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2. Kilpatrick R M, Aseron CA: Radioisotope detection of Meckle's diverticulum causing intestinal bleeding, Z. Kinderchis 13, 310-217, 1973.

(See page 26)

ORTHOPAEDICS IN BANGLADESH—AN OUTSIDER LOOKS INSIDE

Geoffrey Walker

Key words :
Orthopaedics, Development.

During a discussion on the future of outside help for the orthopaedic services in Bangladesh, Professor Ali Ashraf, current President of the Bangladesh College of Physicians and Surgeons—kindly said that it might well be appropriate for me to write down something of the history of the orthopaedic service since Independence, and give my thoughts on its future.

My qualification for this rather daunting task is that I have been involved with the Rehabilitation Institute & Hospital for the Disabled (RIHD), and the associated orthopaedic training scheme since its inception in 1972. Since then I have made six further visits, and in all have spent over six months in this country. A short time in some respects, but the frequency of my visits has allowed me to appreciate the progress that has steadily occured, as well as some if not all of the problems, both past, current and for the future.

Dr. Geoffrey Walker, has been involved in the development of RIHD, since its inception—Editor.

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In 1972 soon after Independence the Bangladesh government appealed for international assistance to tend the wounded freedom fighters, and in particular to help with the estimated 10,000 soldiers who had lost limbs. In response to this appeal Dr. Ron Garst arrived with colleagues from Ludiana in Central India, and in his usual dynamic fashion soon had a 150 bed unit functioning in the old Sher-e-Bangla Hospital. After a preliminary visit by Mr J N Wilson MCh, FRCS, then Orthopaedic Adviser to the UK Overseas Development Administration, I spent five weeks with Dr. Ron Garst during October and November, 1972. By that time the hospital was functioning well, and Dr. Garst had established excellent workshops producing high-quality artificial limbs, as well as initiating active physiotherapy and occupational therapy. He appreciated that with only one or two overseas-trained Bangladeshi orthopaedic surgeons available, it was imperative to create an orthopaedic training scheme if the future of orthopaedic surgery was to be assured. Together with the assistance of Bangladesh general surgeons who had received their training in UK, I was able to introduce an element of UK training into Dr. Garst's excellent scheme, which he soon managed to have approved by Dhaka University. This comprised a three year course leading to

the Degree of MS (Orthopaedics) and a two year course for a Diploma in Orthopaedics (DO). We all agreed that a period of active general surgical training had to be incorporated within these periods, and in any case accepted that the three years required for the Mastership was 12 months longer than was necessary either in India or Pakistan. While the concept of the Diploma to produce capable general orthopaedic surgeons at that time seemed appropriate, it does appear to have led to difficulties over the years, particularly with the apparent lack of promotion prospects.

The first batch of trainees was soon selected and in fact five had graduated with the MS and two with the Diploma in 1976 when I returned for my second vlstit. During the preceeding year or two Dr. Garst had realised that the Sher-e-Bangla site was inappropriate for further expansion, and with the agreement and support of the Bangladesh government he started a major project which resulted in the building and opening of the Shaheed Shuhrawardy Rehabilitation Institute & Hospital for the Disabled late in the 1970s. The government insisted that part of the building should comprise a children's hospital, and originally this and the orthopaedic section were to share common services such as radiography and pathology. When I returned in 1980 the new hospital with its 400 orthopaedic beds and six operating theatres was functioning well, but there had been an unfortunate separation between the RIHD and the Shishu (Children's) Hospital which alas has never been overcome. Separate service departments had to be created and while the Shishu Hospital is run by a board of trustees, the RIHD continues as a direct government institution. This in itself has led to difficulties with maintenance and the expansion of the service departments. All this time the training of orthopaedic surgeons continued and I have been involved in this, and in the early days with examininig, during my visits every two years since 1980. Of course there have also been visits, fairly regularly, by other UK based surgeons and the name of Arthur Eyre-Brook—past President of the British Orthopaedic Association must be well-known to many of you. He has spent a total of two years helping at the RIHD, and although now unable to accept further overseas assignments, still maintains an active interest in the RIHD, its activities and its graduates. There have also been a series of visits from Orthopaedics Overseas, the US Group of World Orthopaedic Concern, and by orthopaedic and other medical, surgical and anaesthetic specialists from many countries.

It is of interest to consider the success of the orthopaedic training scheme established by Dr. Garst. As far as I have been able to determine (January 1988) 26 have obtained the MS Orthopaedics, and 25 the Diploma. Of the latter several have then proceeded to the Mastership and the total number is thus 51. Of these currently 12 are abroad (including one from Nepal) leaving 39 in Bangladesh trained at the RIHD. In addition there are three orthopaedic surgeons with the FRCS and three with the FCPS making a grand total of 45 to serve the current Bangladesh population of approximately 100 million people. Currently at the RIHD there are 39 postgraduate students (including three from Nepal), 31 preparing for the MS (Orthopaedics) and eight for the Diploma. Eleven are sitting

the Mastership examination at present (January 88) but alas only four of these are "competing" for the first time. While I appreciate that the University and other authorities are anxious to maintain and indeed improve standards, the current low success rate in the specialist qualifying examinations should perhaps be reconsidered. It seems to me that if students are appropriately selected, and then properly trained, at least 80% should pass their examination at the first attempt.

It was Dr. Garst's original plan to have at least two qualified orthopaedic surgeons in each of the medical college hospitals, and also in each of the district hospitals. This of course depends on the government creating appropriate posts, and then administrators and 'medical' colleagues ensuring that their newly appointed orthopaedic colleagues have a fair share of the available beds, operating time and other necessary facilities. Six of the current eight medical college hospitals, as far as I know, have at least two relatively senior orthopaedic surgeons, together with some supporting junior staff. Our success in establishing orthopaedic services at district hospitals has perhaps been less successful although there are and have been notable exceptions. I was very sad to learn soon after my arrival in Bangladesh for this current visit that six appointments for orthopaedic surgeons in district hospitals have recently been 'cancelled'.

We all have to face the accepted fact that at least one third of surgery now comprises orthopaedics and trauma, and that trauma of the limbs and of the pelvis and spine is the province of the orthopaedic surgeon. While there is no doubt that in the past general surgeons have indeed been truly general, all specialities continue to advance, and in fact orthopaedics itself is now seeing the formation of sub-speciality groups in the more developed parts of the world. The epidemic of road traffic accidents which assails every developing country as soon as it is rich enough to build a road and import motor vehicles is certainly continuing to increase rapidly and to spread throughout this country. So much so that Dr. Garst's original concept of a pure orthopaedic hospital has unfortunately had to be severely modified. While originally we hoped that trauma would continue to be managed at Dhaka Medical College Hospital, with elective and cold orthopaedics at the RIHD, it was soon evident that accident patients were arriving at the RIHD, and Dr Garst in his inimitable fashion then created an active although originally small "casualty" department. This need has steadily expanded, and currently about 80% of patients at the RIHD have Problems arising from trauma, many of these from road traffic accidents. Not only does this reduce significantly the facility to cope with the many patients throughout Bangladesh in need of reconstructive surgery and rehabilitation, but it also lessens to a significant and very worrying extent, the amount of "clinical material" available for teaching the post-graduate orthopaedic students. There are plans, I believe, to build a further 100 bed accident unit at the RIHD, and if this transpires perhaps more elective surgery can then be undertaken. However, it seems very likely that a set proportion, perhaps 50% of the grand total, will have to be reserved for elective cold orthopaedics.

It must now be apparent that within Bangladesh, very largely as the result of the efforts of Dr. Garst, there are several orthopaedic surgeons of at least associate professor rank and with ten or more years of orthopaedic experience. Most of them have made appropriate visits abroad but alas from talking with these old friends it is apparent that their abilities, and in fact the vital steady expansion of the orthopaedic service is not yet fully apprciated. The separation of orthopaedics from general surgery occured in the United Kingdom some 40 years ago, but alas there is still opposition here to this concept among some senior general surgical colleagues, and possibly administrators. Alas patients still arrive late at the RIHD from major medical institutions throughout the country staffed with orthopaedic surgeons, but never having had the advantage of consultation or assistance from these experts. This is most disheartening to all concerned but also focuses some attention on the problems of orthopadedic staffing in Bangladesh medical institutions when compared to the staffing ratios of other specialities.

It seems usual at post-graduate institutes and medical college hospitals for general surgical units of about 25 beds to have at least one if not two surgeons ranking either as full professor or associate professor. There will also be assistant professors and more junior supporting staff. The contrast between the orthopaedic staffing at some of the medical college hospitals, and at the RIHD must cause great concern. At some medical college hospitals senior well-trained orthopaedic staff may have units of as few as 17 beds, and very limited operating time. In other colleges orthopaedic surgeons have been more suceessful over the years in establishing units of reasonable size and with reasonable facilities although the availability of appropriate supporting staff can be poor. This contrasts markedly with the present situation at the RIHD which with its 400 bed complement has one of the two full orthopaedic professors in the country. Currently also there is one associate professor and six other trained staff of assistant professors or lecturers. As is widely appreciated the full professor also accepted in 1981 the mantle of Project Director, a post created originally and personally for Dr. Garst. This role over the years has become so enormous that it is truly beyond the capability now of any one human being. It invovles day to day administration of a 400 bed hospital with an active out-patient and an accident service, together with responsibility for the clinical services and perhaps even more important for the day to day teaching and training of the post-graduate students, and all in a 6 1/2 hour day. It is not surprising that the very necessary research and resulting publications expected from a University department and Institute have not as yet been forthcoming although the MS (Orthopaedics) does require production of a thesis.

With clinical work at the RIHD is split amongst three firms, each of these has responsibility for more than 130 beds. Efforts are in hand to improve this staffing, and I am delighted to hear that the Health and Manpower Planning Committee in 1987 received evidence from the Bangladesh Orthopaedic Society, and I gather, accepted the recommendation to create two new professors, one new associate professor

and three new assistant professsors at the RIHD. Personally I would like to see at least six senior and experienced orthopaedic surgeons of either full professor or the equivalent (if a new consultant grade can be created) at the RIHD. There should also be at least a similar number of associate professors and a minimum of 12 assistant professors. There would also be room for orthopaedic surgeons without university appointments but with perhaps interests in research and particularly the development of techniques and apparatus appropriate for the conditions current in Bangladesh. This should be achieved slowly—but not too slowly—as experienced orthopaedic surgeons become available. It would allow 'firms' with manageable numbers of beds.

While in the past it has been felt that all trained staff at the RIHD should share equally the clinical load, thus doing away with super specialisation, there are now enough graduate orthopaedic surgeons in this country to allow the change of direction so necessary to improve and develop standards of care for specific problems. Pairs of trained orthopaedic surgeons at the RIHD should be given the responsibility for establishing clinics dealing with special problems such as congenital club feet, congenital dislocation of the hip (which is not that rare in Bangladesh), bone tumours (particularly the only too common osteoclastomas), Volkmann's contractures and so on. Students would rotate during their two or three year spell at the RIHD and thus gain experience in all these speciality clinics. All the surgeons should of course continue with their share of general orthopaedics and general trauma.

As is only too well known throughout the Bangladesh medical world, all postings and medical staffings are controlled by the Ministry of Health, with seemingly no pattern or longterm planning and commitment; much unhappiness, inefficiency and resignations result. I believe that two steps should be taken to remedy this most unsatisfactory state of affairs.

The post-graduate medical institutes, and probably the medical college hospitals need and deserve some measure of autonomy, both in regards to staffing and also to budgetory control. This would instill a sense of responsibility and should produce beneficial results and greater efficiency.

I would also like to see much stronger medical advisory machinery, both at hospital and institute level, but even more important, at the top where the medical directors and Ministry would be in constant rapport with an advisory committee comprising representatives of all specialities, elected from within each field, and probably itself electing its Chairman. It would have to be seen to act impartially, and in the interest of the general population.

It would also be very helpful if much greater co-operation occured between the RIHD and the other medical institutes and hospitals in Dhaka. Particularly with both directions with surgical and orthopaedic training.

While in some specialities, a one to one relationship between doctor and patient is essential, this is perhaps not quite so true in orthopaedic surgery where much of the routine work can be very adequately managed by trained personnel including

paramedical colleagues. This is particularly true for physiotherapy, and it remains sad that the current state of physiotherapy at the RIHD is disappointingly low. Dr. Garst established training schemes in the past, and I gather that these do continue regularly. However, the trained therapists apparently do not remain at the RIHD, and the absence of physiotherapy on the wards and for out-patients is deplorable.

Orthopaedic surgeons cannot function without adequate radiological support. While there are obvious problems with the supply of electricity, films, and chemicals, high level radiology is being practised within Dhaka city so "it can be done". Dr. Garst established orthopaedic workshops of high standard soon after his arrival in this country, and trained something over 40 technicians. Alas no posts were created for these experts and the majority are now either in industry or abroad. It is unfair to be critical in any way of Dr. Garst's monumental efforts, but his workshop and artificial limb service did require the use of imported materials. Their supply has been difficult and irregular since his departure, but it was most interesting to me on a recent visit to Bombay to see a really excellent All-India orthopaedic workshop sited alongside the children's orthopaedic hospital. This produces 200 articles each month, and uses only materials available within India. They are now beginning to experiment with resins, and these too are made in that conntry. There is a very great need still for artificial limbs, calipers, wheelchairs and other appliances and there are keen Bangladeshi orthopaedic surgeons with an interest in this subject.

There is a constant shortage of orthopaedic implants, implements and instruments, although these can be obtained commercially from India. While visiting surgeons from abroad try to arrive with supplies of appropriate implants and other apparatus there are now adequate facilities within Bangladesh to produce locally many appropriate articles. With a colleague from the RIHD I recently visited the Bangladesh Machine Tool Factory (BMTF) some 40KM north of Dhaka. This enormous plant houses over 1,000 machine tools. Although these are 20 years old, it should be possible with appropriate enthusiasm and some technical assistance to produce many if not all of the necessary implants and instruments. This has been a project dear to my heart for many years, and I was really delighted both to visit the BMTF, and to be received with enthusiasm by the engineers. However, I was surprised that its existenee was not better known amongst the medical and surgical fraternity.

Turning once more to the problems of research at the RIHD. While the MS students have produced interesting theses as yet there have been no long term prospective studies. I appreciate the very great difficulties with this sort of work, particularly as patients fail to attend regularly for review. Be that as it may as yet we do not even have knowledge at the RIHD of the incidence of orthopaedic disease and problems in Dhaka, let alone throughout Bangladesh. I have instituted a very small research during my current visit, and I hope the result may form the basis of a further short communication. While it may be difficult to establish *pure* research at the RIHD, at least until the supporting services

of radiology and pathology are improved, thought should now be directed toward the development of techniques and apparatus appropriate for the conditions prevailing in Bangladesh ; in the orthopaedic world everyone knows the "Jaipur Foot". Attempts are being made to develop an external fixator to immobilise fractures, and perthaps colleagues at the BMTF can help here too.

All this philosophy raises very great questions. With 50 trained orthopaedic surgeons available in Bangladesh, and a further 10 in the Middle East who at some stage will probably return, does this country still need assistance from abroad? For 15 years the Overseas Development Administration of the UK government has arranged visits primarily aimed to assist with teaching of post-graduates. We have also been able to supply a small amount of orthopaedic material. The US Group of World Orthopaedic Concern likewise has been involved with teaching, and I know from their secretary Dr. Jim Cobey that he together with Dr. Garst are trying to revitalise their potential assistance. While it is obvious that the orthopaedic fraternity within Bangladesh is anxious to stir the government and indeed colleagues towards improving the orthopaedic service, it is clear to me that at least for the foreseeable future the orthopaedic service in Bangladesh will continue to need and to benafit from outside help. From the UK this may involve a slight "change of direction". It seems probable that a link at university level may be established, and it is hoped that this will lead to an improvement in the standard of teaching, as well as provide support for the infrastructure at the RIHD and its potential academic activities, From the personal angle I hope that further UK support will include visits by those of us who in the past have visited the RIHD and been involved in both teaching and examining.

At this point perhaps I should mention the thorny question of visits overseas by Bangladesh orthopaedic surgeons who have otherwise been trained exclusively in this country. I, and my colleagues in World Orthopaedic Concern, an organisation interested in improving orthopaedic training and service in the developing world, believe that while the great majority if not all of the basic post-graduate training in orthopaedic surgery should be conducted in the doctor's own country, and thus on the prevalent diseases and with the conditions and facilities available, there is no doubt that visits of a few months duration to carefully selected institutions in other parts of the world can be of great value. Virtually all the senior Bangladesh orthopaedic surgeons have in fact benefited greatly from this experience, and in particular I am delighted that two have recently spent time in Hong Kong, and a further two in Singapore. Both of these orthopaedic units attract patients with the sort of problems encountered in Bangladesh, as well as undertaking sophisticated orthopaedic work. I believe that they have much more to offer a Bangladeshi orthopaedic surgeon than a visit either to the UK or to the United States. While I gather from general surgical colleagues in the developing world that general surgery as an entity remains very similar in less and more developed areas, the same is certainly untrue in orthopaedics. In the UK our practice is now largely confined to bunions, backache, total joint replace-

ment, and the operative management of fresh fractures which present soon after they occur. We do not see skeletal tuberculosis, the late ravages of polio-myelitis, and open fractures presenting late, often virtually untreated. To train in the UK or United States a Bangladesh doctor as an orthopaedic surgeon and then expect him to return to Bangladesh is probably to no ones real advantage although currently there are exceptions in this country who certainly do not agree entirely with these sentiments.

Finally, I would like to stress the importance of exposing medical students to orthopaedics, and ensuring that they make the most of this opportunity by including orthopaedic surgeons among examiners for MBBS examinations and always having at least one orthopaedic question in the surgery paper.

This has been rather a long dissertation of the thoughts of one person. However, in many respects they do represent the views of those of us in World Orthopaedic Concern, and I know that also they cover many of the points frequently raised by Bangladeshi colleagues during informal discussions. My colleagues and I, both within and outside World Orthopaedic Concern remain available to help in every way that they are able.

CLINICOPATHOLOGICAL STUDY OF FIBROCYSTIC DISEASE OF BREAST AND ITS CORRELATION WITH BREAST CANCER IN SAUDI WOMEN

Ahmed Mokhtar[1], Hassan Raffa[2], Ahmed Bedeiwy[3]

Key words :
Fibrocystic disease, Breast cancer.

Summary :
One hundred & twenty four cases of documented fibrocystic disease of the breast were biopsied, studied histopathologically and grouped accordingly into three groups. The first characterised by lymphocytic infiltration in the lobules or by lobular fibrosis, the second by adenosis and fibrosis, and the third by hyperplastic and metaplastic changes with cyst formation and atypical hyperplasia. The frequencies of these histologic groups in breast cancer were studied and correlated to breast adenocarcinoma in 40 cases in which the predominant Group III with hyperplastic and metaplastic changes, cyst formation and atypical hyperplasia was found and is, therefore, an indicator of eminent malignancy.

Introduction :

Fibrocystic disease of the breast is a very common disease and occupies a major position in surgical practice, yet little is known about its aetiology and pathogenesis. Furthermore, the relation of this disease to carcinoma of the breast is a subject of much dispute. Much evidence suggests its relation to carcinoma[3,7], while others have denied the existence of such an association[9]. Histopathologic studies which might help in the understanding of the disease are scanty. Surgeons and Pathologists are deprived of established diagnostic indices which would facilitate communication and which in such a study are mandatory.

The present work is a histopathologic study from which we hope to make a strong plea for a classification which would be of clinical, as well as pathologic, significance.

Material & Methods :

One hundred & twenty four consecutive breast biopsies were examined histopathologically and proved to be negative for carcinoma of breast. These were correlated to 40 cases of histologically proven infiltrative carcinoma of breast. The specimens from both groups were subjected for gross and histological examination. The sections were stained with H & E, Alcian Blue and P A S.

The 124 cases of fibrocystic disease were classified into 3 histological groups

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based on the predominance of the pathologic lesion present which were lobular with lymphocytic infiltration, fibrosis, hyperplasia, metaplasia, atypical hyperplasia and cyst formation. Thus, Group I is characterised by lymphocytic infiltration and stromal reaction, the second by fibrosis and adenosis and the third group by hyperplastic and metaplastic changes, cyst formation and atypical hyperplasia. It is obvious that rarely will the predominant pathologic lesion consist entirely of only one of the changes described above.

Patho-Histological Analysis :

Group I : Stromal Reaction—There is early perivascular and periductal lymphocytic infiltration in normal appearance lobules with degenerative changes in ductular epithelium. Lobular segmentation and intralobular fibrosis are seen in advanced cases. Cystic spaces are uncommon findings and do not attain significance in either size or numbers. Extensive fibrosis may lead to loss of lobular pattern.

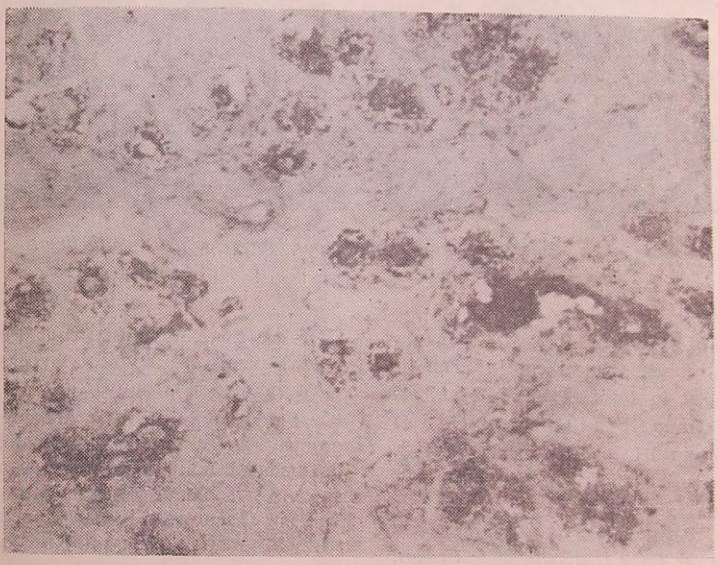
Fig.—1.

Group I : *Fibrosis and stromal reaction.*

Group II: Fibroadenosis—This condition is characterised by hyperplasia of both the glands and ductal element of the breast leading to an increase in the number of glands arranged in lobular pattern or diffuse proliferation. There may be epithelial overgrowth but it is of the normal non-metaplastic epithelium.

Group III : Hyperplastic-Metaplastic changes—Ductal proliferation is evident. Aggragated glands may show back to back arrangement with proliferation of the lining epithelium, the latter frequently showing metaplasia into apocrine or mucus cells. Some cystic dilatation of the duct may be present. Fibrosis is not marked.

Fig—2.



Group—II : *Fibroadenosis, duct proliferation and fibrosis.*

Clinical Data :

The mean age of Group I (28 patients = 22.5%) was 28.3 years, Group II 74 patients = 59.6%) was 36.8 years Group III (22 patients = 17.7%) was 41.4 years. When lesions are studied by decades, the peak incidence in Group I is in the 3rd decade, while for the other two lesions it is in the 5th decade.

Fig—3.

Group—III : *Duct proliferation with apocrine metaplastic epithelium.*

Frequency of Cysts :

Cysts larger than 1 cm in diameter were present in Group I only in 2 patients (7%), in Group II in 10 patients (13.5%) and in Group III in 10 patients (45.4%).

Table I : *Frequency of Epithelial Hyperplasia in the Three Histopathologic Groups.*

Group	Epithelial Hyperplasia No. of Patients	%	Atypical Hyperplasia No. of Patients	%
I	—	—	—	—
II	13	17.5	1	1.3
III	15	68	2	9

Cysts are, therefore, most frequent in Group III. Typical and atypical hyperplasia is most marked in Group III.

Frequency of the three histologic lesion groups was reviewed in 40 patients with documented infiltrative breast cancer and shown in Table II where it is evident that the 75% of cancerous lesions were associated with Group III histopathological features.

Table II : *Frequency of the 3 Histopathological Groups seen in patients with documented Breast Cancer.*

Group	No. of Patients	%
I	2	5
II	8	20
III	30	75

Discussion :

Histopathological features of 124 cases of fibrocystic disease of breast revealed various microscopic changes varying from mild changes in the form of intralobular lymphocytic infiltration and fibrosis, to complete loss of the normal lobular pattern with hyperplastic and metaplastic changes, which raises the question of whether these changes are stages of one disease or do they represent different types of diseases. The answer to this question is still unclear.

In Group I, lymhocytic infiltration was observed in the early phases in the normally appearing lobules. This raised the possibility of autoimmune reaction as a possible aetiological factor which needs further study.

Foote & Stewart[4] referred that this lymphocytic infiltration is preceeded in every case by other changes, namely stasis of amorphous acellular and cellular duct content, dilatation of the duct wall and varying degrees of atrophy of periductal myoid tissue. Whether this lymphocytic infiltration proceeds to fibrosis, we do not possess any evidence of that at this stage. The possibility that this fibrosis may be the result of an ageing process is excluded by the study of Foote & Stewart[4]. Haagensen[5] showed the presence of large number of lobules in breasts of women far beyond the age of menopause, while Vassar & Culling[11] have shown a marked lobular atrophy in breasts of young women. The occurrence of fibrocystic disease in young women convinced Haagensen[5] that its aetiology is possibly a hormonal disturbance which stimulates fibroblastic proliferation, which was agreed upon by Minkowitz et al[6].

The advanced fibrotic stage of Group I resembles the fibrous disease described by Haagensen[5]. In his study, the pathologic changes occurred with a mean age of 40 years, while the mean age in our series was 28.3 years.

Type II constitutes 59% of all cases and is distinguished from the extensive fibrotic cases of Group I by the presence of adenosis in Group II, which is lacking in Group I, in which the ductus are atrophied.

Group III differs from Group I and Group II by a variety of tissue changes. This variety includes the highest incidence of cysts (45.5%). Cysts can be due to obstructive causes[2], hormonal dysfunction[8], due to compression by fibrosis[10] or due to unfolding of lobular units[11].

In our series 75% of breast cancers were associated with histopathological changes of Group III and it indicates the link of this group to breast carcinoma. We think that metaplastic hyperplasia which occurs in Group III is related to malignant transformation, especially so if the metaplasia is associated with atypical hyperplasia and, therefore, we believe that there is a definite relationship between breast cancer and Group III of histopathological changes seen in fibrocystic disease, but at this stage it is difficult to estimate what percentage of fibrocystic disease Group III will develop breast carcinoma as the lesions were removed surgically and follow-up would be impossible.

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STUDIES ON THE CAUSATIVE AGENTS OF CHRONIC SUPPURATIVE OTITIS MEDIA IN ADULT POPULATION

A A M Abdullahel Baqui[1], K M Rahman[2]

Key Words :
CSOM, Bacteria, Antibiotics

Summary :

A microbiological study of Aural Swabs collected from 29 adult patients clinically diagnosed as chronic suppurative otitis media was carried out. All together 46 bacteria and 3 fungi were isolated. Genus corynebacterium was found in highest number (44.88%) of cases followed by genus pseudomonas (41.37%) and genus staphylococcus (31.03%). Ps. aeruginosa was found to be the most common species of organism (34.48%). Nontoxigenic strains of Corynebacterium diphtheriae (mitis) were also isolated from 3 cases. In about 59% cases multiple organisms and in 38% cases single organism were isolated. The antibiotic sensitivity pattern showed gentamicin to be the most sensitive drug against both gram-positive and gram-negative bacteria. Of the fungus isolated 2 were C. albicans and 1 was Aspergillus fumigatus.

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Introduction :

Microbial infections of the middle ear are fairly common in ENT practice in Bangladesh[16]. About 2.5% of general population in India suffers from this disease[21]. About 66% of all conductive deafness and 1.5% of all speech disorders were found to be due to this disease[21]. In Bangladesh information on actiological agents of chronic suppurative otitis media (CSOM) and their antibiogram are insufficient. The present study was undertaken with the objectives of (1) prevalence of different aetiological agents of CSOM in adult population and (2) antibiogram study of the organisms isolated.

Materials and methods :

Aural swab samples from 29 chronic suppurative otitis media (CSOM) patients (aged 15-60 yrs) attending the ENT Out Patient Departments (OPD) of Dhaka Medical College Hospital (DMCH) and Institute of Post Graduate Medicine and Research (IPGMR), Dhaka were collected. Samples from DMCH were transported to our laboratory in Amies transport medium and inoculated into different culture media within 3-4 hours of collection. Samples collected at the IPGMR were directly inoculated into different

culture media within half an hour of collection. All the samples were inoculated into blood agar, blood tellurite agar, MacConkey's agar, chocolate agar, Sabouraud's dextrose agar and cetrimide agar media and all except Sabouraud's agar media were incubated at 37° C for 24-48 hours. Sabouraud's dextrose agar media was incubated at room temperature and examined daily for fungal elements for upto 3 weeks. In case of chocolate agar media in addition candle extinction jar was used which provided about 5% CO_2.

From each type of colony gram staining and micoscopic examination was done and subculture was made for pure growth from where organisms were stocked for biochemical tests done by standard methods[9,10,23]. Identification of all the isolated organisms were made according to the criteria described in Bergey's manual of systemic bacteriology[19]. All the isolated *C. diphtheriae (mitis)* were tested for in-vitro toxigenicity test by modified Elek's method[5]. The fungus when grown was identified from the colony morphology and microscopic examination[12].

All the bacterial isolates were tested for antibiotic sensitivity against penicillin (P), ampicillin (A), cloxacillin (Cl), chloramphenicol (C), tetracycline (T), gentamicin (G), kanamycin (K), cephalexin (Ce), streptomycin (St), carbenicillin (Ca) and nalidixic acid (Nx) by disc diffusion method[4]. Mueller-Hinton media in 120 mm Petri dishes and standard reference *Staph. aureus* ATCC-25923, *Esch coli* ATCC-25922 and *Ps. aeruginosa* ATCC 27853 were used for antibiotic sensitivity test.

Results :

Results of th's study are shown in table I-III. Of the 29 patients 15 were males and 14 females. 49 micro-organisms (46 bacteria and 3 fungi) were isolated from 28 specimens and in one specimen no organism could be isolated. All together 8 different bacteria and 2 different fungi were found.

Table—I shows that single organism was isolated from 38% specimens and multiple organisms from 59% specimens.

Table—I *Occurrence of single and multiple organisms in 29 cases*

Micro-organisms	No. of cases	Percentages (%)
No growth of organism	1	3.44
Single organism	11	37.93
Double organisms	14	48.28
Triple organisms	2	6 90
Quadruple organisms	1	3.44

Various genus and species of gram positive and gram-negative aerobic bacteria and fungus were shown in table—II. From the table it is evident that *Ps. aeruginosa* is the commonest infecting agent (34.48%); the next in order of frequency are C. *hofmannii* (24.14%), *Staph. aureus* (17.24%) and *Staph. epidermidis* (13.79%). It is interesting to note that 3 mitis strains of C. *diphtheriae* were also isolated though we failed to show toxin production by in-vitro Elek's method.

Table—II *Different genus and species of organisms isolated from 29 CSOM cases*

Sl. No.	Organisms	Single infection No.	%	Multiple infection No.	%	Total incidence No.	%
BACTERIA :							
1.	Corynebacterium	—	—	13	100.0	13	44.83
	C. hofmanni	—	—	7	100.0	7	24.14
	C. diphtheriae (mitis)	—	—	3	100.0	3	10.34
	C. xerosis	—	—	3	100.0	3	10.34
2.	Pseudomonas	5	41.67	7	58.33	12	41.37
	Ps. aeruginosa	5	50.0	5	50.0	10	34.48
	Ps. maltophilia	—	—	1	100.0	1	3.44
	Ps. pickettii	—	—	1	100.0	1	3.44
3.	Staphylococcus	2	22.22	7	77.78	9	31.03
	Staph. aureus	2	40.0	3	60.0	5	17.24
	Staph. epidermis	—	—	4	100.0	4	13.79
4.	Klebsiella	2	50.0	2	50.0	4	13.79
	K. pneumoniae	2	66.7	1	33.3	3	10.34
	K. oxytoca	—	—	1	100.0	1	3.44
5.	Proteus	2	66.7	1	33.3	3	10.34
	P. mirabilis	1	50.0	1	50.0	2	6.89
	P. vulgaris	1	100.0	—	—	1	3.34
6.	Alc. faecalis	—	—	2	100.0	2	6.89
7.	Acinetobacter calcoacetious	—	—	2	100.0	2	3.89
8.	Citrobacter freundi	—	—	1	100.0	1	3.44
FUNGUS :							
1.	Candida albicans	—	—	2	100.0	2	6.89
2.	Aspergillus fumigatus	—	—	1	100.0	1	3.44
NO GROWTH OF ORGANISMS						1	3.44

Table—III shows the over all antibiotic sensitivity pattern of various bacteria isolated. It is evident that penicillin is ineffective to most gram-negative bacteria where as almost all gram-positive bacteria are sensitive to gentamicin. All bacteria are sensitive to carbenicillin except one *Ps. aeruginosa*, one *Ps. maltophilia* and one *K. pneumonoiae*. Similarly, all bacteria are sensitive to tetracycline except 50% of *Ps. aeruginosa* and one each of *K. pneumoniae*, *P. mirabilis*, *P. vulgaris* and *Ps. pickettii*.

Table—III *Antibiogram of the organisms isolated from 29 CSOM cases*

Micro-organisms	% of organisms sensitive to different antibiotics										
	F	A	Cl	C	Ce	St	Nx	K	T	G	Ca
Ps. aeruginosa (10)	0	0	0	0	0	40.0	0	10.0	50.0	90.0	90.0
Ps. maltophilia (1)	0	0	0	0	0	0	0	0	100.0	100.0	0
Ps. pickettii (1)	0	0	0	0	0	100.0	0	100.0		100.0	100.0
C. hofmannii (7)	100.0	100.0	71.4	100.0	100.0	100.0	14.3	100.0	100.0	100.0	100.0
C. diphtheriae (mitis) (3)	100.0	100.0	66.7	100.0	100.4	100.0	33.3	100.0	100.0	100.0	—
C. xerosis (3)	100.0	100.0	33.3	100.0	100.0	100.0	0	100.0	100.0	100.0	100.0
Staph. aureus (5)	20.0	20.0	100.0	60 0	100.0	80.0	20.0	100.0	100.0	100.0	100.0
Staph. epidermidis (4)	75.0	100.0	100.0	100.0	100.0	100.0	25.0	100.0	100.0	100.0	100.3
K. pneumoniae (3)	0	0	0	33.3	33.3	100.0	100.0	66.7	66.7	100.0	66.7
K. oxytoca (1)	0	0	0	100.0	100 0	100.0	100 0	100.0	100.0	100.0	100.0
P. mirabilis (2)	0	100.0	0	100.0	100.0	100.0	50.0	50.0	50.0	100.0	100.0
P. vulgaris (1)	0	0	0	0	0	0	0	0	0	100.0	100.0
Alo. faecalis (2)	0	0	0	100.0	50.0	100 0	50.0	50.0	50.0	100.0	100.0
Acinetobacter calcoaceticus (2)	100.0	1.000	0	100 0	0	100.0	100.0	100.0	100.0	100.0	100.0
Citrobacter freundi (1)	0	0	0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note : P — Penicillin, A — Ampicillin, Cl — Cloxacillin, C — Chloramphenicol, Ce — Cephalexin, St—Streptomycin Nx — Nalidixic acid, K — Kanamycin, T — Tetracycline, G — Gentamicin, Ca — Carbenicillin.

Discussion :

Chronic suppurative otitis media (CSOM) is generally refractory to treatment. The study of the organisms commonly associated with chronic suppurative otitis media is necessary to plan a general pattern of treatment for the average patients with a discharging ear.

In the present study single organism was found in 39.93% cases where as multiple organisms were found in about 59% cases (Table—I). This is in accordance with the findings of Lakshmipathi and Bhaskaran[15], and Palva and Hallstrom[20]. Mixed infection in varying incidence were also noted by many workers[6,7,8,13,18,21]. The common occurrence of mixed infection may be explained from the anatomic point of view that the middle ear is connected with the pharynx through the eustachian tube, which is a rich source of bacteria. There may also be normal flora in the middle ear, which are yet to be explored[17].

In the present study, genus corynebacterium was isolated from highest number (44.83%) of cases followed by genus pseudomonas (41.37%) and genus staphylococcus (31.03%) (Table—II). But when the individual species of organism was considered *Ps. aeruginosa* was found in highest number (10) of cases of which 5 (50%) were single organisms and the remainings were along with other organisms. Bluestone[6] also found *Ps. aeruginosa* as the most common organism in cases of CSOM. The highest incidence (72%) of *Ps. aeruginosa* was found in Los Angeles, U. S. A[7]. These findings also conform with those of Arya and Mahapatra[3], Palva and Hallstrom[20], Ibekwe and Okafor[11], Coker et al[8], Tulsidas et al[24] and Nasr et al[17]. From Bangladesh, Amin and Chowdhury[1] reported pseudomonas as the commonest, where as Karim[13] found staphylococcus followed by pseudomonas as the commonest organisms in their cases.

In the present study *C. hofmannii* was isolated from 7 (24.14%), non-toxigenic *C. diphtheriae* (mitis) from 3 (10.34%) and *C. xerosis* from 3 (10.34%) cases. All the corynebacterias were found as a part of mixed infection. This is in accordance with the findings of Tulsidas et al[24] and Lakshmipathi and Bhaskaran[15] who found corynebacteria (diphtheroids) in 10.92% and 16.1% of their CSOM cases respectively and all of them were found in mixed infection. There are other reports of isolation of similar bacterial flora from CSOM specimens[7,20,21]. However, the above workers did not try to differentiate species of corynebacterium. None of the two earlier studies in Bangladesh[1,13] found any corynebacterium their samples because they did not look for it. Thus the occurrence of these organisms, almost always in mixed infections indicate that these organisms which are normal commensals in throat and external ear and are of low virulence, are able to invade the middle ear only in association with some other organisms suggesting some sort of symbiotic mechanism of infection. But further studies are needed before making a conclusive comment.

Staph. aureus was found to be the third common aetiological agent isolated in the present study and they are isolated from 5 (17.24%) cases of which 2 were found as single infection. This is similar

to the findings of Lakshmipathi and Bhaskaran[15] who isolated *Staph aureus* from 30 (12.1%) cases of which 26.7% were found as single infections. But contrary to our findings, Karim[13] reported of 46% *Staph. aureus* infections from his cases of CSOM. This indicates the tendency of change in bacterial flora of CSOM for which studies on bacterial flora needs to be done from time to time. Many other workers also reported *Staph. aureus* as the commonest aetiological agent in CSOM[11,17,22]. The frequency of *Staph. Aureus* in middle ear infection could be attributed to their ubiq itous nature and high carriage of resistant strains in the external auditory canal and upper respiratory tract.

In this study *Staph. epidermidis* was isolated from 4 (13.79%) cases all of which were found in mixed infections. This is in similarity with the findings of Rao and Jayakar[21] who found *Staph. epidermidis* in 21.6% of CSOM cases. Many other workers also found (*Staph. epidermidis* in a considerable number of CSOM patients [8,15,17,18,20,24]. Although coagulase negative staphylococci (*Staph. epidermidis*) are generally considered non-pathogenic, their association in CSOM cases can be attributed to the extreme lowering of resistance of middle ear. Under these circumstances they assume pathogenic role either singly or more often in combination with other organisms.

Klebsiella and proteus were isolated from 4 (13.79%) and 3 (10.34%) cases respectively. About 50% of klebsiella and 67% of proteus were found in mixed culture. There were reports available where klebsiella and proteus were shown to be the predominant pathogens in otitis media [3,6,8,20,21,22].

In the present study *Alc. faecalis*, *Acinetobacter calcoaceticus* and *Citrobacter freundi* were isolated from 2 (6.89%), 2 (6.89%) and 1 (3.44%) cases respectively. All were associated with other organisms. These organisms are usually less commonly associated with CSOM. Similar low incidence of these organisms were also observed by a number of other workers[7,8,20].

It may be that many of these organisms (such as proteus, klebsiella, pseudomonas, etc.) reside in the oropharyngeal flora as opportunistic pathogen and invade the middle ear through the eustachian tube during the period of lowered resistance. A higher incidence of *Ps. aeruginosa* infection may be attributed to its secondary invasion from external auditory canal through a defect in tympanic membrane as they are not the usual inhabitants of upper respiratory tract.

The variation in the rate of isolation of various organisms by different workers in the same or different locality may be explained by the fact that the use of different antibiotics has changed the organismal pattern in different localities eliminating the more susceptible ones by the antibiotic resistant organisms like *Ps. aeruginosa, proteus* etc.

Fungus was isolated from 3 (10.34%) cases of which 2 (6,89%) were *Candida albicans* and 1 (3.44%) was *Aspergillus fumigatus*. All the fungis were found in mixed infection. In Bangladesh, Khan and Rahman[14] found fungu in 8% of their CSOM cases where aspergillus was predominant.

There was no growth of any aerobic organism in 1 (3.44%) case in the present study which may be due to antibiotic treatment or that some bactericidal or bacteriostatic offect of the middle ear secretion inhibited the growth or organisms[22] or that there was viral anaerobic bacterial infection. Many other workers had the same findings[3,13,17,18,20].

The antibiogram of individual gram positive and gram negative bacteria isolated in the present study showed varying sensitivity pattern (Table—III). Antibiotic sensitivity results indicated that gentamicin was the most effective drug against most of the gram positive and gram negative organisms. All our gram positive organisms were found to be sensitive to tetracycline, kanamycin and cephalexin. This is in accordance with the findings of Coker et al[8]. In the present study as well as in those of others[15,17,21,24]. penicillin and its semisynthetic derivatives were found to be least effective or non-effective against most of the gram negative organisms.

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PATTERN OF ELECTROCARDIOGRAM IN HEALTHY BANGLADESHI ADULTS

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Key words :
Electrocardiography.

Summary :

Electrocardiography of 100 healthy adult volunteers were studied at IPGMR. 93 had normal heart rate, 4 had sinus bradycardia and 3 had sinus tachycardia. Sinus arrhythmias were also noted in 5 cases. PR interval varied from 0.10 to 0.20 second. The relationship of PR interval with heart rate was not significantly present in most cases. The QRS duration varied from 0.04 to 0.08 second. The maximum QTc interval was 0.40 second. Intrinsicoid deflection was 0.05 second in V_6 & 0.03 second in V_1 in all except 2 persons who had 0.05 second in V_1. The value of ST segment varied from 0.1 to 2.0 mm in precordial leads. Only in few cases 0.1 mm (ST segment) was recorded which was non specific. The mean height of P wave was 2.5 mm in limb leads and 0.12 mm in precordial leads. The width of Q wave varied from 0 to 0.05 second. Its depth was within 1 mm and less than 2 percent of R wave in the corresponding leads. R wave in V_5 and V_6 was dominant deflection with maximum 23 mm. Only one volunteer showed R in V_1 8.5 mm. Both upright and inverted T wave were noted in limb and precordial leads. The mean QRS electrical axis varied from -40^0 to $+90^0$

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Introduction :

One of the most difficult tasks which confronts the workers in the life sciences is to define a normal. The difficulty is compounded when the measurement to be made is affected by many variables which differ in importance from time to time. These remarks apply to the electrographer and to the normal electrocardiogram.

Some variables which affect the electrocardiogram are quite well known. They include phase of respiration, heart rate, recent ingestion of food, position and age of the subject[3]. Equalisation of the first four is usually achieved by recording the curve during quiet respiration with the subject in a basal state and usually recumbent effects of age are solved by devising norms of different age groups. Race is

another source of variability although in some, the cause is not understood. For example ST elevation and T inversion in precordial lead is noticed in black population as normal variant[2]. Other difficulties enter into the problem. One of these is the statisticians "Error of measurement" by which is meant that two different people measuring the same interval may get a different result. We have no data for our own population in general. We have tried to find out the normal values of various ECG parameters in this study.

The ECG is a laboratory test only and is not a sine qua non of heart disease diagnosis[2]. A patient with an organic disorder may have a normal ECG and a perfectly normal individual may show non specific electrocardiographic abnormality[6]. All too often a patient is relegated to the status of some electrocardiographic abnormality. On the other hand a patient may be given unwarranted assurance of the absence of heart disease solely on the basis of a normal ECG. So a continuous distinction is to be made between electrocardiogram and the normal heart. If this is not done it becomes exceedingly difficult to define the limits of the normal record.

With so many aspects of the problem to bedevil him, it is small wonder that the clinician has made no comprehensive statistically mature effort to define the normal electrocardiogram in our country.

So we feel the need for normal values of various electrocardiographic deflection, intervals and variation from those of western people.

Materials and Methods :

100 healthy adult volunteers consisting of 74 male and 26 female was studied at IPGMR, Dhaka in the year of 1980. The age varied from 18 to 60 years. The mean age was 25 years. All the volunteers were included in this study after thorough history taking and physical examination. Obese persons and pregnant women were excluded. No physical and mental abnormality was detected amongst them. The ECG were performed in basal condition and in empty stomach. Technical errors of various kinds were carefully guarded against. TTe tracings were reviewed by four authors independently and when any disagreement concerning a tracing was present it was reread in conference and a diagnosis was reached. For the purpose of recording different values we have followed "Ashman R Hull E : Essential of Electrocardiography 2nd ed McMillan, 1941" as standard.

A heart rate of 60 to 100 beats per minute is considered as normal sinus rhythm provided the pacemaker is in the sinoatrial node. Any rate below 60 per minute from the same pacemaker is designated as sinus bradycardia; a rate above 100 per minute is called sinus tachycardia.

The PR interval had been measured from the beginning of the P wave to the very first evidence of ventricular excitation (QRS complex) whether this be the beginning of Q, QS or R wave.

The duration of QRS recorded with the widest one found in any limb lead of the tracing concerned.

The QTc interval was measured from the beginning of the QRS complex to the end of the T wave. The longest QTc interval was recorded with great care taken to distinguish U wave from T wave. Those tra cings where U wave appeared,

a simultaneous recording of a lead usually from the precordium was taken in which the T waves were made for accurate differentiation.

The intrinsicoid deflection had been recorded from the beginning of Q or R to the peak of R wave in lead V_1 and V_6.

ST segment had been recorded from the J point (the point at which the QRS complex ends and the RS-T segment begins) to the onset of T wave. The variation of —0.5 to + 2 mm in precordial leads had been considered as within normal limit. The elevation or depression of ST segment was recorded in comparison with that portion the base line of which lies between the termination of the T wave and the beginning of the P wave (T P segment). or when related to the level of PR Segment.

P wave had been recorded in standard lead II and lead V_1. Its height and width had been measured.

Q wave had been recorded in lead I,aVL,V_{4-6} with a horizontal position or left axis deviation and in standard lead II, III, aVF with a vertical heart position or right axis deviation.

The voltage of upright deflection of R wave had been measured from the upper portion of the base line to the peak of the wave in the lead V_{4-6}.

The voltage of negative deflection of S wave had been measured from the lower portion of the baseline to the nadir of the wave in leads V_{1-3}.

The upright deflection of T wave had been recorded from baseline to the peak of the T wave in limb and chest leads.

The electrical axis (QRS axis) of the heart in the frontal plane were calculated using the QRS complexes in the standard L_1, L_2 and aVF (the normal QRS axis in adult lies in between 029° to 110°).

Results :

This study showed normal heart rate in 93, bradycardia in 4 and sinus tachycardia in only 3 volunteers. The bradycardia ranged from 50 to 60 and tachycardia from 101 to 120 beats per minute. Out of 100 volunteers 95 had sinus rhythm, only 5 had sinus arrhythmia and no junctional rhythm or other arrhythmias were noted.

Table I shows that the minimum PR interval was 0.10 second, maximum 0.20 sec. and mean 0.14 second. Out of 100 volunteers 66 had the PR interval varying from 0.12 to 0.15 sec, 23 had 0.6 to 0.10 sec, 7 had 0.10 to 0.11 sec and in 4 cases 0.20 sec. This table fails to show the short PR interval with rise of heart rate. Those 4 volunteers who had PR interval 0.20 second their heart rate was below 100 beats per minute.

The width of QRS complex was minimum 0.04 sec, maximum 0.08 sec. and mean 0.05 sec. We find variation of QRS interval directly with age and inversely with heart rate. Though the changes with age are significant, the changes with heart rate is not so much.

The QTc interval was found minimum 0.28, maximum 0.40 and mean 0.34 seconds. In this series no tracing showed superimposition of P and T waves, bundle branch block or ventricular arrhythmia. This series also showed the inverse relationship between QTc interval and the heart rate.

Table—1

PR Interval in Relation to Heart Rate and Its Values

Heart Rate	No. of patients	PR Interval in Second				Min	Max.	Mean
		0.10-0.11	0.12-0.15	0.16-0.19	0.20			
50—59	8	1	4	3	0			
60—69	19	3	11	4	1			
70—79	33	1	22	8	2	0.10	0.20	0.14
80—89	28	1	19	7	1			
90—99	9	0	8	1	0			
100—109	2	1	1	0	0			
110—129	1	0	1	0	0			
Total	100	7	66	23	4			

The intrinsicoid deflection in V_1 was recorded with minimum 0.01, maximum 0.05 and mean 0.02 sec. Only 2 volunteers had intrinsicoid deflection 0.05 sec. but QRS deflection were normal (0.08 sec). At the same time lead V_6 showed minimum 0.01, maximum 0.04, and mean 0.02 seconds. No tracing in this series showed two R waves (double intrinsicoid deflection).

Table II also shows that minimum ST segment was —1.0, maximum varied from + 0.75 to 2.0 and mean varied from 0.01 to 1.8 mm in the precordial leads. Those who had ST segment 1.0 mm did not have T wave flattening or inversion in any lead. The height of P wave in lead II was minimum—0.5 mm maximum 2.0 mm and mean 0.41 mm and in lead V_1 minimum 0, maximum 0.12 and mean 0.35 mm respectively. The width of the P wave in lead II was minimum 0, maximum 0-I6 and mean 0.08 sec respectively. In V_1 the width was minimum 0, maximum 0.12 and mean 0.05 second.

The width of Q wave in different leads showed mimimum 0 in all leads, maximum ranging from 0.03 to 0.25 sec in limb leads and 0 to 0.4 sec. in all precordial leads except V_6 where maximum was 0.05 second. The mean was 0 to 0.01 second in all leads. The relative size of deepest Q wave was paid attention for relationship with corresponding R wave (relative size). In this series we did not find Q wave more than 1 mm deep or more than 25% of corresponding R wave.

Table II shows mean value of R in leads V_4 to V_6 varied from 8.99 to 13.15 and minimum varied from 1.5 to 4.0 and maximum varied from 20.0 to 23.0 mm respectively. The minimum of R

Table—11

Value of Electrocardiographic Deflection in Different Leads

Lead No.	Cases	P Height			Q Height			Q Width			R			S			T			ST			PR			QTc		
		Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
I	100	—	—	—	0	2	0.23	0	0.03	00.52	1.0	10.5	4.77	0	4.5	0.90	1.0	3	1.48	1.0	0.25	0.09						
II	100	0.5	2.0	0.41	0	2	0.32	0	0.04	0.009	2.5	15.0	8.24	0	4,0	0.67	0.25	4.0	1.81	0.5	0.25	0.01	0.10	0 20	0.14			
III	100	—	—	—	0	2.5	0.35	0	0.04	0.008	0.75	11.0	4.47	0	5.0	0.57	1.0	4.0	0.42	0.5	0.5	0.04						
aVR	100	—	—	—	—	—	—	—	—	—	0.05	3.0	0.67	0	13.0	2.89	3.0	1.5	1.55	2.0	0.25	0.07						
aVL	100	—	—	—	0	3.5	0.31	0	0.04	0.006	0	9.0	1.67	0	6.0	1.29	0.2	2.0	0.57	0.25	0.50	0.01						
aVF	100	—	—	—	0	2.5	0.30	0	0.25	0.009	0.5	12.5	6.18	0	7.0	0.59	1.0	2.5	1.08	0.5	0.5	0.02						
V_1	100	0	0.12	0.05	0	0	0	0	0	0	0.25	8.5	2.82	0	1.5	6.29	1.0	3.0	0.69	1.0	1.0	0.02						
V_2	100	0	0	0	0	0	0	0	0	0	1.15	19.0	7.48	1.75	19.5	9.47	0.75	9.0	3.98	1.0	2.0	1.8				0.28	0.40	0.34
V_3	100	—	—	—	0	0.75	0.06	0	0.01	0.001	2.5	21.0	10.28	0	19.0	6.44	0	10.5	3.98	1.0	1.0	0.07						
V_4	100	—	—	—	0	3.0	0.32	0	0.04	0.005	1.5	23.0	13.15	0	15.0	3.73	0.5	7.0	3.18	1.0	1.0	0.03						
V_5	100	—	—	—	0	2	0.53	0	0.03	0.009	4.0	20.0	10.95	0	8.0	1.85	0.75	7.0	2.37	1.0	1.0	0.01						
V_6	100	—	—	—	0	2.5	0.53	0	0.05	0.01	2.5	20.0	8.99	0	6.4	0.72	0	6.0	1.81	1.0	0.75	0.01						

This Table is taken from Nomenclature and Criteria for Diagnosis of diseases of the Heart and blood vessels, fifth edition published by the New York Heart Association. It is based on normal data series studied by Kossmann and Johnston; Kossmann and Goldberg, Wilson and Nybour, Vaquero Limae and Limon; Deeds and Barner, Myers Klein Stofer, and Hiratzkar and Friedlander, Knesse de Nilo.

wave in lead VI was 0.25, maximum 8.5 and mean 2.82 mm. The R in V_1 was recorded as 8.5 mm only in one case but that particular ECG did not show any S wave in the corresponding lead. The minimum value of R in leads V_2 and V_3 was 1.5, maximum 21.0 and mean varied from 7.48 to 10.28 mm respectively.

In limb leads the mean value of S wave varied from 0.57 to 2.89 mm. minimum 0, and maximum varied from 4.0 to 13.0 mm. In precordial leads the mean varied from 0.72 to 9.47 mm minimum 0 and maximum was 19.5 mm. The S wave always showed good correlation with R wave in leads concerned.

The mean value of T wave in leads I, II and aVF were 1.48, 1.81 and 1.08 respectively, minimum was -1.0 in lead I and aVF, 0.25 mm in lead II and maximum 3.04, 4.0 and 2.5 mm respectively. In the precordial leads the mean value of T wave varied from 0.69 to 3.98 minimum varied from 1.0 to 0.75 and maximum was 10.5 mm respect.vely. In this series only 2 volunteers had simultaneous T wave inversion in leads III and aVF. No one had T inversion in leads I.aVL and V_5-V_6 simultaneously. Mean QRS axis varied from -29° to +90° except in two cases. In one case it was -30° and in another—40° respectively. The tracing where QRS axis was-40°, showed intrinsicoid deflection 0.05 sec. in V_1.

Discussion :

The age of 18 to 60 years was chosen primarily because this is the group commonly encountered in our day to day clinical practice.

The study shows normal heart rate in majority volunteers, only 4 had sinus bradycardia and 3 had sinus tachycardia. The ECG of a normal subject may show the four rhythms (normal sinus rhythm, sinus bradycardia, sinus tachycardia and sinus arrhythmias[5].) We have observed the fact. The PR interval is known to lengthen with age and shorten with rapid rate although there is difference of opinion regarding the latter. But our study fails to show any confirmation of the latter statement. In Ashman study the lower limit of normal is usually stated to be 0.12 second though exceptions are not infrequent and the maximum may be upto 0.20 second (possibly upto 0.22 second). In this study 7 cases had PR interval between 0.10 to 0.11 sec. Of those no one had tachycardia rather one had sinus bradycardia whose heart rate was 59 per minute. Similarly 4 cases had PR interval of 0.20 second who also did not have bradycardia or tachycardia.

The maximum QRS interval of normal adult is 0.10 sec. It is claimed that in a normal subject occasionally the QRS interval may be 0.11 second in V_2 and V_3. Possibly 3 per cent of normal subjects will show a QRS interval in excess of 0.10 sec. but most often an interval beyond this duration will be associated with disease of the heart[5]. But in this study none of the volunteers had QRS complexes more than 0.08 sec. There is no lower limit of QRS interval usually given though it is practically never less than 0.06 second in adult[5]. But we found 27 volunteers had 0.04 sec

and 10 volunteers had 0.05 sec. and rest had 0.06 to 0.08 sec. This series differs from the western studies in regard to QRS complex (in 37 cases the QRS was below 0.06 sec.).

The maximum QTc interval for any age or sex of a normal person is 0.42 sec. A value more than 0.42 sec should be described as prolonged QTc but may not be abnormal. We did not find this value above 0.40 second.

The intrinsicoid deflection in normal person should not exceed 0.03 sec in V_1 and 0.05 sec in V_6[1]. But we found maximum 0.05 sec in lead V_1 in only 2 cases. At this moment we can not comment on this point.

The standard value of ST segment varies from 0.5 to 2.0 mm in precordial leads. But in this study the minimum was recorded 1.0 mm. So only this ST changes without corresponding T wave changes are non specific. We did not find ST elevation which is a normal variant in black population.

This study well correlates with the Ashman value of the height and width of T wave.

The height and width of Q wave corresponds well with other studies of western world.

This study favourably correlates with standard value of R wave in V_5 and V_6. In one volunteer the R wave recorded in V_1 was 8.5 mm but there was no corresponding S wave. It might be due to right ventricular hypertrophy or partial right bundle branch block.

The maximum value of S wave in limb leads of Kossmann and Johnston's study[4,5] well correlates with our series but those of precordial leads widely varies. In that study the maximum was 39.2 mm minimum 0 and mean varied from 1.0 to 14.01 mm. This variation of the value is unexplained.

The value of S wave in this study favourably correlates with the standard. The value of T wave in this series both in limb leads and in precordial leads varied significantly from Kossman and Johnston's study[4,5]. They found mean value of T wave in lead I,II, and aVF were to be 2.20, 2.67 1.40 mm, minimum 0.5, 2.0, 0 mm and maximum 5.6, 5.5, 4.6 mm respectively. In precordial leads the mean varied from 0.84 to 5.16, maximum from 5.2 to 21.0 and minimum varied from 0 to 4.0 mm respectively.

Mean QRS axis favourably correlates with the standard except in two cases. Of these two, one showed mean QRS 40° and intrinsicoid deflection 0.05 sec in V_1 possibly that person had anterior hemiblock with partial right bundle branch block. It might be congenital in origin.

Conclusion :

The ECG is simply an investigation. The normal values varies with different factors including geographical variations and race. A true understanding of normal range and the normal variation of the ECG depends upon a basic understanding of both normal and abnormal cardiac electrophysiology. It should be remembered that ECG should be always interpreted in the context of the entire tracing in the light of the clinical history and physical examinations. The values of ECG given in text books are only a rough preliminary guide to the interpretation of ambiguous and border line tracings.

The present paper can not be regarded as the desired ultimate effort to find out the values of various electrocardiographic deflections and intervals in Bangladeshi adult but rather as baselire survey which may be immediately useful.

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CARDIOVASCULAR DISEASES IN A HOSPITAL POPULATION

M A Latif[1], A C Shaha[2]

Key words :

Cardiovasculur disease ; Incidence ; hypertension; Ischaemic heart disease ; Rheumatic heart disease.

Summary :

An analysis of hospitalised population with cardiovacular diseases in medical units of Sylthet Medical College Hospital (SMCH) for a period of one year is made to find out the prevalence and pattern of the disease. The incidence of cardiovascular disease is about 24·91%. Hypertension is the most frequent and accounts for 49.63% of cardiovascular diseases, Ischaemic heart disease (IHD) is the second most common cardiovascular problem (17·68%). Rheumatic heart disease (RHD) stands third in frequency (14·71%). Congenital heart disease constitutes only 1·34% of cardiovascular diseases. Miscellaneous conditions comprise about 16.64% and almost half of them are cor pulmonale.

Introduction :

Cardiovascular diseases are a major cause of preventable morbidity and premature mortality in Bangladesh. With control of communicable diseases, change of life style and increased longivity the problem is becoming increasingly serious.

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Since disease pattern has great geographical variation, it is essential to get an assessment to the problem prevailing in the country. A few surveys have been done on various aspects of cardiovascular diseases but hospital information is scarce[1-5]. This has prompted us to present here a clinical profile of cardiovascular diseases in a hospital population.

Materials and Methods :

An analysis of patients admitted with cardiovascular diseases in all the medical units of Sylhet Medical College Hospital in the year 1985 (Jan to Dec) was made. Patients with all types of medical ailments needing hospitalisation are admitted in medical units. These patients come from both urban and rural areas, and have variable socio-economic status.

The total number of patients admitted in all the medical units in 1985 was 3,484 and records of 2,702 cases were available for study. The records of the remaining 782 subjects were untraceable but these were uniformly distributed in all the medical units. A total of 673 patients were found to have been suffering from various cordiovascular diseases. Medical history and details of physical examination of these cases were studied. Results of routine haematologic tests, urinalysis chest x-rays, ECG and laboratory tests

were examined. Diagnostfic criteria for cardiovascular diseases was based on sound clinical, radiological, electrocardiographic and laboratory evidences.

Patients below 12 years of age were not included because such patients are admitted in paediatric units.

Results :

The total number of patients admitted with cardiovascular diseases in medical units was 673 in the year 1985. This constituted 24.91% of all admissions in these units. There were 500 males and 173 females (2·9:1). The age of the patients ranged from 12 years 107 years. Distribution of different types of cardiovascular diseases as seen in these 673 cases is shown in table I. Hypertension was present in 334 (49.63%), ischaemic heart disease in 119 (17.68%), rheumatic heart disease in 99 (14.71%, congenital heart disease in 9 (1.34%), and miscella neous conditions in 112 (16.64% patients).

Table—I

Incidence of different types of cardiovascular disease in SMCH (n = 673)

	No. of pts.	%
Hypertension	334	49 63
Ischaemic heart disease	119	17.68
Rheumatic heart disease	99	14.71
Congenital hear disease	9	1.34
Mise. conditions	112	16.64
Total	673	100

The age and sex distribution of 334 cases of hypertension is shown in table II. Most of the Patients is in 40-69 years age. There were 252 males and 82 females. Table III shows the nature and incidence of complications with which the hypertensives presented. About 42·30% of the cases came with cerebrovascular disease. Thirty-four patients had associated diabetes mellitus.

Table II

Age and wise sex distribution of Patients with Hypertension.

Age in years	No. of pts.	%
12-19	8	2.40
20-29	17	5.10
30-39	34	10 20
49-49	64	19.20
50-59	78	23.30
60-69	85	25.40
70+	48	14.40
Total	334	100.00

Male : Female = 3.1 : 1% (252 : 82)

Table—III

Complications in Hypertension

Nature of complication	No. pts.	%
Cerebrovascular disease	141	42.30
Congestive cardiac failure	37	11.10
Acute left ventricular failure	32	9.60
Ischaemic heart disease	16	4.80
Arrhythmias	2	0.60
Chronic renal failure	2	0.60
Total	230	69.00

Table IV shows the age and sex distribution of 119 cases of IHD. About 60·50% of the patients was in 40-59 years age. There were 110 males and only 9 females. About 23.65% patents came with various complications (Table V).

Table—IV

Age and sex wise distribution of Patients with Ischaemic Heart Disease

Age in years	No. of pts.	%
12—19	1	0.85
20—29	1	0.85
30—39	15	12.60
40—49	36	30.25
50—59	36	30.25
60—69	21	17.65
70+	9	7.55
Total	119	100.00

Male : Female = 12.2 : 1 (110 : 9)

Table—V

Complications in Ischaemic Heart Disease

Nature of complication	No. of pts.	%
Acute left ventricular failure	16	13.50
Arrhythmia	9	7.60
Cardiogenic shock	1	0.85
Paricarditis	1	0.85
Hemiplegia	1	0.85
Total	28	23.65

The age and sex distribution of 99 patients with RHD is shown in table VI. About 79 patients were below the age of 39 years. There were 59 males and 40 females. Table VII shows the nature of rheumatic heart lesions in these cases and also those of Shumpei Okubo et al[6] at ICVD. Table VIII details the complications in patients with RHD.

Table—VI

Age & sex wise distribution of Patients with Rheumatic Heart Diseases

Age in years	No. of pts.	%
12—19	27	27.30
20—29	30	30.30
30—39	22	22.20
40—49	10	10.10
50—59	4	4.05
60+	5	6.05
Total	99	100.00

Male : Female = 1.8 : 1 (59 : 48)

Only 9 patients (1.34%) had congenital heart disease. There were 6 males and 3 females. VSD was detected in 4 cases, ASD in 3 cases and 2 cases had pulmonary stenosis. Of them four cases presented with congestive cardiac failure including one with atrial fibrillation.

There were 112 patients (15.64%) in the miscellaneous group. Of them 58 cases (8.60%) were of cor pulmonale and the rest included cardiomyopathy, arrhythmia and undetermined conditions.

Table—VII

Nature of Rheumatic Heart Disease in percent (M-Mitral, A-Aortic, S-Stenosis, R-Regurgitation)

Nature	SMCH (n—99)	ICVD (n—205)
MS	24 25	54
MR	20.20	21
MSR	15.15	2
A	13.10	12
M+A	7.10	11
Rheumatic Carditis	20.20	—
Total	100	100

Discussion :

The present study reveals that all types of cardiovascular diseases are prevalent in this country. About 25% of the hospital population in medical units has various types of cardiovascular disease. The sex distribution of partients shows a male to female prepondarence (2.9:1) as in other reports[1,2,3].

Hypertension is the most common cardiovascular disease (49.63%) in the present study and it is in conformity with other reports[1,2,8]. However in Malik's[4] series hypertension (hypertensive heart discase) is third in frequency. This is due to the fact that ICVD hardly entertains hypertensives with cerebrovascular disease in contrast to our hospital where such paticnts constituted 42.30% of all hypertensives. Most of the hypertensives are males. Majority of the patients is in 40-69 years age and so in other studies[1,3]. Hypertension is a major risk factor for cerebrovascular disease and accounts for 58% of such association in one report[4]. We had 42.30% of hypertensives with cerebrovascular disease. Hypertensive heart disease is seen in 26.10%.

Ischaemic heart disease is the second common cardiovascular disease in the present series and is in conformity with fiudings of Hossain (1984).[3] Malik[4] reported IHD as the most frequent cardiovascular disease. However, IHD was third in frequency with RHD in second position in the reports of WHO (1976)[8] and Malik (1976)[2]. Males suffer almost exclusively from IHD (12.2:1) and this is in agreement with others[2,3]. Females are very much less affected probably due to endogenous hormonal influence, less or no smoking and menstrual effects[7]. The commonest age is 40-59 years in our series. About 23.65% cases presented with various complications.

Rheumatic heart diease is the third frequent cardiovascular disease in the present study. Most of the patients are below 39 years of age and males suffer more frequently than females. This finding is in agreement with other workers[2,3]. Mitral valve alone is most frequently affected (59.60%). Mitral valvular diseases are still higher in frequency in ICVD[6]. This is probably due to operative facilities available at the centre.

It is observed that over the last ten years the incidence of RHD has declined and IHD has emerged as a major cardiovascular disease second only to hyper-

tension. The eause of decline in RHD is unclear. May be that the fall in RHD is due to increased medical awareness in public and improvement in socio-economic condition. The increase in the incidence of IHD may be a relative one. But Nabi et al[5] has shown an increase in the incidence of acute myocardial infarction by 0.5% per year (1979-1981). Increased longivity, psychosocial stress and faulty life style habits may be responsible for the increased IHD manifestations.

Incidence of congenital heart disease is low (1.34%). The true incidence will be higher because i) we have excluded patients under 12 years of age and ii) many such patients die prematurely due to lack of early medical care.

Misc ellaneous conditions made up a group large (16.64%) and this was mainly due to cor pulmonale (8.60%). We think that this condition now deserves an independent entity and attention. Almost all of the cor pulmonale were due to chronic obstructive airway disease.

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PROGNOSIS OF PREGNANCY HAVING EARLY VAGINAL BLEEDING

Kohinoor Begum

Key words :

Threatened abortion, prognosis of pregnancy.

Summary :

504 cases of threatened abortion have been studied and the effect of bleeding on outcome of pregnancy is noted. About 306 cases crossed 28 weeks of pregnancy. Of these, 252 went to full term uneventfully and rest 54 had preterm labour before 37 weeks. 198 cases ended in abortion, of which 145 had spontaneous abortion and 35 had missed abortion. Inspite of threatened abortion there was minimum effect on many of the pregnancies which could be continued near to term under proper supervision.

Materials & Method :

Antenatal patients who attended the private clinic of the author for three calendar years, 1985 to 1987, were included in the study. Among 4504 patients who attended the clinic 504 had vaginal bleeding sometimes during the first 28 weeks of gestation. Vaginal bleeding in these cases included those episodes which seems to be significant rather than those of a few drops in single occasion. Also informations regarding amount, duration and number of episodes were recorded. Index group was compared with control group of 4000 cases whose pregnancies were not complicated by such bleeding. Concentrated studies were made on mean maternal age and parity, gestational age and age in which bleeding started, maximum incidence of pregnancy wastage, gestational age of delivery, delivery outcome and condition of the baby at birth (including birth weight, congenital anomaly etc).

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Result :

Mean maternal age in the study group was 24.5 years; mean education was upto Class—IX and 10% of them were service holders. There was no such parity differences between index and control group. About half of both groups were nulliparous (48% and 51% respectively). 15.01% of the index group had a history of previous 1-2 abortions spontaneously. Among the nulliparous patients 2.1% had previous history of sterility before conception. Gestational period at which bleeding was first noted is shown in Table—1.

Table—1

Period of gestation at the time of starting of bleeding.

Period of Gestation	Number	Percentage
<8 weeks	45	9%
8-12 weeks	272	54%
13-18 weeks	162	32%
after 18 weeks	25	5%
Total :	504	100%

Most commonly bleeding started from 8-12 weeks.

Table—II

Maximum incidence of pregnancy wastage according to gestational age.

Period of gestation	Abortion	
	Number	Percentage
6-9 weeks	29	14.7
10-14 weeks	113	57.1
15-20 weeks	47	23.7
more than 20 weeks	9	4.5
Total :	198	100%

Maximum incidence of pregnancy wastage was in between 10-14 weeks. At the end of 12th week the cumulative abortion rate was 50%. But it was observed that 55% of the threatened abortions in the 2nd trimestar ended in abortion.

About 58% of midtrimestar pregnancy having early bleeding ended in abortion. Hospitalization needed in 45 cases only who had severe bleeding and who had most valuable pregnancies.

Table—III

Incidence of abortion in threatened cases.

Type of abortion	Number	Percentage
Spontaneous	145	73.1%
Missed	53	26.9%
Total :	198	100%

Amount of bleeding :

Amount of bleeding was scanty (continued for 3-4 days in small amount) in 73%, moderate (continued for 7-10 days in small amount) in 21% and severe (alarming bleeding) in 6% of cases.

Episodes of bleeding :

Average episode of bleeding was two times (88%) and varies from 1-5 times in some cases. Only 11 patient (2%) had history of leaking membrane with threatened abortion.

Ultrasonography :

Ultrasonography was only possible in 65 cases of index group to detect viability of foetus in early weeks of gestation and localization of placenta after 28 weeks in no cases. Only 58 cases had placenta in lower uterine segment.

Table - IV

Placental complications after early pregnancy bleeding.

Placenta	Bleeding	
	Number	Percentage
Placenta previa	13	32.5
Abruption Placenta	27	67.5

Gestational age at the time of delivery :

Table—V

Gestational age at delivery after early pregnancy bleeding.

Gestational age in weeks	No bleeding		Bleeding	
	Number	Percentage	Number	Percentage
<37	203	9.22	54	16.01
37+	3797	90.78	252	83.99
Total :	4000	100%	306	100%

About 60.7% in the index group crossed 28 weeks of gestation. The gestational age was manadly different in both groups. The index group who had early bleeding left more chance of postterm labour than the control group.

Mode of delivery :

Spontaneous vaginal delivery is common in 82% of control group and 78% in index group and caesarian section rate is 11% and 16% respectively.

Table—VI

Birth weight distribution of early bleeding group.

Birth weight (g)	No Bleeding		Bleeding	
	Number	Percentage	Number	Percentage
<2500 gm	408	10.2	67	15.15%
2500-4000 gm	3480	87.0	367	83.05%
4000 gm	112	2.8	8	1.80%

Small infants of less than 2500 gm. at birth was near about twice in the index group. This low birth weight infants included both preterm and small number of date term infants.

Table—VII

Perinatal variations associated with early vaginal bleeding.

Pregnancy outcome	No Bleeding		Bleeding	
	Number	Percentage	Number	Percentage
Still birth	102	2.6	10	3.26
Asphyxiated baby	160	4	42	13.73
Neonatal death	109	2.7	19	6.21
Healthy live baby	3699	90.7	235	76.80

Discussion :

Vaginal bleeding in first half of pregnancy is a common clinical entity which represents a definite threat to the developing embryo and constitutes a source of anxiety to both the patient and the clinician. It may be associated with subsequent perinatal complications including prematurity, low birth weight and congenital anomaly. Retrospective studies demonstrated an increased chance of retardation, epilepsey and neurological disability in children whose mother have early vaginal bleeding.

The average maternal age here is 24.5 years and there is no such parity difference between index and control group. About half of both groups were nulliparous (48% and 54% respectively).

The abortion rate in present series is 39.3%. In a series by Abehesi and O Dada[1] the abortion rate was 48.8%. In a study by Jens B Hertz[3] of 225 cases from two Hospitals (64 from one hospital and 113 from another hospital) the abortion rate was 29 (49%) and 53 (47%) respectively and maximum incidence of pregnancy wastage was 10—12 weeks. The higher incidence in last series may be due to that all were hospital referred cases.

The maximum incidence of pregnancy wastage found in the present series is in between 10—14 weeks. At the end of 12th week cumulative abortion rate was 30% but it has been seen that 55% of the threatened cases in 2nd trimester ended in abortion.

Hospitalization needed in 45 cases who had severe bleeding and who had most valuable pregnancies. So this could be said that hospital admission of patients having threatened abortion may not be essential for preservation of pregnancy except when bleeding is life threatening.

The incidence of missed abortion in present series is 26.9% which is similar to Abehesi and O' Dada[1] series. Of these 53 cases of missed abortion 4 cases required hysterectomy due to severe bleeding and had placenta in the lower uterine segment.

Though the hormone assay is not possible and ultrasonography could not be made available in all cases, it is clear from literature that abortion rate is 100%, in those cases who have low oestriole or progesterone level and who have no sign of foetal movement in ultrasonography from 9th week of gestation. If we can arrange hormone assay and serial ultrasonography, we can minimize unnecessary bed rest and botheration to patients and clinicians both.

Although in maximum cases pregnancy continued upto term, the incidence of preterm labour is higher in index group (17.04%) in comparison to control group (9.22%). This may be in some part due to premature indication of labour mainly for foetal causes. Abehesi and O' Dada[1] shows 17%, Hortz et al[3] shows 13.19% and Guthrie[3] et all shows 12.74% of preterm incidence of labour in their respective series which is near about to our present findings.

Small infants of less than 2500 gm at birth was near about twice (21.09%) the index group. This included both preterm and intrauterine growth retardation. In a study by Hertz et all[3] incidence of low birth weight was similar to this series.

Although there were more frequent still births in the index group, about 3.26%, the difference in two groups was not significant. Incidence of total perinatal mortality wes significantly higher in present study which is similar to study by Hertz et all[3] in 1984. This may be due to higher incidence of small for date and asphyxia at birth. Incidence of congenital anomaly was not significant. Funderberk, Gunthrie and Meldrum[2] in their series showed more than two fold increase in incidence of prematurity, small for date and asphyxiated baby. Perinatal death was 7.72% in comparison to 2.00% in control group of their series. Incidence of caesarean section was a bit higher in index group (16%), in comparison to 11% in control group, due to foetal distress and placenta praevia.

From the present data and other studies that address the issue it is nonetheless pertinent to say that a patient who had vaginal bleeding in early pregnancy of any amount should be followed up closely. Measure should be taken to prevent preterm onset of labour pain, if not possible preparation should be taken for preterm labour. Every effort should be made to deliver in a well equipped hospital where intrapartum and neonatal complications can be identified quickly and managed in collaboration of a neonatologist. Threatened abortion is unavoidable but good medical care can minimize its effect.

Reference :

1. Abehesi and O A Dada : *Prognosis of pregnancy after threatened abortion.* Int Journal of Gynaecol & Obst, 1980, 18, 444-447.
2. Funderbeck S J, D Guthrie & D Meldrum British J of Obst. & Gynaecology. 1980; 87:100-105.
3. Hertz BJ, Fieldening W L & Friedman E A, Obst & Gynaecol, 1984, 515-517.

HYDATID CYST OF THE ANTERIOR ABDOMINAL WALL– A CASE REPORT

H A Talukder

Key words :
Hydatid Cyst, Abdominal wall.

Summary :

Hydatid cyst is an uncommon condition in our country. It is primarily seen in the liver and lungs. Involvement of muscles of anterior abdominal wall by Hydatid cyst is so far not reported. The case reported is a case of Hydatid cyst of the oblique muscles of the anterior abdominal wall.

Introduction :

Hydatid cyst is the larval stage of Echinococcus granulosus. The adult parasites are usually found in the intestine of dog. Sheep and cattle are the ususl intermediate hosts. Men are accidentally infected from the contaminated faecal matter of the dog during handling. The larval stage of Echincocous granulosus is very uncommon disease in our country. Hydatid cyst is commonly seen in the liver and lungs but primary isolated lesion in the muscle is extremely rare. No such lesion has so far been reported from Bangladesh. So it is felt worthwhile to report this case of Hydatid cyst affecting the right oblique muscles of the anterior abdominal wall of a 20 year old girl.

H A Talukder, Associeate Professor of Surgery, Rajshahi Medical College.

Case Report :

An unmarried girl aged 20 years was admitted in the surgical unit of Rajshahi Medical College Hospital with a palpable mass of 10 years duration in the right lumber region anteriorly. Initially it was small and was increasing in size very slowly. Occasionally she felt pain in the abdomen over the mass during coughing, laughing, running and jumping. The pain was dull in nature. She had no other associated complaint.

The mass was not visible. On palpation, it was in the right lumber region, 5″x3″ in size, margins were well defined; surface was irregular, consistancy was tensely cystic ; it was not so mobile but moved up and down with respiration.

The mass was in the anterior abdominal wall; mild tenderness on deep pressure was noted. It was dull on percussion, no auscultatory findings, liver and spleen were not palpable, heart and lungs were normal; pulse 70 p.m. ; B. P. 110/75 mm of Hg; temperature 98°F.

The case was provisionally diagnosed as a cystic swelling in the anterior abdominal wall in the right lumber region.

Routine blood, stool and urine examination were normal; blood urea 35 mg/100 ml; blood sugar 90 mg/100 ml. X-ray

chest and plain X-ray abdomen were normal. Hepatic scan was normal.

Compliment fixation, precipitin and intradermal cutaneous tests could not be done due to lack of facilities.

During operation the mass was found confined within the oblique muscles. On further dissection the cysts wall was seen bursted in one place and different sizes of smaller cysts were extruded. One or two cysts containing clear fluid ruptured. About 22-25 smaller cysts were removed from the large cystic cavity. The main large cyst was found divided into three compartments (Fig. 1). The whole cyst was excised, The convalescence period was smooth. The wound healed by primary intention.

Microscopical examination :

The specimen consisted of various sized white transluent vesicles containing clear colourless fluid. One vesicle was sumitted for histo-pathological examination.

Microscopic section of cyst wall showed laminated eosinophilic mass like laminated layer of Hydatid Cyst. However, scolex with hooklets was not seen (Fig 2).

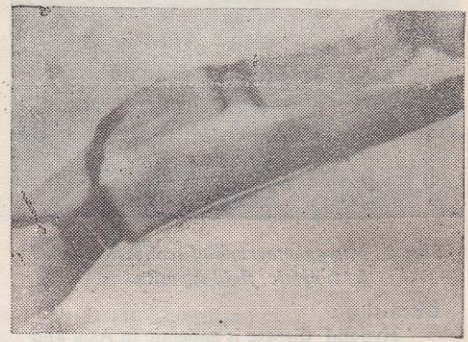

Fig. No. 2. *Microphotograph of the wall of hydatid cyst showing laminated translucent outer layer.*

Fluid deposits from other vesicles were examined and a large number of scolices with their hooklets were demonstrated (Fig. 3 and 4).

Fig. No. 1 *Photograph shows various sized vesicles in subcutaneous tissue. A number of collected vesicles are also seen in kidney tray.*

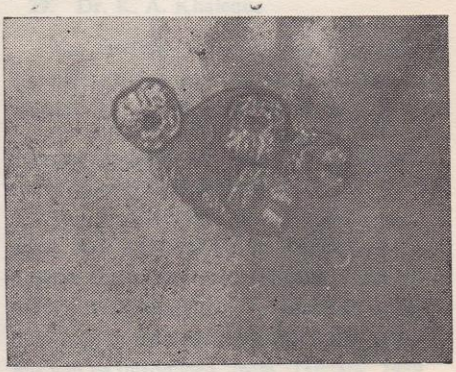

Fig : 3. *Microphotograph showing scolices and Brood capsule demonstrated from cystic fluid deposits.*

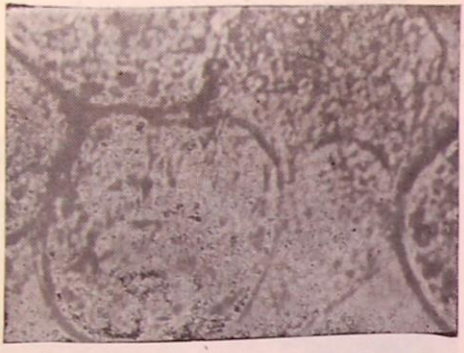

Fig: 4. *Microphotograph of scolices collected from cystic fluid deposits.*

Discussion :

Hydatid disease is endemic in Asia and parts of the Middle East but is rare elsewhere, but hydatid cyst of the muscle is rare. Primarily the disease affects liver and lungs and rarely other organs like muscle, bone and brain etc. Hydatid cyst exclusively limited to muscle was not previously reported.

The patient reported no association with dog. Possibly she had consumed some food (raw vegetables and fruits) contaminated with faecal matter of dog or any other definitive host containing ova of the parasite. The larva escaped into systemic circulation through the hepatic and lung filters and got arrested in the muscle.

COLLEGE NEWS

MCQ

MCQ system was introduced in FCPS Part I (Group "A" & "B") Examination held in January, 1988.

Discussion Meeting

A discussion meeting between the College Authority and the Directors of the Postgraduate Medical Institutions & Dean, Faculty of Postgraduate Medicine, Dhaka University was held on 9.2.88 to discuss about the conflict existing between FCPS degree of Bangladesh College of Physicians and Surseons and M S & M D degree of Dhaka University. Following participants attended in the meeting.

1. Dr. S. A. Ashraf
2. Dr. M. A. Quaderi
3. Dr. A. H. M. Ahsanullah
4. Dr. T. A. Chowdhury
5. Dr. Nazmun Nahar
6. Dr. S. G. M. Chowdhury
7. Dr. Md. Nurul Amin
8. Dr. R. K. Khandaker
9. Dr. Waliullah
10. Dr. K. M. Rahman
11. Dr. A. K. M. Anowarul Azim
12. Dr. M. A. Hadi
13. Dr. K. M. H. S. Sirajul Huq
14. Dr. Mahmud Hasan
15. Dr. A. F. M. Masood
16. Dr. Maleka Khatun
17. Dr. M. R. Choudhury
18. Dr. K. A. Mansur
19. Dr. A. S. M. Fazlul Karim
20. Col. Abu Hena
21. Dr. M. R. Khan
22. Dr. B. Chowdhury
23. Dr. M. A. Hai
24. Dr. Matiur Rahman
25. Dr. M. A. Wahab
26. Dr. A. J. M. Mizanur Rahman
27. Dr. M. A. Mannan
28. Dr. SIMG Mannan
29. Dr. K. A. Khaleque

The meeting came to the consensus that before doing M. S. & M. D. in clinical subjects one should do FCPS.

Separate Syllabus for FCPS Part I Examination in specialised subjects :

The separate syllabus has been prepared and approved by the Council of the College for FCPS Part I Examination in ENTD, Ophthalmology, Anaesthesiology, Radiology & Radiotherapy. This new syllabus will be introduced from January, 1989 Exmination.

Continuing Medical Education Programme :

September 24, 1987 — Dr. Md. Habibur Rahman
Asso. Prof of Medicine (Neph.), IPGMR, Dhaka
delivered a lecture on "Chronic Renal Failure-A Global Problem".

October 29, 1987 — Dr. (Maj. Gen.) M. R. Chowdhury
Commandant, Armed Forces Institute of Pathology and Transfusion, Dhaka Cantt. delivered a lecture on "Streptococcal Throat Infections in Bangladesh".

January 11, 1988 — Prof. A. C Kennedy
President, Royal College of Physicians and Surgeons of Glasgow, U. K. delivered a lecture on "Overseas Doctors Training Scheme".

Examination News

Results of FCPS Part I, FCPS Part II and MCPS Examination held in January, 1988 are given below :

315 candidates appeared in FCPS Part I Examination in different subjects only 34 candidates came oute successful, subjectwise results are as follows :

Subject	Number appeared	Number qualified in Theory exam.	Number Passed
Medicine	64	25	1
Surgery	71	22	11
Obst. & Gynae	43	10	0
Paediatrics	49	28	14
Ophthalmology	27	15	2
E. N. T.	18	10	4
Psychiatry	7	0	0
Radiology	7	3	0
Radiotherapy	3	1	0
Anaesthesiology	20	7	2
Clinical Pathology	6	5	0
	315	126	34

Candidates securing 12 grade marks in theory Examination in more than two subjects or below 12 grade mark in any subject were not called for Viva-voce Examination.

74 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 from where graduated.	Subject
17	Dr. A. T. M. Mosharef Hossain	Dhaka Med. College	Surgery
20	Dr. Syed Mahmudur Rahman	Dhaka Med. College	Surgery
28	Dr. Moudud Hossain Alamgir	Dhaka Med. College	Surgery
30	Dr. S. M. Mahbub Alam	Dhaka Med. College	Surgery
33	Dr. Faruk Ahmad	Chittagong Med. College	Surgery
38	Dr. A. B. M. Ali Akbar Biswas	Chittagong Med. College	Surgery
42	Dr. A. H. M. Shamsul Alam	Mymensingh Med. College	Surgery
44	Dr. A. J. M. Salek	Chittagong Med College	Surgery
47	Dr. Gobinda Chandra Bose	Sir Salimullah Med. College	Obst. & Gynae
49	Dr. Rumana Shaikh	Dow Med. College, Karachi	Obst. & Gynae
51	Dr. Shamsun Nahar Begum	Sylhet Med. College	Obst. & Gynae
52	Dr. Md. Abdus Sabur	Sylhet Med. College	Obst. & Gynae
53	Dr. Nazneen Begum	Mymensingh Med. College	Obst. & Cynae
55	Dr. Md. Manajjir Ali	Sylhet Medical College	Paediatrics
57	Dr. Md. Mizanur Rahman	Sher-e-Bangla Med. College	Paediatrics
61	Dr. A. R. M. Luthful Kabir	Mymensingh Med. College	Paediatrics
63	Dr. Ainun Afroza	Chittagoeg Med. College	Paediatrics
64	Dr. Shafi Uddin Ahmed	Mymensingh Med. College	Paediatrics
65	Dr. Ruhul Ahmed Chowdhury	Sylhet Medical College	Ophthalmology
66	Dr. Syed Maruf Ali	Sylhet Medical College	Ophthalmology
73	Dr. Manzurul Alam	Chittagong Med. College	Anaesthesiology
74	Dr. (Lt. Col.) Mohd. Motiur Rahman Chowdhury	Sir Salimullah Med. College	Anaesthesiology

53 candidates appeared in MCPS Examination in different subjects. List of candidates who satisfied the examiners are as follows :

Roll No.	Name	Subject
3	Dr. Meskath Uddin	Medicine
7	Dr. Md. Rashidul Hassan	Medicine
13	Dr. Md. Iqbal Faruqe Khan	Surgery
14	Dr. Abdullah-Al-Amin	Surgery
15	Dr. Sanjib Kumar Ghosh	Surgery

Roll No.	Name	Subject
21	Dr. Hasanat Jahan	Obst. & Gynae
24	Dr. Nazli Begum	Obst. & Gynae
26	Dr. Mehrose Alam Chowdhury	Obst. & Gynae
27	Dr. Lutfunnessa Khan	Obst. & Gynae
31	Dr. Mohammad Azizur Rauf	Paediatrics
39	Dr. S. M Moqbul Ahmed	Ophthalmology
45	Dr. Anowar Ara Begum	Forensic Medicine
48	Dr. A. K. Mohiuddin	Anaesthesiology
49	Dr. Md. Saidul Islam	Anaesthesiology
51	Dr. Das Ranjit Kumar	Anaesthesiology

Fellowship Without Examination

Dr. Matiur Rahman, MRCP, FRCP, Prof. of Nephrology, IPGMR, Dhaka and Dr. Kamaluddin Ahmed, MBBS, MSc, Director, Institute of Nuclear Medicine, Atomic Energy Commission, Ramna, Dhaka were admitted as Fellow without examination for the year 1987.

Recognition of Training

The Council of the Bangladesh College of Physicians and Surgeons has decided to Provisionally recognise the training of doctors in the department of (1) Paediatrics, (2) Psychiatry, (3) Anaesthesiology, and (4) Radiology of CMH in Armed Forces Medical Institute, Dhaka Cantt. for a period of 2 years w. e. from 20.9.87 as a prerequisites for appearing in Fellowship examination of the BCPS.

Visit of the President of the BCPS

Dr. S. A. Ashraf, President of the BCPS visited the Royal Colleges of U. K. in September, 1987 and discussed with the Presidents of the Royal Colleges regarding academic affairs of the BCPS.

He also discussed with them regarding the Overseas training of our fellows. He was informed that presently they have developed a scheme known as "Double Sponsorship Scheme" under which if BCPS sponsores a fellow for training in any speciality and refers his case to the President of the Royal College of Physicians and Surgeons of Edinburgh, the Edinburgh College would then workout a suitable programme for such a candidate and also findout a suitable placement for him. In this scheme the nominated fellow will be acceptable in the grade of Registrar and will be working in the hospital of U. K. for 2 years and will be paid. The accepted candidate will be granted temporary registration for his tenure without any "PLAB" test.

The President also visited the Pakistan College of Physicians and Surgeons to attend its Silver Jubilee Conference held on 9th & 10th December, 1987.

Annual General Meeting

The 15th Annual General Meeting of the BCPS was held on 26.2.88. Honorary Secretary Dr. T. A. Chowdhury presented his report on activity of the Council of the College during the last year. Dr. A. H. M. Ahsanullah, Treasurer of the College presented Annual Budget for financial year 1988-89 which was accepted by the College. The Annual General Meeting was followed by a contributory lunch at College premises in which a remarkable number of fellows participated.

OBITUARY

Dr. Dilruba Begum

Dr. Dilruba Begum was born on 2nd Sept. 1953 in 371, Serajuddowla Road, Chittagong. She graduated in 1979 from Chittagong Medical College. She was admitted a fellow of the Bangladesh College of Physicians and Surgeons in Obstetrics & Gynaecology in January, 1985 by examination. She served in various capacities in the Bangladesh Health Service and was appointed as Asstt. Prof. of Obst. & Gynae in Sylhet MAG Osmani Medical College. While she was going for conducting MBBS Examination in Chittagong Medical College, she died by road accident on 24th February, 1988.