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CONTENTS

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4. Coran AG. The hyperalimentation of infants. Biol Neonat (in press).

Complete Book :

5. Gallagher JR, Medical care of the Adolescent (ed. 2). New York, Appleton, 1966, p. 208-216.

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JOURNAL OF BANGLADESH COLLEGE OF PHYSICIANS AND SURGEONS

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CONTENTS

PAP TEST FOR SCREENING OF CERVICAL INTRAEPITHELIAL NEOPLASIA

Naseem Rashid

Key words : *Pap smear ; Cervical intraepithelial Neoplasia.*

Summary : *A study of "Pap Test for screening of Cervical Intraepithelial Neoplasia (CIN)" consisting of preliminary cytological examination of 100 smears is presented. The smears were obtained from women attending the outpatients department of Institute of Past-Graduate Medicine & Research (IPGMR) and Dhaka Medical College Hospital (DMCH). Most were random samples but some had gynaecologic complaints also and were referred by gynaecologists. Out of the 100 smears, 25 were found cytologically abnormal, 8 of which were confirmed histologically. Of the 25 abnormal smears, 3 had squamous meta plasia, 1 mild dysplasia, 3 moderate dysplasia, 2 carcinoma-in-situ and 5 invasive carcinoma. The histologic and cytologic picture of 7 abnormal smears coincided ; 1 cytologically interpreted carcinoma-in-situ had normal histological findings. Identification of the risk factors for the various cervical abnormalities was made. All the dysplasia were found in the younger age group ; multiparity and age at first intercourse were significant factors. The risk factors for carcinoma-in-situ and invasive carcinoma resembled dysplastic lesions except for the age group.*

Introduction : In all developed and in some developing countries screening programme for CIN has become a routine procedure. Dr. George Papanicolaou in 1943 published his classical paper "The monograph of diagnosis of uterine cancer by vaginal smear" and from then various workers have studied the different aspects of CIN by this technique.

A conference on cervical cancer screening (NIH Consesus Statement 1980) was held at the National Institutes of Health, U.K. on 23-25 July 1980, aimed at examining and reviewing the scientific basis for screening in cases of CIN. Three prerequisites for making the screening suitable, effective and scientifically popular were cited. Firstly, the disease should have serious consequences. Secondly, the disease must have a treatment which when applied to the in-situ stage is most effective than when treatment is applied after symptoms have lead to a diagnosis. This is because screening detected cases have a 100% cure rate whereas once the invasive stage sets in, cure becomes uncertain. Thirdly, the detectable pre-clinical phase should have a high prevalence to justify the expence of the screening programme. Taking all these into consideration, evidence from screening programmes suggest the incidence of invasive squamous cell carcinoma cervix is declining and the in-situ lesions are being detected with increasing frequency.

In Bangladesh, implementation of such programmes, as internationally recommended should be emphasized and can be included within Family Planning and Population Control Projects. The overall benifit for the community outweighs the initial difficulties to be faced for such a scheme. In British Columbia (Boyes 1981) screening programme started operating since 1949. Initially

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most of the cervical cytology was diagnostic with gynaecological complaints, but subsequently awareness of the public through the Canadian Cancer Society has made annual Pap smear a routine procedure.

Methods : A total of 100 cervical smears were studied, most were random samples from women attending P. G. Hospital (IPGMR) and Dhaka Medical College Hospital out patients departments during the period March 1983 to September 1983. Some had gynaecologic camplaints, and few were undergoing treatment in P. G. Hospital with suspected lesions. 75% of the women were above the age of 30 years. For each smear a record was made about age of the patient, age at marriage, sexual behaviour, parity, contraceptive usage and whether she had previous smears taken.

Cervical biopsy was done in 8 patients.

The following technique was used for the specimen collection and preservation. The fast smears were obtained using wooden Ayre's type cervical scraper (Malmgren 1978), the rationale being that a sample is obtained on a small area of the slide with the advantage that the vaginal pool sample prevents some of the drying effects seen in the cervical scrape specimen alone. Two smears were taken from each.

Prompt fixation of the smeared slides were made in Coplin jars containing 95% ethyl alcohol and some smears were sprayed with aerosol fixative ; 10% formalin was used for preservation of biopsy specimens.

Cytology of the smears were carried out in the Department of Pathology, IPGMR and interpreted as negative, positive and atypical pap smears. CIN classification was not used. Staining was done by Papanicolaous method. Cytopathology reports were delivered in about a week after collection.

Results and Observations : The study population comprised 100 cervical cytologic smears, mostly random but some with gynaecologic complaints.

Out of the 100 smears obtained, 25 were cytologically abnormal and 8 of the abnormal smears were confirmed histologically. Of the abnormal smears, 7 were positive smears.

TABLE 1.

Cytological detection of normal and abnormal smears in 100 cases.

Normal smears.	Abnormal smears.
Total No. 75 (75%)	Total No. 25 (25%)

The abnormal smears included not only carcinomas but also squomous metaplasia, mild, moderate and severe dysplasias, trichomonas vaginalis infection and atrophic vaginitis.

The 7 positive smears consisted of 5 infiltrating squamous carcinoma and 2 carcinoma in-situ. One negative smears could not be correlated with the clinical findings of frank carcinoma and also could not be further confirmed histologically because of failure to trace the patient subsequently.

TABLE 2.

Correlation of clinical findings and abnormal smears in 100 cases.

Total No.	Clinicil findings	Cervical lesions	No.
	Frank carcinoma	Infiltrating squamous cell carcinoma cervix.	5
25	Un-healthy cervix	Moderate dysplasia	1
(25%)	Apparent healthy	Carcinoma in-situ	2
	Cervix.	Mild dysplasia	1
		Moderate dysplasia	2
	Cerveical erosion	Squamous metaplasia	1
	Chronic cervicitis	Squamous metaplasia	2
		Trichomanas vaginalis	6
		Others	5

TABLE 3.

Correlation of clinical findings and positive smears in 100 cases.

Total No.	Positive smears.	Clinical findings.	No. of cases.
Positive smears 7 (7%)	Infiltrating squamous cell carcinoma.	Frank carcinoma (4 stage IIA+1 stage IB)	5
	Carcinoma in-situ.	Apparent healthy cervix.	2

From these tables it is evident that 3 cases of dysplasia and 2 of carcinoma in-situ were present in apparently healthy cervices and only a routine cervical scrape can bring about the diagnosis in such cases.

TABLE 4.

Correlation of cytological findings with histology.

Cytology	Histopathology	Specimen	No. of cases.
Moderate dysplasia.	Moderate dysplasia.	Cervical biopsy.	1
Carcinoma in-situ.	Carcinoma in-situ	Hysterectomy	1
Carcinoma in-situ.	No malignancy	Hysterectomy	1
Invasive carcinoma.	Infiltrating squamous cell carcinoma.	Hysterectomy	5

The results of "Pap Test for Screening of CIN" in this study showed histological correlation of 7 abnormal smear.

TABLE 5.

Age distribution in CIN & Invasive carcinoma in 100 cases.

(Age in years)

Cervical lesion	25-29	30-34	35-44	45 & above
Mild dysplasia	1	...	...	...
Moderate dysplasia.	3	...	...	...
Carcinoma in-situ	...	...	1	1
Invasive carcinoma	...	...	1	4

TABLE 6.

Parity distribution in CIN and Invasive carcinoma in 100 cases.

Cervical lesion	Nil	1-5	5 and above.
Mild dysplasia	---	---	1
Moderate dysplasia	---	1	2
Carcinoma in-situ	...	...	2
Invasive carcinoma	...	...	5

The high prevalence in this study is because both cases of carcinoma in-situ were diagnosed in patients who were referred to the outpatients department with gynaecologic problems. All the 5 invasive carcinomas were under observation at P. G. Hospital for suspected malignancy. But all the smears showing dysplasia were random samples taken from patients without any gynaecologic complaints.

Discussion : Cervical cancer is one ef the commonest cancers of women. Next to carcinoma of the breast (Dewhurst 1933) it has been the most frequent malignancy, changing incidences have been observed in uterine cancer. Earlier in the century carcinoma cervix was seen eight times as frequently as carcinoma endometrium. Now there is a considerable change in the ratio, so that many reports give a 3 to 2 ratio in favour of the cervix while in U. K. the incidence is nearly equal. However the data on the prevalence and incidence of cervical malignancy in Bangladesh is lacking as no such study has ever been undertaken.

The high incidence of CIN in this study Population does not represent the true incidence, which will become available only when routine screening programme for cervical carcinoma is established in this country. Both the cases of in-situ carcinoma and invasive carcinoma were symptomatic ones, where the smears were taken as diagnostic procedure. But all the dysplastic lesion were diagnosed in random samples. The current general histological model of cervical cancer : mild dysplasia⇋moderate dysplasia⇋sever dysplasia⇋carcinoma in-situ⇋invasive carcinoma represents the progression of a disease process. Richart and Borrow

(1969) carried out an extensive follow up studies with dysplasia and concluded the progression times as follows :

1. Mild dysplasia to carcinoma in-situ—86 months.
2. Moderate dysplasia to carcinoma in-situ—48 months.
3. Severe dysplasia to carcinoma in-situ—12 months.

They concluded that 80% of all dysplasias will progress to carcinoma in-situ within 10 years unless treated. About 61% of the moderate dysplasia regressed while 9% progressed to carcinoma in-situ in series of Sander et al, 1978 (quoted from Hoffken et al, 1981). Approximately 60% (Boyes et al, 1962) to 70% (Kottmeier et al, 1961 quoted from Hoffken et al, 1981) of all caarcinoma in-situ are believed to develop into invasive carcinomas, the period being 5-15 years (Soost et al, 1974 quoted from Hoffken et al, 1981) and 13-20 years (Boyes et al, 1962) respectively. So the detection of dysplastic lesion in the early stages is very important.

In the present study, most of the CIN (83%) was detected in apparent healthy cervices, the only complain being excessive vaginal discharge. The average age for dysplasia was 27·2 years ; average age at first intercourse was 14·7 years ; and the average parity was 6·3. For carcinoma in-situ the average age was 48·5 years ; parity 6·5 ; and age at first intercourse was 14 years. The pattern of invasive cancers were similar to in-situ lesions.

N. A. J. E. Rahman (1972) showed the average age of invasive cancer was 48·37 ; average age at marriage 13·1 which were quite similar to those of the present study. Harris and colleagues (Harris et al, 1980) reported that the mean age in years for mild dysplasia to carcinoma in-situ ranged from 34·4 to 34·6 years. The relative risk among women having sexual life before 17 years of age, compared to those starting at 20 years or after was about 2-3 times at risk of having CIN. Albetra study (1969-71) (Starrevels et al, 1981) showed increased risk of in-situ carcinoma in parous women aged less than 50 years. So attempts were made in the present study to co-relate some of the important risk factors.

The screening project for cervical cancer in British Columbia (Boyes et al, '81) has been associated with a drop in incidence of clinical squamous carcinoma in women over the age of 20, by about 75%, and a drop in mortality of close to 66%. From some of the established patterns of smears, (Boyes, '81) a high risk group was defined as those women starting active sexual life before the age of 18 years or having multiple sexal partners ; low risk group included women who never had active sexual life ; while the rest the female population were at average risk. Recommedation were made for frequency of screening by smear. For the high risk, the smear should be taken annually until the age of 60 years ; for the average risk group screening should start at the onset of sexual activity and repeated once a year later, then every 3 years to age 35 and every 5 years till age 60 ; there is no need for screening those at low risk. Women using birth control pills and IUCDS should have annual pap smear done. Most of the women in Bangladesh fall in the high risk group as regards age at marriage and usage of contraception and so such a screening has an important place.

In Alabama (Windsor et al, '81) cervical cancer rate is one of the higest in the United States with a rate of in-situ to invasive among nonwhites 1·2/1·0 as compared to 2·0/1·0 in whites and increasing utilization of cancer detection programme is being carried out there.

Margaret and colleagues (Wolfendale et al, '83) in a retrospective study (1965-79) showed an increased pick up rate in unscreened (5·8 to 12·9/1000 smears) than screened (0·9 to 3·6/1000 smears) women. The view that cervical cancer is discovered more in unscreened than the screened population, the value of screening in the study of carcinoma in-situ is firmly established.

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Islam, Professor and Head of the Department of Pathology, Institute of post-Graduate Medicine and Research, for the preparation and interpretation of the cervical smears,

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A REVIEW OF THE THYROID DISEASES IN BANGLADESH
—analysis of personal series of 91 cases.

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A. S. Md Rezaul Matin[2]

Key words : *Thyroid Diseases ; Thyroid Diseases review.*

Summary : *Over the last eight years of hospital practice, 91 patients were treated surgically for thyroid diseases. Mean age was 32·617±S.D. 9·706 years. Female overwhelmed the male (Female 76, male 15). Biopsy was done in all the cases, 54·94% cases had nodular goitre and 9·89% cases were reported to be carcinoma and most of which were papillary type. During hospital stay, 3 patients developed signs and symptoms of hypoparathyroidism and in only one of them had clinical tetany.*

As peroperative histopathological diagnosis by frozen section is not widely available in our country, and people are not aware of importance of follow-up—"near total thyroidectomy" should be considered as the first line of treatment for suspected thyroid malignancy.

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Diffuse enlargement or localised swelling of thyroid gland with or without functional derangement is not uncommon in our clinical practice. When otherwise asymptomatic, most of the patients of this series reported for cosmetic reason, and were mostly female. Few patients were cancer phobeic and came to exclude the possibility of cancer.

For the last few years, great advances have been made in the field of nuclear medicine, histopathological diagnosis and these have contributed much to the management of the thyroid diseases. But very little of these are available to us. This is particularly true with those working in the periphery, even in the medical college hospitals, and as such, they have to depend almost entirely on clinical findings which are often deceptive and inconclusive.

Material & Methods : 91 cases were treated surgically over the last 8 years. All of them were admitted either in Dhaka Medical College Hospital or in P. G. Hospital. Persons with physiological goitres and early parenchymatous goitres are not included in this series as they have been treated successfully with Thyroxine.

Each patient was clinically examined and evaluated by Radio-Iodine uptake and scanning. In cases of diffuse goitres, the uptake reading was taken for 24, 48 and 72 hours (in some cases).

Pre-operative preparation : As a pre-operative preparation, in addition to routine haemogram, urine and stool examination, X-Ray of the chest, E.C.G. was done in patients with suspected thyrotoxicosis and in patients above 50 years of age. Necessary measures were taken to correct the abnormalities found through clinical and other investigations.

Overt thyrotoxic patients were treated with anti-thyroid drugs (Neomercazole and β-blocker), rest till they become euthyroid. Only β-blocker was used in patients with mild thyrotoxicosis. Lugol's Iodine was used for about 10 days prior to operation, when Neomercazole was withdrawn but β-blocker if used already is continued through the operation to 3 to 5 days after operation and then it was discontinued.

Findings :

Incidence—Sex : Female 75, Male 16

(Fig. 1.) Age : 32·617 ± SD 9·706 years.

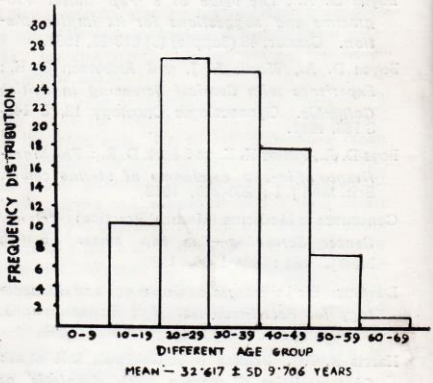

Fig. 1.

Clinical findings and Clinical Diagnosis : In 16 patients, Thyroid was hugely enlarged (About 500 gms) and in 21 patients it was between 300 to 500 gms. 6 patients had dyspnoea during sleep i.e. on lying posture and one patient had recent change in voice.

TABLE No. I.

(Clinical diagnosis and findings.)

Colloid Goitre		8	8·79%
Nodular Goitre		29	31·87%
Simple	... 26		
Toxic	... 3		
Nodule		45	49·45%
Simple	... 43		
Toxic	... 2		
Carcinoma		9	9·89%
Lymph node metastasis (Cervical).	1		
Evidence of Superior-Venacaval Obstruction.	1		

Total number of cases=91.

Evidence of thyrotoxicosis was judged by persistent tachycardia, dyspnoea, loss of weight, mental agitation, sleeplessness and presence of warm moist hands. 5 cases were diagnosed as thyrotoxic (F : M=4 : 1) and only one of them had mild exophthalmos. In all these cases, findings were obvious and the diagnosis was straight forward. There were 3 more patients with persistent tachycardia but other findings including Iodine uptake was equivocal. T_3 & T_4 level could not be estimated. 4 patients had recent change in size (1 carcinoma, 3 had haemorrhage found later on). 2 patients presented with cutaneous sinus. It developed spontaneously in 1 patient and in the other patient, it developed following incision over the swelling out side the hospital. Thyroid gland was hard, nodular and was fiixed with trachea in both the cases. (Table No. I.)

Operative findings : Thyroid gland was exposed by classical collar incision and adequate skin flap mobilisation. By small incision only biopsy was taken in 1 case. Of 45 cases clinically diagnosed to have solitary nodule, proved to be multinodular in 19 (of those cases). 2 cases had thoracic extension. Arteria thyroidea ima was present in 1 instance. The gland was small hard nodular in 1 patients and only biopsy was taken. Different types of operation performed are shown in Table No. II. In no cases recurrent laryngeal nerve was dissected out for safety.

TABLE No. II.

(Operations performed.)

Operations	No. of cases.
Subtotal Thyroidectomy	26
Near total Thyroidectomy	6
Near total Thyroidectomy with block dissection of Neck.	1
Hemi-Thyroidectomy	33
Excision of Nodule	22
Incision Biopsy	3

In all cases histopathological examination was done. Drainage was used in every patients and it was brought out through a separate stab wound. Routine broad spectrum antibiotic was used in all but 8 patients.

Per-operative & Post-operative Complications : These are shown in Table No. III. In 2 cases re-exploration was necessary for primary haemorrhage.

TABLE No. III.

(Post-operative complication.)

Complication	No. of cases.
Primary Haemorrhage	2
Acute Dyspnoea	1
Temporary Hoarseness	9
Seroma	6
Hematoma	2
Hypo-parathyroidism	3

In both the cases bleeding was from the thyroid parenchyma and during operation haemostasis was made by electrocoagulation. Running catgut stitches was used to stop the bleeding. Tracheostomy was needed in 1 case for acute respiratory distress in a young patient with a "Huge" goitre. Tracheostomy tube was removed on the 6th post-operative day. Seroma was the commonest wound complication. Collections were aspirated. None of the patients developed wound infection.

There was no mortality. Temporary hoarseness developed in 9 patients and it lasted for 15 days to 60 days. Hypoparathyroidism developed in 3 patients who underwent surgery for malignancy and was treated with Vitamin D and Calcium tablets. Permanent unilateral recurrent laryngeal nerve palsy occured in single instance.

Only one patient clinically suspected to be adenoma, and treated by lobectomy only, was found to be invasive follicular carcinoma after histopathological examination.

Table No. IV shows the histopathological diagnosis.

TABLE No. IV.

(Histopathological diagnosis.)

Diagnosis	No. of cases.	Percentage.
Colloid Goitre	6	6·59
Nodular Goitre	50	54·94
Solitary Nodule	25	27 47
Simple cyst ... 20		
Aderoma ... 5		
Follicular ... 4		
Papiliary ... 1		
Carcinoma	9	9 89
Papiliary ... 7		
Follicular ... 1		
Anaplastic ... 1		
Non-specific Thyroiditis	1	1·09

Follow-up : Follow-up was possible only in 32 cases (36·36%) for 3 months only. Out of the 7 patients with malignancy, 3 patients are being regularly checkedup. One patient with papillo-follicular carcinoma, who underwent near total thyroidectomy (Rt. upper pole was left), had local recurrence after 1 year. The patient went to United Kingdom for further advice. The other 2 patients are still doing well. Follow-up period for those two patients are 6 months and 1 & 1/2 year.

Discussion : It is not uncommon that clinically diagnosed solitary nodule is found to be multi-nodular on exploration and further more after histopathological examination. In this series, clinically diagnosed solitary nodule was found to be as multinodular in 21 cases. The overall incidence of multinodular goitre is 54·94% and is comparable with others (Rains, A.J.H. and Ritchie H D. 1979 ; Taylor. S & Psarras A 1967). Diffuse parenchymatous goitre does not usually cause obstructive symptoms, but nodular goitre may enlarge to cause obstruction to hinder venous return, dyspnoea or even dysphagia (Taylor S 1979). Our patient with superior venacaval obstruction, had multinodular goitre. Indication for surgery in diffuse parenchymatous goitre is mainly cosmetic, and in nodular goitre is pressure symptoms, suspected malignancy, development of toxic features and for cosmetic reason.

Carcinoma thyroid is not so common. Incidence varies from series to series. It causes about 6 deaths per anum per million (Taylor S, 1979). In other instance it is believed to be responsible for 0·5% less than 1% (Hargreaveaves, 1981, Robbins et al, 1981) of all cancer death. Thyroid malignancy is of infinitely variable malignant potential and is of variable biological behaviour. Different factors influencing the biological character of thyroid malignancy are 1. tumor morphology, 2. age of onset, 3. extent of the disease, 4. presence of initiating factor, and 5. treatment given (Block 1978, Buckwalter et al, 1975).

Radiation of the neck in early life may predispose to papillary carcinoma and in 25% of those patients has high TSH level (Roudebuch 1979, Schimpff et al, 1980). Prolonged TSH stimulation may occur in the inhabitants of Iodine deficient area, thyroid malignancy in them are predominantly follicular (Wahner et al, 1966). Thyroid carcinomas has also been described in families and in identical twins, suggesting the role of genetic factor in it's causation (Clerk 1979). No predisposing factors could be detected in any of our patients.

Problem of thyroid nodule is to exclude malignancy in an asymptomatic patient. Short history, recent and rapid increase in size, signs and symptoms of local infiltration, hard or firm nodule raise the suspicion of malignancy. Radio-Iodine scan determines the functional state of the nodule or nodules. Warm nodule is usually an adenoma but very rarely, a well differentiated carcinoma will take the Isotope. Selenium scan is helpful in distinguishing benign from the malignant cold nodule, bnt it is not conclusive—many well differentiated carcinomas are of such low cellular activity that they do not take Selenium (Rains & Ritchie 1979).

Fluorescent scanning using a collimated source of radiation is now being used to differentiate benign from the malignant nodule (Patton et al,

1979). A solid cold nodule is a suspect for malignancy. Needle biopsy has been used with a success rate of about 96% without any false positive result (Goldfrab et al, 1982). But it's use is forbidden by many authors in the diagnosis of a suspected malignancy (Rains & Ritchie 1979) especially in patients with a history of irradiation in the neck (Clerk 1979).

Once the diagnosis of carcinoma is established either by biopsy of the gland itself or lymph node, some author proceed for total thyroidectomy (Hargreaveaves 1981) but others perform this proceedure in selected patients (Taylor 1979 and Bartolo et al, 1983). Total thyroidectomy is preferred for two reasons—it removes the primary lesion as well as normal tissue which will not compete for radio-iodine when used for follow-up or for the treatment at a later date.

It is said that hilly areas of Mymensingh, some part of Rajshahi, Rangpur and Dinajpur of our country are endemic, but no attempt has yet been made to detect the incidence or prevalance of Goitre and to determine the aetiology in these areas. The way to prevent simple goitre is to provide enough Iodine in diet especially during feotal life and early childhood (Taylor 1979). When thyroxine is given for few years in patients with parenchymatous goitre, it usually shrinks (Talor 1979). Some patient may need the hormone for the rest of life.

In nodular goitre, prescribing thyroxine only is not helpful as the gland changes are irreversible. After surgery for simple goitre, thyroxine should be prescribed for whole life and it's dose should be adjusted (1-2 mgm.), so that TSH remain at normal level without producing clinical manifestations of hyperthyroidism. Even after this replacement, there may be obvious recurrence 7-8 years after the operation (Taylor 1979). Our patient does not come back after surgery. This does not exclude the possibility of recurrence, but it may be such that they live with the ailment or they may report to other surgeons.

Regarding the treatment of carcinoma thyroid, surgery is the most effective way to deal with the problem, but thyroxine, radiotherapy all have their place. There is still controversy over the extent of surgery. Bartolo et al 1983 suggested lobectomy with the excision of isthmus and pyramidal lobe as on acceptable first line of treatment. They convert lobectomy to a total thyroidectomy with post-operative Radio-Iodine in patients with aggressive follicular carcinoma with vascular invasion. They did not accept, that a 4% recurrence rate after lobectomy justifies "whole sale" total thyroidectomy and the incidence of recurrence can even be reduced by thyroid feeding (Bartolo et al, 1983 ; Crile 1980). T_3 is preferred to T_4 in the post-operative patient by some author (Hargreaveaves 1981), because the treatment can stopped and within 3 weeks another Isotope scan can be carried out and if there is any local recurrence or there is lymph node taking Iodine, radio-Iodine treatment can be given earlier.

In our country, patients do not come after surgery for regular follow-up and facilities for postoperative histopathological diagnosis is not adequate, at operation, if the surgeon is aware that he is dealing with a case of carcinoma, the operation should be completed by a total thyroidectomy. In case of a nodule, treated by lobectomy or hemithyroidectomy and subsequent histopathological reports appear to be malignant, there is perhaps no need to go back for total thyroidectomy and the patient should be carefully followed-up. Local recurrences if occur, should be dealt by completing total thyroidectomy. Risk of injuring recurrent laryngeal nerve and parathyroid gland is less in such cases as in this side the anatomy is not distorted by previous exploration.

Of all the modalities available for the treatment of autonomous thyroid nodule, surgery is the best. It achieves a rapid permanent cure of thyrotoxicosis with a few incidence of hypothyroidism (Brook 1982). All of our cases with toxic nodule were treated by surgical excision, but there is so far no hypothyroidism.

Lastly, it should be remembered that "Scanning, needle biopsy and ultrasound may increase or decrease the suspicion of malignancy, but there is only one of certain diagnostic procedure and

that is excisional biopsy''. Hence after surgery, the specimen should be submitted for histopathological examination, because effective early treatment for thyroid carcinoma may give a good life expectancy.

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ARRHYTHMIAS AFTER ACUTE MYOCARDIAL INFARCTION
—Follow-up of 157 patients in C. C. U. of Gotenborgh University Hospital, Sweden.

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Key words : *Arrhythmias—Acute myocardial infarction.*

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Summary : *157 patients admitted in the C.C.U. of a well equiped University Hospital of Gotenborg, Sweden were studied. Out of 157 patients, 130 were male and 27 were female. Different types of arrythmias following AMI were studied Supraventricular tachycardia, Supraventicular extrasystole and Ventricular extrasystole were found to be more common. The mortality due to myocardial infarction was also discussed.*

Introduction : A great deal of information has been derived from epidemio-logical studies in different countries of the world and socio-economic conditions of the population within the same country as regards coronary heart disease. The incidence of H. D, varies from country to country. The mortality rate from coronary heart disease is highest in Finland, then U. S. A., Newzealand, Scotland, North Ireland. Australia, Canada, England and Wales and lowest in Japan. In U. S. A. about one million people are suffering from an attack of acute myocardial infarction. About 50% of death after acute infarctions occur outside the Hospital and more than 40% within the first two hours after the onset of symptoms. Perihospital care now possible. Mobile units were started and home administration of patient antiarrhythmic drugs was recommended. C. C. C. Units are now available in many cities. If such unit is not available, the patient should be taken to a hospital as rapidly as possible and to be treated in a small even 2 bed C. C. C. Unit, attached near to Nursing Staff station so that monitoring is possible. The commonest cause of early death was V. Fibrillation or cardiac asystole. The ventricular fibrillation may be primary or it may be preceded by warning ventricular arrhythmia. The prompt control of arrhythmias reduces mortality of the Hospital patient with acute myocardial infarction by 30%.

The main purpose of this article is to discuss the type of patients which are admitted in the C. C. C. Units with particular reference to acute myocardial infarction and different types of arrhythmias from which patient may suffer. The need for every hospital with facilities for continuous monitoring and with appropriately trained personnel can provide the accepted standard of care for patients with acute myocardial infarction and thus mortalily from acute attack can reduce to 20-25% and subsequent re-infarction by prophylactic drug therapy.

Materials and Methods : 157 patients who were admitted in the C. C. U. S. in two months period in a well-equiped university hospital in Gotenbergh, Sweden, where all modern facilities including mobile units, separate counter for admission, monitoring unit including 24 hours E. C. G. recording, ST Mapping and synchronous defibrillator and stand by transvenous pacing arrangement were available. Out of 157 patients, 130 were male and 27 were female.

TABLE I.

Shows patients admitted in the C. C. Units with different types of diseases.

Disease	Patients admitted to I. C. C. Unit.	
	Male.	Female.
Angina Pectoris	10	1
Acute Myocardial Infarction	63	12
Suspicion of Myocardial Infarction.	6	3
Perimyocarditis	6	1
Arrhythmias	4	3
Observation for a typical Chest pain.	27	2
Pulmonary Embolism	1	1
Other causes	13	5

Digitalis Intoxication, viral myositis, gall bladder disease, peptic perforation, hiatus hernia, cardiac neurosis and after transeptal cardiac catheterization (hazards) are all included in other causes.

TABLE II.

Shows the only proven acute myocardial infarctions in patients i. e. by History, E. C. G. and Serum Enzymes tests with age and sex incidence.

Number of patients—75.

Age	Male	Female.
16—20	0	0
21—30	1	0
31—40	1	0
41—50	7	0
51—60	18	1
61—70	31	6
71—	5	5
Total	63	12

The patient may be admitted in the C. C. Unit with different arrhythmias as a result of acute myocardial infarction.

TABLE III.

Shows different arrhythmias associated with acute myocardial infarction.

Total number of patients—140.

Arrhythmias	No.	Percentage.
A. V.—Block I	1	·71
A. V.—Block II	3	2·14
A. V.—Block III	4	2 86
A. V.—Dissociation	1	·71
Suprav—Bradycardia	8	5·71
Suprav—Tachycardia	18	12·86
Suprav—E. S.	19	13·57
Atrial Flutter	5	3·57
Atrial Fibrillation	12	8·57
Sinus arrest	1	·71
Nodal Rhythm	7	5·00
Ventricular E. S.	54	38·57
Ventricular Fibrillation	1	·71
Cardiac Asystol	1	·71
Slow V. T.	1	·71
Sinus Arrhythmia	3	2·14
Pacemaker Rhythm	1	·71

11 patients died. Following myocardial infarction during stay in C. C. U. S. Of this 11 patients, 7 were male and 4 were female. The usual stay in the C. C. Units varies from 2 days to 14 days according to the condition of the patients.

The cause of death was due to ventricular fibrillation, cardiac asystol, pulmonary embolism, severe L. V. failure and cardiogenic shock due to pump failure and Adame's-Stokes-Syndrome.

Discussion : Knowing the coronary heart disease is common does not of course, permit a physician to dismiss in a flippant manner though the incidence varies from country to country. The age incidence also varies from country to country. In this series of 78 patients the lowest age group was 23 year old male patient, from Finland Origin. The community survey undertaken in Edinburgh showed that half of the death from acute myocardial infarction have occurred within 2 hours of the onset of identifiable symptoms. Further, the increment in total mortality from 2 hours to 24 hours was 23%. The main causes of death in first 2 hours period were V. Fibrillation or ventricular asystol. The ventricular fibrillation may be primary or it may develop after warning ventricular arrhythmias. The main cause of death after 2 hours are :

1. V. Fibrillation,
2. Cardiogenic Shock,
3. Severe L. V. Failure,
4. Ventricular Rupture.

The need of C. C. U. S., mobile unit, drugs prophylaxis and efficient personnel need no further emphysis. But cost-benefit ratio should be realised by the planner of the developing country.

Aknowledgements : Our sincere thank goes to Dr. Stig Homberg, Chief of the C. C. Unit of Cardiology Department, Salanger Hospital, Gotenborgh, Sweden, who allows us to carry this research and to publish necessary date of the Unit.

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MAXILLECTOMY : RECONSTRUCTION OF ORAL CAVITY WITH MUCOSAL FLAP.

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Key words : *Conservative Maxillectomy—Maxillectomy.*

Introduction : Tumours of the maxilla are not uncommon, but few of them require total maxillectomy. It is the general practice all over the world to do total maxillectomy for malignant conditions of the maxilla. It may be associated with exenteration of the eye ball and the ethmoidal air cells etc., depending on the extention of the disease process and the gap is being reconstituted with plastic operations and presthetic means after the wound is healed by granulation and fibrosis. This requires the help of a plastic surgeon and/or prosthesis, it also takes long time and involves extra expenditures for the functional rehabilitation of the patient. In the absence of prosthesis service and difficulty of getting the help of plastic surgery at the moment in this country, whereas we are to do maxillectomy for unavoidable causes, we tried to help the patients by shortening the periods of healing and functional rehabilitation after the operation. We tried to fill the gap peoduced by the removal of the maxilla and to reconstitute the oral cavity with the help of buccal mucosal flap preserved during operation. This has given us, excellent results, by the healing of the wound by primary intention and taking of the flap in all the six cases we have operated on. The healing of the wound occured in seven days time and the patients were functionally quite alright by being able to take feed-liquids from the fourth post-operaiive day and semi-solid from the seventh post-operative day.

The cosmetic appearence of the patient could not be restored and that side of the face was flat in appearence, but the patients accepted it gladly, because of the functional ability and disappearence of the symptom.

Case Reports : In our series, the case were between the ages of 16 and 42 years with mean age of 35 years. Out of six cases we operated one was female and the rest were male. The presenting clinical features were pain. presented by five cases out of the six, the one case which did dot complain of pain proved later on to be a case of extensive esteoma of the maxilla histopathologically. Facial deformity was present in all cases. Nasal obstruction was present in three cases. Orbital involvement in one case only, with displacement of the eye ball, but no visual impairment. Deformity of the alveolar process and teeth, with difficulty in mastication and swallowing was presented by all the cases. There was no regional lymph node involvement in any of the cases.

Investigations : Routine blood examinations for Hb%, TC, DC, ESR in all cases were within normal limit, except in one case where ths ESR was 50mm. in the 1st hour.

Blood urea and fasting blood sugar were within normal limit in all cases.

Stool/Urine for routine examination—N.A.D. in all cases.

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X-Ray cheat P/A view—N.A.D. in all cases.

X-Ray sinuses—Showed opacity of the involved maxillary sinuses in all cases, destruction and distortion of alveelar process in all cases, destruction of orbital floor in two cases only.

Selection of Cases : In our series the cases were selected on the basis of severity of symptoms such as facial deformity, intractable facial pain, difficulty in mastication due to malalignment of the jaws and clinical diagnosis of malignancy, and where the tumour has neither involved the buccal mucosa nor crossed the midline.

Operative Technique : In five out of six cases the maxilla was exposed by Weber-Fargusson incision (DeWeese '73). In one case only where the malignancy was doubtful and the age of the patient was 16 years only. Initially partial n axillectomy was tried by giving sublabial incision, but at operation when it was seen that the disease process has involved the major part of the maxilla and partial maxillectomy was not possible, then the incision was converted to Weber-Fargusson incision and total maxillectomy was done. The maxilla was excised by preserving the buccal mucosa after detouching it from the frontal process, zygomatic process and maxillary tuberosity and dividing the hard palate in the midline. The soft palate was preserved by separatiug it from the hard palate. The preserved mucosal fiap was then stitched to the periosteum of the opposite side In the midline and soft palate of the same side.

Discussion : Maxillary surgery is an age old method and is practised all over the world. Probably the first succesful total maxillectomy—for esteosarcoma—was carried out by Joseph Gonsol in 1827. Moure of Bordeaux describe his lateral rhinomotomy in 1902, which provided the mainstay in sinus cancer surgery to date (Harrison '79). Excision of the maxilla and its replacement by prosthesis is being practised since long (Bailey, Love '35). Probably, not many in this regard has been made by authors in this country, at least we could not get any reference by searching this index. The cases reported here had some distinctive features in the selection of cases and the operative methodology. The general practice of maxillectomy is to excise the whole maxilla along with the disease and to allow the gap to be healed by granulation and fibrosis and to fit a prosthesis to restore the facial contour and reconstruction of the buccal oavity. In our series due to non-availability of the prosthetic help, we tried to cover the gap by mucosal flap for re-consrruction of the oral cavity and its functional rehabilitation. The flap was taken in all cases and the healing occured within seven days time by primary intention, giving a beautiful functional oral cavity. This is the most distinctive feature of our series as against conventional operations. We had to

Fig.: Post-operative photograph of a patient showing reconstruction of the oral cavity by mucosal flap.

sacrifice the cosmetic aspect of the face, caused by loss of the malar prominence, but all our patients accepted this cosmetic loss gladly as they are free from disease, symptom and functionally alright.

As far as reports avilable this is a new method and not been practised by any surgeon. We think so long the presthetic appliances are not readily and cheaply available in this country, the patients can be given a useful life with this method of surgery,

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A SAMPLE SURVEY OF INCIDENCE OF COLOUR BLINDNESS AMONGST THE URBAN POPULATION OF DHAKA METROPOLITAN CITY.

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Key words : *Colour Blindness ; Acuity of vision.*

Summary : *This is a sample study of incidence of Colour Blidness amongst 1000 randomly selected doctors, nunrses and students of Dhaka Medical College and Hospital. Of 713 males and 287 females studied, 3·78% males and 0·35% females were found coulour blind ; the overall incidence in the population is 2·8%. They were tested by Ishihara charts. In addition, the affected persons were also tested for their acuity of vision and were found normal.*

Introduction : Colour Vision is a fundamental guiding factor for modern human life and is a decisive factor of fitness for some services and functions. Colour vision study is necessary in Bangladesh, as with the increase of industrialisation to the extent we have, the necessity of drivers' pilots and workers for handling of sophisticated equipments are increasing.

Colour blindness is a condition which is heridi-tarily determined. Males are more affected than females. There are two major types of colour blindness, namely Red-Green and Blue. When one's retina is deficient in materials necessary for responding to Red-Green or Red or Green light, the type is called Red-Green colour blindness and the person can not detect the particular colour of light. On the contrary, when one's retina is deficient in materials necessary for responding to Biue light, the type is called Blue colour blindness.

No study has yet been done on colour blindness in our country. Considering this we took this sample survey of colour vision test. The study was done in a particular community—Dhaka Medical College and Hospital—doctors, nurses and medical students to start with. We hope to extend our survey amongst other community of Dhaka city.

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Methods and Materials : The survey was done on 1000 (one thousand) randomly selected subjects who were doctors, nurses and medical students of Dhaka Medical College and Hospital. Doctors were examined in wards during duty hours. Nurses were examined in hospital during their duty hours. Medical students were examined in betwen classes in College and hostel.

Consent was taken from each subject, the individual being told that all results would be kept confidential. The subject was then shown all the plates of Ishihara chart for colour blindness. The results were noted on printed proforma and later compared with the key and records were kept.

In determining whether one is normal or colour blind the only indication used althrough was the directions in the Ishihara charts for colour blindness. Ishihara charts of 3rd edition of the year 1960 printed in Japan was used for the colour vision test. All the colour blind subjects were also tested for acuity of vision—both near and distant vision.

Results : Table I shows that among 1000 subjects studied total number of colour blinds were 28 out of which 27 were male and 1 female. The incidence of colour blindness in the population studied is 2·8%, male being 3·78% and female 0·35%. The table also shows that the colour blindness was significantly more in males than in females. Although females were slightly less represented in the sample, the amount of significance ($P < 0{\cdot}05$) obtained with the present sample may not influence the result if the appropriate proportion of females were taken.

TABLE I.

Colour blind versus Sex.

Subject	Male		Female		Total	
	No.	%	No.	%	No.	%
Colour Blind.	27	3·78	1	0·35	28	2·8
Nomal vision.	686	96·22	286	99·65	972	97·2
Total	713	71·3	287	28·7	1000	100

$X^2 = 8{\cdot}825 \qquad P < 0{\cdot}05.$

Table II shows that the total number of doctors in the study were 174 of which 153 were male and 21 were female. Only 4 male doctors were found colour blind. Total number of nurses in the study were 200 among which 45 were male and 155 were female. 4 nurses were found colour blind of which 3 were male and 1 female. Total number of medical students studied were 626 among which 515 were male and 111 were female. Number of medical students found colour blind were 20 and all were male. The percentage of colour blind doctors, nurses and medical students were 2·29, 0·00 and 3·19 respectively.

TABLE II.

Colour blindness in different sections.

Subject	No. in Campus.			No. in study.			No. in C. B.			% of C. B.		
	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.
Doctors	348	293	55	174	153	21	4	4	0	2·29	2·61	0
Nurses	580	63	517	200	45	155	4	3	1	2·00	6·66	0·64
Medical students	993	753	240	626	515	111	20	20	0	3·19	3·88	0

M = Male, F = Female, C. B. = Colour Blind.

All the colour blind subjects were red-green blind and none found blue blind.

Discussion : In the present study, the frequency of colour blindness in the population was 2·8%, males been 3·78% and females 0·35%. A number of workers have carried out assay of colour blindness and found variable incidence in different parts of the world as well as in different regions of India. Mahajan and Gogna (1977) studied the school chilldren of Patiala, India, between the age group of 10 and 15 years and found that 3·85% males and 0·38% females were colour blind. Ramnachandriah (1960) reported an incidence of 4·66% in male school children. Bangsal (1961) reported an incidence of 5·03% in male Panjabies, while Bhasin (1967) showed an incidence of 4·28 in male newars of Nepal and Tiwari (1969) showed still higher incidence (4·98%) in Tibetians. Dutta and Kumar (1966) reported an incidence of 2·86% in 243 Brahmins examined by them. They also examined male students where incidence was 3·19%.

Pickford (1958) reported that incidence of red-green blindness is higher among the Europians and American whites (7-8%) than among the Asiatic Indians (4—5%) and American and Australian Indians (2-3%). Kalmus (1964) observed 4·7% colour blindness in males in Bedvin (Sanai) ; 4·7 to 7·7% in Urban Maxicans and 2·3% in Tribal Maxicans. Simon (1952) found 1·86% colour blindness in the people of Uganda and Appelmans et al (1953) found 1·85% colour blindness in Congulese. The percentage incidence of colour blindness in other areas was 3·6% in Japan (Sato, 1953), 3 7% in Chinese (Chan and Mao, 1950) and 3·71% in American Negroes (Clements, 1930).

Dutta and Kumar (1966), Bhasin (1967) and Tiwari (1969) reported 0 0% incidence in females, while Bansal (1967) found frequency of 1.13% among 441 female Punjabies showing camparatively higher incidence. In the present study, the incidence in females was much less, i e. 0·35%.

The present study was done on a population with relatively better socio-economic status in the context of our country. So we cannot tell about the impact of cultural variation on colour blindness in our country from this study. Post (1952) reported that colour blindness is more common in advanced cultured generations. Mahajan and Gogna (1977) observed that the incidence of colour blindness was higher among students studying in English medium school (having better socio-economic status and relatively advanced culture) than that of studying in ordinary schools.

All the cases in the present study had normal acuity of vision (both distant and near) showing thereby that colour blindness is not associated with eye-sight defect. Moreover, most of the subjects were unaware of their colour vision defect.

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ELECTROCARDIOGRAPHIC CHANGES IN ELECTROLYTE IMBALANCE

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Key words : *Electrolyte Imbalance—E. C. G. changes—Cardiac Arrhythmias—Response to therapy.*

Summary : *34 patients with mean age 37·20 years (range 7-80 years) from different wards of the Institute of Post-Graduate Medicine and Research, Dhaka were studied for electrolyte imbalance and its relation with electrocardiographic changes. Electrolyte imbalances were found to be mainly due to chronic and acute impairment of renal function (70·59%). Hypocalcaemia was observed in 27 cases (79·41%), Hyponatraemia in 25 cases (73·53%), Hyperkalaemia in 24 cases (70·59%), Hypochloraemia in 9 cases (26·47%), Hyperchloraemia in 7 cases (20·59%) and Hypokalaemia in 4 cases (11·76%). Hypocalaemia was associated with prolonged Q-T interval in 17 cases (62·96%). Hyperkalaemia was associated with low voltage or absent P wave in 11 cases (45·83%), broad QRS complex in 5 cases (20 83%) and tall peaked T wave in 12 cases (50%). T wave changes were found in all four cases of hyperkalaemia while ventricular premature contraction, prolonged PR interval and U wave ware observed singly in three cases. ECG changes in all the cases reverted to normal with correction of Electrolyte imbalance.*

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Introduction : Imbalance of electrolytes is a common problem in clinical practice. It may give rise to different types of electrocardiographic changes including fatal arrhythmias. Even slight alteration in certain electrolytes specifically magnesium (Mg^{++}) and potassium (K^{+}) can increase the risk of cardiac arrhythmias and sudden death (Gotenborg Symposium : Electrolytes and heart, 1982). Electrolyte imbalance is common in patients with renal failure hypertension, myocardial following and congestive heart failure particularly infarction treatment with diuretic.

This study aimed at finding out spectrum of electrolyte imbalance and associated electrocardiographic changes and response to therapy.

Patients and Methods : Thirty four patients (male 21 and female 13) with a mean age of 37·20 years (range 7-80 years) were studied in the Institute of Post-Graduate Medicine and Research, Dhaka, over a period of six months from 1st December, 1982 to 1st June, 1983 (Table I).

TABLE I.

Age and sex distribution of patients with Electrolyte Imbalance.

Age	<10	10-30	31-50	51-70	>70	Total
Male	0	5	10	5	1	21
Female	2	7	2	2	0	13
Total	2	12	12	7	1	34
Percentage	5 88	35 29	35·29	20 59	2 94	

Patients having at least single electrolyte imbalance were included in the study. Blood urea, Serum creatinine, Serum potassium, Serum sodium and Serum chloride were estimated in each case from International Centre for Diarrhoeal Diseases Research, Bangladesh. Serum sodium and serum potassium were determined using principle of Flame Photometry while s. chloride was determined using colorimetric principle. All these were determined by semi automatic method. serum calcium was estimated from the Biochemistry laboratory of Institute of Post-Graduate Medicine and Research, Dhaka using O-crepolpthalein complexone method (Ray S. B. C. et al, 1967). ECG recording was done both before and after correction of electrolyte imbalance. The P wave, P-R interval, R-R interval, QTc interval, QRS interval, ST segment and T wave were studied. Search was made for any irregularity in rhythm or U wave. Normal range of P-R interval was taken to be 0·12—0·20 seconds. QTc interval corrected was determined from observed QT interval using nomogram (Kission et al, 1948). A QTc interval above 0 42 second in men and above 0 43 second in women was considered abnormal. QRS interval was considered widened when it exceeded 0·10 second. Normal range of ST segment was taken to be between 0 5mm below to 2mm above isoelectric line in precordial leads (Goldman M. J.).

Results : Majority of the patients (24 cases) showing electrolyte imbalance were suffering from acute or chronic impairment of renal function (70·59%). Other causes were hypertension with CVA, Ischaemic heart disease, Cirrhosis of liver etc. (Table II). Hypo-calcaemia was observed in 27

TABDE II.

Disease distribution of patients with Electrolyte Imbalance.

Disease	No. of patients.	Percentage.
Hypertension with CRF	9	26·47
Glomerulonephri.is with CRF	4	11·76
Diabetes mellitus with CRF	6	17·64
Obstructive uropathy with CRF	2	5 88
Acute renal failure	3	3·82
Hypertension with CVA	2	5·88
Ischaemic heart disease	2	6·25
Others	6	17·65

cases (79·41%), hyponatraemia in 25 cases (73·53%), hyperkalaemia in 24 cases (70·59%), hypochloraemia in 9 cases (26·47%), hyperchloraemia in 7 cases (20·59%) and hypokalaemia in 4 cases (11·76%) (Table III). None exhibited hypercalcaemia or

TABLE III.

Incidence of Ele trolyte distrurbance.

Electrolyte disterbance.	No. of patients.	Percentage.
Hypocalcaemia	27	79·41
Hyponatraemia	25	73·53
Hyperkalaemia	24	70 59
Hypochloraemia	9	26·47
Hyperchloraemia	7	20·59
Hypokalaemia	4	11·76

hypernatraemia. ECG changes were studied in all the cases. No electrocardiographic change was noted in cases of imbalance of serum sodium or serum chloride of the 24 patients of hyperkalaemia, 21 showed at least one change suggestive of raised serum potassium level. ECG change

was observed in all the four cases of hypokalaemia. Out of 27 cases of hypocalcaemia, 17 showed ECG changes (Table IV). ECG changes associated with hyperkalaemia were tall tented 'T' wave

TABLE IV.

No. of patients showing Eletrocardiographic changes.

Electrolyte disorders.	No. of patients.	No. showing ECG changes.	Percentage.
Hypocalcaemia	27	17	62·96
Hyperkalaemia	24	21	87·51
Hypokalaemia	4	4	100·00

in 12 cases, low amplitude or absence of P wave in 11 cases, widening of QRS interval in 5 cases and elevation of ST segment in 2 cases (Table V).

TABLE V.

Type of Electrocardiographic changes in Hyperkalaemia.

ECG changes	No. of patients.	Percentage.
Tall tented 'T' wave	12	50·00
Absence or low amplitude of P wave.	11	40·83
Broad QRS complex	5	20·83
ST Elevation	2	8·33

Among patiens with hypokalaemia inversion of T wave was observed in all the four cases while prolongation of P-R interval, ventricular premature contraction and prominent U wave were observed singly in three cases (Table VI). ECG changes was observed in 17 patients of hypocalcaemia.

TABLE VI.

Types of Electrocardiographic changes in Hypokalaemia.

ECG changes	No. of patients.	Percentage.
Inversion of 'T' wave	4	100·00
Prolongation of 'P-R' interval	1	25·00
Ventricular premature contraction.	1	25·00
Prominent 'U' wave	1	25·00

Correction of hypocalcaemia was done in 10 of the 17 cases of lowered serum calcium level showing ECG changes. Values of S. calcium before and after correction of imbalance were 7·4± SEM ·080mg/100ml and 9·31± SEM 119mg/100ml respectively. Rise in S. calcium was statistically significant (Table VII). Of the 21 cases of

TABLE VII.

Serum Calcium level before and after correction of imbalance in cases of Hypocalcaemia.

	Serum calcium (mg/100ml± SEM).
Before correction of imbalance	7·4± ·080 N=17
After correction of imbalance	9·31*± ·119 N=10

*P < ·001 in a 'T' test. N=Number of patient.

hyperkalaemia showing ECG changes correction of imbalance was done in 20 cases. Values of S. potassium before and after correction of imbalance were 6·619± SEM ·228mmol/L and 4·45± mmol/L respectively. The fall in S. potassium was statistically significant (Table VIII). In case of

TABLE VIII.

Serum Potassium level before and after correction of imbalance in cases of Hyperkalaemia.

	S. Potassium (mmol/L± SEM).
Before correction of imbalance	6·619±·228 N=21
After correction of Imbalance	4.45* ± ·015 N=20

* P < ·001 in a 'T' test. N=Number of patients.

hypokalaemia correction of imbalance was done in all the 4 cases. Serum potassium level before and after correction of imbalance were 2·82± SEM ·125mmol/L and 4·475± SEM ·085mmol/L respectively which is statistically significant (Table IX).

TABLE IX.

Serum potassium level before and after correction of imbalance in cases of Hypokalaemia.

	Serum potassium (mmol/L · SEM).
Before correction of imbalance	2·82 ± ·125 N=4
After correction of imbalance	4·475* ± ·083 N=4

*P < ·001 in a 'T' test. N=Number of patient.

Repeat ECG was done in all the cases of corrected electrolyte imbalance. All the ECG changes due to electrolyte disturbance were reversed after correction of the electrolyte imbalance.

Discussion : In this study, patients with electrolyte disturbance were suffering from chronic renal failure 21 (61·7%), acute renal failure 3 (8·82%), hypertension with C. V. A. 2 (5·88%). Ischaemic heart disease 2 (6·25%) and others 6 (17·65%) (Table II).

Major eletrolyte imbalance observed were : hypocalcaemia in 27 cases (79·41%), hyponatraemia in 25 cases (73·53%), hyperkalaemia in 24 cases (70·59%), hypochloraemia in 9 cases (26.47%), hyperchloraemia in 7 cases (20·59%) and hypokalaemia in 4 cases (11·76%).

Electrocardiographic changes were observed in 21 (87·50%) of 24 hyperkalaemia patients comprising of tall tented T wave in 12 cases, low amptitude or absence of P wave in 11 cases, widening of QRS interval in 5 cases and elevation of ST Segment in 2 cases. Lowering of the serum potassium with glucose insuline infusion was associated with normalisation of ECG in all these cases. All 4 cases (100%) of hypokalaemia showed electrocardiographic changes like T inversion in all the 4 cases while prolongation of PR interval, ventricular premature contraction and prominent U wave were observed singly 3 cases. All these electrocardiographic changes could be reversed to normal after correction of hypokalaemia. 3 cases of hypokalaemia were due to diuretic therapy which is consistent with the observation of Richart J. et al. Richart J. and his associates also showed that 10 out of their 21 hypokalaemia patients i.e. 48% have ventricular arrythmia and low serum potassium increases the possibility of ventricular arrythmia by 2·3 times in their series. Hypokalaemia increases the rate of spontaneous depolarisation (phase 4) in conducting tissue resulting in an increase in automaticity and also prevalence of ventricular arrhythmia is inversely related to the level of serum potassium. Prolongation of Q-Tc interval was observed in 17 (62·9%) of the 27 hypocalcaemic patients and electrocardiographic changes could be reversed in 10 of the 17 cases with corrective therapy.

Serum magnesium could be useful because hypomagnesimia may produce prolonged Q-Tc interval. Hypomagnesimia concurrent with hypokalaemia and hypocalcaemia may cause prolongation of Q-Tc interval and serum magnesium estimation could be of great value in this context. No electrocardiographic changes could be attributable to 25 (73·53%) cases of hyponatraemia, 9 (26·47%) cases of hypchloraemia, 7 (20·59%) cases of hyperchloraemia. This could be due to the fact that extreme variation of the serum sodium and chloride concentration needed for production of electrocardiographic changes are not compatible with life (Anderson, 1980).

The total electrolyie content of the heart represent a very small portion of the total body electrolytes (Olesen K. H , 1980). The total body electrolyte is approximately estimated by total exchangeable electrolyte the importance of which lies in the fact that electrolyte of the myocardium follow the trends observed in total exchangeable electrolytes. Though measurement of total exchangeable sodium, chloride, potassium and magnesium seem ideal, estimation of serum electrolytes is very helpful for diagnostic and therapeutic purpose. Serum electrolyte disturbances affect intracellular electrolyte concentration and as such membrance potential is disturbed which alter the electrical events of the heart and ECG changes become evident.

In this study though ECG changes due to imbalance of a particular electrolyte has been observed it is very difficult to isolate and identify the effect

of changes in one ion because the change may be modified or influenced by changes in other ion (Johansson, 1980).

Meticulous ECG studies in clinically suspicious patients serve as a resonable satisfactory guide to serum electrolyte level when actual determination of these electrolytes may not be possible.

Acknowledgement. We are greatful to Prof. M. Ishaque, Head of the Department of Biochemistry, Institute of Post-Graduate Medicine and Research, Dhaka for his continuous co-operation. We express our sincere thanks to the Institute of Cholera and Diarrhoeal Disease for helping us with the relevant investigations and Mr. Md. Tasir Uddin Mollah for secretariat assistance.

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HAEMATURIA : DUE TO LEECH--A CASE REPORT

A. K. M. Mahbubur Rahman.

Key words : *Haematuria : Due to leech.*

Summary : *A case of haematuria, due to a leech in the urinary bladder of a male, entered through urethra, is reported. It is a very rare incidence and possibly first reported case from Bangladesh.*

Case Report : A 20 years old man came to Modernised Sadar Hospital, Noakhali in the evening of 5th May, 1983 with the complaints of lower abdominal pain for about 3 hours and frank haematuria for 2 hours. He also gave the history of fishing in a village river when he felt some irritation in the penile urethra and also saw a small blackish structure at the tip of his urethra which immediately disappeared (i.e. went in). It was suggested as a leech. About one hour after this incidence he started to have the complaints.

Clinical examination revealed the patient as moderately anaemic with distended, tender hypogastrium. Patient was asked to pass urine. Frank blood and clots appeard during the act and was accompanied by pain. A catheter was passed to relieve retention and it gave the feeling of the urinary blader full of blood clots. Plain X-Ray KUB contributed nothing particular. Pulse was rapid and B. P. was still normal.

Senior Consultant (Surgery) Modernised Sadar Hospital, Noakhali, Bangladesh.

Fig. 1. The patient.

With a bottle of blood transfusion—a large sized leech with huge amount of blood clots were removed by opening the urinary bladder supra-pubically. The bladder mucosa was found to be hæmorrhagic in several places with small ulcerations. Bladder was drained per urethra. With the usual post operative measures the patient recovered and was discharged on 31-5-83.

The leech (Fig. 2) was dead and about 9½″ in length and 1½″ in circumference.

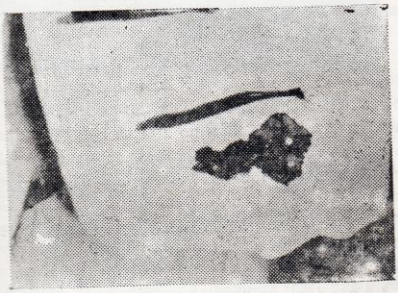

Fig. 2. The leech with blood clots.

Leech : It belongs to animal kingdom and phylum annelida. It is found in ponds, swamps and slowly flowing streams. It has blood sucking habit, drawing blood from man or beast. A leech can suck blood several times its own weight and the animal takes several months to digest it. In feeding a leech fastens itself to its prey by posterior sucker, applies the anterior suckers, makes a wound with serrated edge of the jaw. The incision is tri-radiate and it lays open the vessels from which the blood is sucked in, with the help of atmospheric pressure. While feeding, the salivary glands pour out saliva. The saliva contains hirudin, which mixes freely with the blood and prevents coagulation, thus, keeping a regular flow of blood. The leech remains in concealment till this meal lasts. It remains turgid, while digesting the meal.

Discussion : During rainy season, in many parts of Bangladesh, leeches of different sizes and types are available. Possibly it is abundant in Noakhali.

It is well known that the leech has the habit of entering anatomical orifices of man, animals etc, and causing bleeding. Reports of leech in the pharynx causing respiratory obstruction and hæmatemesis (M. Sing et al, 1979), in the uasal cavity causing epistaxis and bleeding from vagina (Goldsmid, 1977) are available. Cases are also reported that leech has gone into male urethra (S. Shaha and I. Shaha, 1977), and into the urinary bladder (G. Mukherjee, 1974).

Description of such hæmeturia are very rare in our literature. In standard surgical text books no reference to such cases are available. As leeches are common in our country. Such possibility in diagnosis of hæmaturia is omphasised.

Acknowledgements : I am indebted to Prof. G. Rasul for the guidence, helpful criticism and advice. I am also grateful to Superintendent, Modernised Sadar Hospital, Noakhali for permission to publish the case.

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SPONTANEOUS RUPTURE OF A HEPATOMA--A CASE REPORT

Md. Abdul Hadi [1]
Imtiaz Ahmed [2]

Key words : *Hepatoma ; primary carcinoma of liver ; hepatocellular carcinoma ; hemoperitoneum.*

Summary : *Spontaneous rupture of hepatoma presenting as a case of acute abdomen with hemoperitoneum is reported in a young, non-cirrhotic male of 25 years. The diagnosis was unsuspected prior to exploratory laperotomy. The literature is reviewed and the problems of diagnosis and management are discussed.*

Spontaneous rupture of hepatoma is a rare surgical emergency. In this paper, we would like to present the first case report from Bangladesh.

Case Report : A. T., 25 years old, married, muslim male was admitted to Dhaka Medical College and Hospital on 28-6-83 in a state of shock associated with severe abdominal pain of one-day duration. For the previous two months, his appetite had been very poor and he had lost a good deal of weight. For the last one year, he had been suffering from dull aching pain in the right hypochondrium. There was no previous history of jaundice or of taking any hepatotoxic drugs.

On examination, the patient was found to be emaciated and severely anæmic. He was cyanotic, cold and clammy. His temperature was 98·6°F. His pulse was 112 per minute and blood pressure was 90mm of Hg systolic. Abdomen was markedly distended, tender and rigid in its upper part. Rebound tenderness and shifting dullness were present. Liver was 5 cm below the right costal margine, firm and tender. The spleen was not palpable. Other systems did not reveal any abnormality. Results of all routine laboratory investigations were within normal range. The provisional diagnosis was "acute abdomen".

The patient was quickly resuscitated. We then performed an emergency laparotomy and on exploration, frank blood was aspirated from peritoneal cavity. Just following the clots, the source of hæmorrhage was identified to be a friable cystic mass on the inferior surface of the right lobe of the liver. There were a few other nodules varring in size from 2cm to 3cm, greyish-yellow in colour and variable in consistency. The rest of the liver appeared to be normal. The peritoneum and other abdominal organs were found to be healthy. Sections were taken from a nodule

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and also from apparent healthy liver and sent for histopathology. The report was as follows : "Sections of liver tissue (nodule) show multiple circumscribed masses of a carcinoma composed of large, oval and polyhedral cells and showing a tubercular pattern. The histological picture is typical of a primary hepatocellular carcinoma (Fig. 1 and Fig. 2). The other section shows normal hepatic architeture thus excluding cirrhosis "

Fig 1. Hepatocellular carcinoma : magnification : 110 × .

Fig. 2. Hepatocellular carcinoma : magnification : 220 × .

The post-operative period was quite stormy and eventful. The patient, however, recovered and left the hospital ; but died about one month later. No autopsy was performed.

Discussion : Hepatoma (primary carcinoma of liver) is apparently rare in Bangladesh. Several published reports, however, suggest that Bangladesh is one of the areas in which hepatoma is likely to have a very high incidence (Islam N. et al, 1968 ; 1977 ; 1979). Such variations in opinion are due to the fact that adequate data on its incidence in Bangladesh are not currently available. Moreover, we were unable to find any reports by Bangladeshi authors of spontaneous ruptnre of a hepatoma. Berman found six such cases among Bantus and Ong et al collected 20 such cases from Hong Cong with in a span of three years (Berman C. 1951 ; Ong C. B. et al, 1965). Kew reported a high incidence of 5 to 10 percent in black patients coming to hospital in Southern Africa, particularly in Mozambique where the tumour has its greatest incidence (Kew M. C. et al, 1978). Most of the patients in these series were male.

Spontaneous rupture of hepatoma is a misdiagnosed surgical emergency and the problems of diagnosis and management have been discussed by several authors (Kew M. C., 1978 ; Okezie O., De Angelis G. 1974 ; Singh S. et al, 1978). The patients are of poor risk and the postoperative period is usually stormy.

Hepatoma presenting as an acute abdominal condition is difficult to diagnose. There are no pathognomonic symptoms and signs or laboratory indices which can diagnose this entity. However, certain characteristic features of long-standing cirrhosis with a palpable liver mass and rapid onset of hemoperitonium may suggest the diagnosis in a group of elderly cirrhotic patients. Several series showed the liver cirrhotic in all cases (Berman C., 1951 ; Okezie O., 1974 ; Ong C. B. et al, 1965 ; Singh S. et al, 1978). In contrast, our cases is unusual in that he was young, he was not associated with cirrhosis, he was having a rapid increase in size of the tumour within a short time and he presented with a massive intraperitoneal bleeding caused by rupture of one of the malignant liver nodules. The diagnosis was unsuspected prior to exploratory laparotomy.

The tumours receive their main blood supply from the hepatic artery with increased functioning arteriovenous shunt (Wartnaby KM. et al, 1962).

Angiographically, the tumours are almost always highly vascular and they show the typical features of a malignant circulation. It is conceivable that a surface tumour could rupture from a trivial trauma, but trauma was not a feature in our patient.

The prognosis is extremely grave. In patients in whom the diagnosis of primary liver cell carcinoma is known, intraperitonial hæmorrhage proves to be the terminal event. The very poor prognosis is probably related to the time of diagnosis, the degree of hæmorrhage and the underlying pathology. For timely diagnosis and management, the possibility of rupture of a hepatoma should be cosidered in every case of acute abdomen presenting with intraperitonial hæmorrhage.

Acknowledgement : We wish to express our thanks to Dr. Moinul Islam for the histopathological report.

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College News

Calender of Events.

February 1984 :

The 2nd issue of the Journal of the BCPS appers.

Dr, R. K. Khandaker, Prof. of Cardiology, ICVD, Dhaka delivers a lecture on "Risk factors in Coronary artery disease ; how to prevent it."

March 1984 :

Dr. Fazlul Haque, Professor of Ophthalmology, CMC, Chittagong delivers a lecture on "Differential diagnosis and investigations of sudden miocular blindness."

May 1984 :

Dr. S. N. Samad Chowdhury, Prof. of Anaesthesiology, DMC, Dhaka delivers a lecture on "Importance of pre-anaesthetic preperation and its influence on the fate of operation."

June 1984 :

A 3 weeks' Orientation course for FCPS Part I Examination was held from 2-6-84 to 23-6-84.

July 1984 :

Prof. R. H. Girdwood, President, Royal College of Physicians of Edinburg visits the College to conduct the FCPS Part II (Medicine) Examination of July '84 as external examiner and delivers his lecture in the Auditorium of the College.

Prof, Eyre Brook comes to the College to conduct FCPS Part II (Surgery) Examination of July '84 as an external examiner.

Prof, F. A. Billson of the University of Sydney, Australia comes to the College to conduct FCPS Part II (Ophthalmology) Examination of July '84 as an external examiner.

August 1984 :

Enhancement of lecture fee from Taka 75/- to Taka 100/- per lecture per hour in the Orientation course for FCPS Part I Examination with effect from December, 1984.

September 1984 :

Recognition of the BNSB Eye Infirmary and Training Complex, Chittagong to conduct the FCPS Part II Ophthalmology course in collaboration with the Eye Department of Chittagong Medical College.

FCPS Part II Examination declared open for candidates without having one years' Institutional organised course with effect from January, 1986.

Confirmtaion of the results of FCPS Part I, FCPS Part II and MCPS Examinations held in July, 1984 (list enclosed).

Formation of a Committee for preperation of guidelines for election of Fellows (without examination).

The Council takes decision for construction of an Income Generating Hall in the space lying vacant in the south-east side within the campus of the College.

Bangladesh Medical and Dental Council is pleased to accord temporary recognition of the "Journal of Bangladesh College of Physicians and Surgeons ; as an indexed journal upto June 1985 as per memo No. BM&DC/4-D-84/250 dated 18-8-84. Publication in this journal will be accepted by the Public Service Commission as standard publications in the appointment of teachers for Medical Colleges.

Results of FCPS Part I/FCPS Part II/MCPS Examinations held in July, 1984.

FCPS Part I Examination : 136 candidates appeared in FCPS Part I examination in different subjects. Only 30 candidates passed.

FCPS Part II Examination : 75 candidates appeared in FCPS Part II examination in different subjects. Only 21 candidates passed.

MCPS Examination : 38 candidates appeared in MCPS examination in different subjects. Only 8 candidates passed.

Details of the Successful Candidates.

FCPS Part II.

Sl. No.	Roll No.	Name	Subject.
1	16	Dr. Pradip Ranjan Saha	Medicine
2	17	Dr. Mulkuter Rahman	Medicine
3	18	Dr. Md. Abul Kashem Khadaker.	Medicine
4	19	Dr. Mustafizur Rahman	Medicine
5	24	Dr. A. B. M. Sarwar-e-Alam	Medicine
6	27	Dr. Md. Saidur Rahman	Medicine
7	29	Dr. Md. Khademul Islam	Surgery
8	33	Dr. Md, Mahbub-ul-Alam	Surgery
9	40	Dr. Kajal Kanti Chowdhury	Surgery
10	43	Dr. Abul Khair	Surgery
11	48	Dr. Md. Waheeduzzaman	Surgery
12	51	Dr. Md. Atiqur Rahman	Surgery
13	52	Dr. Md. Abul Kasem Pramanik	Surgery
14	54	Dr. A. F. M. Salim	Paediatrics
15	56	Dr Md. Badrul Alam	Paediatrics
16	58	Dr. Md. Abu Sayeed Miah	Paediatrics
17	61	Dr. Naila Zaman	Paediatrics
18	62	Dr. Khan Nizamuddin	Paediatrics
19	66	Dr. Sameena Chowdhury	Obst. & Gynae
20	69	Dr. S. K. Md. Abdul Mannaf.	Ophthalmology
21	71	Dr. Md. Faizul Islam	Ophthalmology

MCPS.

Sl. No.	Roll No.	Name	Subject
1	2	Dr. Md. Nurul Islam	Medicine
2	6	Dr. Moinul Islam Mahmud	Medicine
3	11	Dr. Syed Enamul Kabir	Surgery
4	13	Dr. Kazi Md. Ismail	Surgery
5	26	Dr. Golam Mohammad Zakaria.	Obst. & Gynae
6	32	Dr. Md Ali Akbar	Ophthalmology
7	37	Dr. A. K. M. Ghulam Mohammad.	Radiotherapy
8	38	Dr. Md. Mozibur Rahman	Forensic Medicine.

[*Continued from front inside cover.*]

Chapter of book :

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Chapter of book that is part of published meeting :

7. Natvig JB., Kunkel HG., Gedde-Dahl T Jr. : Chain sub-groups of G Globulin, in Killander J (ed) : Gamma Globulins proceedings of the Third Nobel Symposium. New York, Wiley, 1967, pp. 37-54.
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