity of anaesthetists. This has kept the hands of enthusiastic surgeons tied. To solve this problem, we ought to get as many fellowships for training of medical officers in anaesthesia so that they can acquire at least a diploma. Priorities will have to be given for training in anaesthesia. Some other training may also have to be given which they can utilise for private practice as long as practice compensation or anaesthesia allowance are not given. Medical officers woking in surgery will have to be exposed to anaesthesia so that they can work even in the absence of anaesthetists by helping each other. They will have to learn the modern type safe anaesthesia as well as open ether and EMO technique which are more prevalent and will have to be popularised in the peripheral level where the establishment of sophisticated equipments is not probable at the present time.

Equipment and logistic supplies:

Minimum equipments according to the services that are to be rendered at different level of health institutes should be supplied. A committee consisting of senior person in surgery, indent and procurement, nursing service and administration should asses the utilisation of the equipment. A person for maintainence should be made available.

Supervision and follow up :

This activity remains the backbone of successful delivery of surgical service. This will serve to supervise the work, encourage the field workers and asses the maintenance and utilisation of equipments. This will have to be carried out by the above mentioned committee.

Surgical Camps :

Surgical camps could be a good way to render surgical service to rural people.

However, the past experience has shown it to be an expensive affair as surgery requires a great deal of pre–operative preparation and post–op care. It also requires a clean sterile environment. Nonetheless, this idea cannot be given up. With proper planning much can be achieved by this. It is will also serve to train doctors and health assistants. Hence, at present surgical camps should be training oriented and should be run in district and zonal hospitals where surgical service is not rendered.

What is the future ?

Aim :

The aim would render surgical service by skilled persons.

Problem :

To prepare manpower. Now most of the doors for training the manpower in other countries are getting closed. Yet we are much obliged to friendly countries in particular India, Bangladesh and Britain for accepting our doctors for training in different specialities. This will not be enough to meet the demand.

Solution :

It is high time that we start our own training programme. As we started the training programme of generalist and anaesthitists, we are also planning to start diploma course in other specialities too. I am pleased to inform you that we are in correspondence with RCS and RCOG in Britain to start a centre for primary exam at Kathmandu for fellowship and membership. Hopefully we will start the centre in 1986. This will give us a moral boost to start PG training.

Suggestions :

There are many agencies involved in health care. Delivery system, but most of them are concentrated in the community health. I feel that the curative and preventive aspects have to go glove in hand, so that the total health care can be delivered. The TC DC programme under WHO could contribute something to surgical care delivery and training. Similarly SARC also contribute in this aspect.

Conclusion

Surgical service to the rural people is an very vital part of health care delivery. Which at the present moment is very low in both quantity and quality. Stress will have to be laid to the peripheral health institutes like health posts, district and zonal hospitals of periphery. Manpower must be trained, skilled manpower posted to these areas, necessary equipments supplied.

A central hospital should have all the subspecialities so that the patients referred from periphery will get good care. A means of transportation like air ambulance would be a boon to the otherwise dying patients.

Annex Level of Surgical Care

I. Health posts :

i. wound suturing
ii. wound dressing
iii. abscess drainage
iv. catheterisation for retention of urine
v. splinting of fractures and dislocations
vi. application of posterior slab of plaster of Paris

vii. arrest of haemorrhage by
a. applying artery forceps and ligating the bleeder
b. packing the wound
c application of tourniquet.
viii Recognition and initial management of shock and burns
ix. management of af minor burns.
x. episiotomy
xi. to give ordinary soap water enemas for relief of constipation and cases of obstruction
xii. tapping the hydrocele and ascites
xiii. to cut open the veins for intravenous fluid administration.

II. 15 Bedded Hospitals

1. Emergency surgery
i. management of bleeding wounds
ii retention of urine —
a) catheterisation
b) suprapubic cystostomy
iii. tracheostomy
iv. amputation of limbs
v. obstructed hernias
vi. waterseal drainage of chest
vii. management of fractures and dislocation
a) closed reduction
b) plaster of Paris
viii. debridement and setting of compound fractures
ix. appendicectomy
x. Caeserian section
xi. dilatation and evacuation
xii. forceps application for delivery

Routine surgery

i. abscess drainage
ii. wound suturing
iii. wound dressing
iv. manipulation of fractures and dislocations and POP application and splintting, traction application (skin and skeletal)
v. removal of cysts
vi. hydrocele and hernia operation
vii. amputation of limbs
viii. skin grafting
ix. circumcision and paraphimosis
x. suprapubic cystostomy
xi. vasectomy, minilap, vaginal tubal ligation
xii. cleft lip repair
xiii. appedicectomy
xiv. dilatation and curettage
xv. forceps delivery and episiotomy
xvi. haemorrheidectomy and piles injections
xvii. urethral dilatation
xviii. other minor operations.

III. 25 Bedded Hospitals

i. all surgery recommended for the 15 bedded hospitals
ii. emergency lapratomies
iii. compound fractures
iv. Caeserian sections
v. open reduction and fixations
vi. lapratomies for ovarian cysts
vii. gastrojejunostomy or pyloroplasty with vagotomies (if the surgeon is interested)
viii. plastic repairs

IV. 50. Bedded Hospitals

At this level nearly 20 beds are alloted to surgery. Hence considerable surgical service can be delivered. Activities include —
i. all general surgical emergencies or routine operations
ii. urological, orthopeadic operations
iii. traumatic neuro-surgical, traumatic chest surgical operations

iv. if the surgeon are interested in any such subspecialities, all, efforts should be made to supply the equipments for job satisfaction.

v. endoscopies for removal of foreign bodies from pharynx, oesophagus and bronchus.

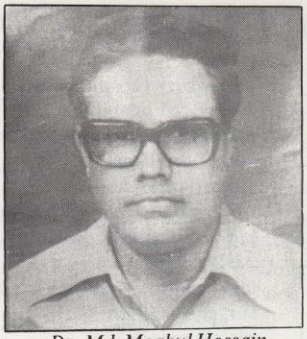
V. 100 Bedded Hospitals

In the 100 bedded hospitals nearly 36–40 beds are available for surgery. This hospital should serve as a referral hospital to the zones around the area. This hsopital should deliver quality surgical services. Depending upon the available manpower subspecialities could be incorporated, but more stress in orthopaedic will be justifiable.

VI. 150 Bedded Hospitals

As 36–40 beds are made available in 100 bedded hospitals, more beds will be available in 150 beds. Assuring this, orthopedic and paediatric surgery service delivery seems to be very reasonable.

OBITUARY



Dr. Md. Moqbul Hossain

MBBS, FCPS (Surgery)

Dr. Moqbul Hossain, Asstt. Prof. of Surgery, IPGM&R, died suddenly on 4th May, 1986, aged 53.

He was born in Nazirpur of Pirozpur district. After passing Matriculation and I. Sc examinations in 1950 and 1952 respectively, he graduated from Dhaka Medical College in 1959. He became the fellow of Bangladesh College of Physicians and Surgeons in 1976 through examination.

After graduation he started his career as a private practitioner at Pirozpur and quickly established his reputation.

In 1965 he joined Government service as an anaesthetist at DMCH. But he was keenly interested to be a surgeon. After then he worked as clinical assistant, Registrar under late Professor Moniruzzaman, eminent Surgeon of Bangladesh. He was also the resident surgeon in DMCH. After having the fellowship he was consultant in the casualty dept. in DMCH and Asstt. Prof. of surgery in sher–e–Bangla Medical College. At the time of death he was in the same past in IPGM&R, Dhaka. He was interested in urology.

Dr. Moqbul Hossain brought enthusiasm and friendliness to his work. He was not remote, he had the ability to listen quietly and courteously and to respond effectively and logically.

He was a devoted family man and is survived by his old mother, wife, four sons and two daughters,

May Allah rest him in peace.

COLLEGE NEWS

WORKSHOP

A Workshop on the evaluation of the present system of examination of the College was held on 19th September, 1985. The following eminent Medical Teachers participated in the Workshop:-

1. Dr. S.A. Ashraf
2. Dr. M.A.Quaderi
3. Dr. T.A. Chowdhury
4. Dr. A.T. Siddique
5. Dr. M.N. Huda
6. Dr. A.Sobhan
7. Dr. M.R. Khan
8. Brig. Anis Waiz
9. Dr. M.A. Mannan
10. Dr. M.R. Chowdhury
11. Dr. A.S.M. Fazlul Karim
12. Dr. SIMG Mannan
13. Dr. M.H. Mullick
14. Dr. A. Mottalib
15. Dr. M.A. Jalil
16. Brig. K.M. Siraj Jinnat
17. Dr. Nazmun Nahar
18. Dr. M. Khalilur Rahman
19. Dr. S.N. Samad Chowdhury
20. Dr. A.H.M. Ahsanullah
21. Dr. S.A.Shakur
22. Dr. M.A. Majed
23. Dr. (Maj. Gen. Retd.) A.R. Khan
24. Dr. M.N. Amin
25. Dr. Waliullah
26. Dr. Abu Ahmed Chowdhury
28. Dr. Mirza M. Islam
29. Dr. M.A. Matin
30. Dr. S.G.M. Chowdhury
31. Dr. Syed Ershad Ali
32. Dr. A.K.M. Nazimuddowla Chow

On the basis of the recommendation of this workshop changes have been made in the method of evaluation during the examination held in January,1986.

The assessment in each part of the examinations was done as follows :-

17 - Excellent	14 – Marginal
16 – Good	13 – Recoverable
15 – Pass	12 & below – Unsatisfactory

Continuing Medical Education Programme :

December 1, 1985

Mr. Peter C. Bewes, FRCS, Consultant General Surgeon, The Birmingham Accident Hospital and Hony. Senior Lecturer in Orthopaedics Birmingham University, U.K. delivered a lecture on "Modern Trends in Management of trauma".

December 2, 1985

Mr. Peter C. Bewes also deliver a lecture on "Delayed Method of Closure in preventing Wound Sepsis".

February 13, 1985

Mr. W.P. Small, Visiting Consultant Surgeon, Western General Hospital Edinburgh, U.K. delivered a lecture on "Trends in Peptic Ulcer diseases".

Examination News

Results of FCPS Part I/Part II and MCPS Examination held in Jan. '86

201 candidates appeared in FCPS Part I Examination in different subjects. Only 31 candidates came out successful. Subject–wise results are as follows.

Subject	Number appeared	Number passed
Medicine	44	13
Surgery	54	10
Obst. & Gynaecology	32	1
Paediatrics	29	2
Ophthalmology	16	3
Psychiatry	8	1
ENTD	7	0
Radiology	2	0
Radoiotherapy	1	0
Anaesthesiology	6	1
Clinical Pathology	2	0

49 candidates appeared in FCPS Part II Examination in different subjects. List of Candidates who satisfied the examiners are as follows:–

Roll No.	Name	Name of Medical College of Graduation	Subject
2.	Dr. (Maj.) Md. Golam Rabbani	MMC (Mymensingh)	Medicine
4.	Dr. Salimur Rahman	DMC (Dhaka)	Medicine
5.	Dr. Md. Emran Bin Yunus	CMC (Chittagong)	Medicine
9.	Dr. Mamunoor Ur Rashid Safdar	CMC "	Medicine
12.	Dr. Md. Rabiul Hasan	SSMC (Sir Salimullah)	Medicine
16.	Dr. Prodyot Kumar Bhattacharyya	SMC (Sylhet)	Medicine
42.	Dr. Mohammed Hanif	CMC (Chittagong)	Paediatrics
43.	Dr. Md. Hazrat Ali	CMC "	Ophthalmology
46.	Dr. Saroj Kumar Dass	SMC (Sylhet)	Psychiatry
47.	Dr. (Maj.) Md. Nurul Azim	DMC (Dhaka).	Psychiatry

44 candidates appeared in MCPS Examination in different subjects. List of candidates who satisfied the Examiners are as follows:–

Roll No.	Name	Name of Medical College of Graduation	Subject
2.	Dr. (Maj.) Md. Abdul Kader Khan	Rang. M.C. (Rangpur).	Medicine
8.	Dr. Rustom Ali	DMC (Dhaka).	Medicine
23.	Dr. Md. Abdur Rashid	DMC "	Paediatrics
25.	Dr. Md. Shamsul Haque	Raj. M.C. (Rajshahi)	Paediatrics
32.	Dr. (Sqn. Ldr) M. Jahangir Hussain	Raj. M. C. "	ENTD
33.	Dr. Shamsuddin Ahmed	Raj. M. C. "	ENTD

35.	Dr. Chandra Prakash Shrivastava	R.G. Kar Medical College, Calcutta.	Anaesthesiology
36.	Dr. Sheikh Shibli Nomani	SMC (Sylhet)	Anaesthesiology
39.	Dr. (Lt. Col.) Md. Yunus	DMC (Dhaka).	Radiology
43.	Dr. Shazadi Nilufar	SMC (Sylhet)	Cl.Pathoogy
44.	Dr. Zahid Mahmud	SMC (Sylhet)	Cl. Pathology

Orientation Course

November, 1985

A 3(three) week's orientation course for FCPS Part II examination in Surgery was held from 30.11.1985 to 19.12.1985. The Registration fee for the said course was Tk. 1,000/– only.

A 2(two) week's orientation course for FCPS Part II in Medicine was held from 01.12.1985 to 14.12.1985. The Registration fee for the said course was Tk. 500/– only.

Fellowship without Examination:

Dr. S.I.M. Golam Mannan, M.B., Ph.D., Retd. Prof. of Anatomy, 7/A, Green Square, Dhanmondi, Dhaka–5 and Dr. Abul Quasim Muhammad Nurul Huq, Prof. of Medicine, Dhaka Medical College were admitted as Fellows (without examination) in the year 1985.

Annual General Meeting & Contributory Lunch.

The 13th Annual General meeting of the BCPS was held in 28th February, 1986. Honorary Secretary Prof. T.A. Chowdhury presented his report on the activities of the College during the past year. Dr. Ruhul Amin, Treasurer of the College, presented the Annual Budget for 1986–87 which was accepted by the Annual General Meeting.

A Contributory Lunch was held after the General Meeting in the premises of the Fellows Club.

Opening of the Fellows Club

The construction work of the Fellows Club was completed on 15.02.1986 and the Opening Ceremony of the Club was held just after the 13th Annual General Meeting. Prof. M.A. Matin immediate past President of the College and presently Minister for Education formally opened the club as Chief Guest.

The main purpose of constructing the Fellows Club is to provide a facility for holding large social functions such as Weddding Ceremonies, Reception etc. by the Fellows or their relations on payment of usual rent. This will augment the income of the College and at the same time provide a convenient and protected area for the Fellows for such occassions. Provisionally the rent is fixed at Tk. 2,000/– per day. Security deposit (Refundable) is Tk. 1,000/–. The electricity and water charges will be borne by the party concerned.

Fellows for life member

Those who have paid Taka 5000/– in one instalment become the life member of BCPS. They are:–

1. Dr. Nurul Islam
2. Dr. Md. Nurul Islam
3. Dr. M. A. Matin
4. Dr. Sultana Jahan
5. Dr. M. A. Majed
6. Dr. Golam Rasul
7. Dr. K. M. Nazrul Islam