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JOURNAL OF BANGLADESH COLLEGE OF PHYSICIANS AND SURGEONS

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EDITORIAL

Prioritizing Neonatal Health - A Way to Achieve Millennium Development Goals

The child is the future asset and hopes of any nation. They are the foundation for future development. There is a global consensus that improving health of the child and mother paves the way for poverty alleviation and development[1]. Investment in maternal, neonatal and child health is not only a priority for saving lives but also critical to advancing other goals related to human welfare [2]. The policy makers have recognized that their commitment to meet the Millennium Development Goals (MDGs) bring nothing unless survival is made a reality for millions of children especially the neonates [3] · The government of Bangladesh is also committed to improve health of the children by implementing MDG-4 which has set a target to reduce mortality in children less than five years (U5MR) by two thirds between 1990 and 2015. · Although U5MR has been reduced from 248/1000 in 1960 to 69/1000 live births in 2005 and infant mortality rate (IMR) from 149/1000 to 46/1000 live births in 2005, only a decade is left to reach the target set by MDG i.e. U5MR 31/1000 live births and IMR 22/1000 live births in 2015[4]. This substantial reduction in mortality will not be possible without giving extra effort to reduce the neonatal death which constitutes major bulk of under five mortality. Moreover intervention in the neonatal period will have a profound effect on early childhood development. Amongst the children who die under 5 years of age, 38% die in the neonatal period[5], and three quarters of neonatal deaths occur in the first week of life. Almost all (99%) death in newborn occur in the low income and middle income countries. Of the 130 million babies born every year , about 4 million die in the first 4 weeks of life and a similar number of babies are still born[6]. The direct causes of neonatal death in high mortality countries are preterm birth (27%), sepsis (26%), tetanus (7%), diarrhoea (3%), and perinatal asphyxia (23%)[7]. In very high mortality countries (NMR>45) 50% deaths are due to tetanus, diarrhoea, and severe infection which are entirely preventable. Most newborn deaths occur at home in low income and middle income countries against a backdrop of poverty, suboptimal care seeking and weak health systems[7]. Despite the immense importance of neonates, they had always been neglected.

Child survival programmes in the developing world have tended to focus on pneumonia, diarrhoea, malaria and vaccine preventable conditions, which are important causes of death after the first month of life. Between 1980 and 2000 child mortality after first month of life fell by third, whereas neonatal mortality was reduced only by a quarter [7]. Reduction of deaths in the first week of life have shown no progress, rather deterioration . In 1980 only 23% of deaths happened in the first week of life; by the year 2000 this figure has risen to an estimated 28%.[7]. Our crucial omission has been the neglect of the newborn. While infant and the mother have been at the center of efforts to protect early childhood, the newborn period has been relatively neglected. Newborn baby has now fallen through the cracks between safe motherhood which focus on mother and child survival programme which prioritize children older than 1 month. For example, the generic of IMCI guidelines even do not include first week of life – the period of the highest risk of childhood mortality[8].

To meet MDG-4, a substantial reduction in NMRs in high mortality countries like Bangladesh is needed and reducing deaths in the first week will be essential to progress. Functioning of maternal and neonatal health system caring for diad of mother and pregnancy, child birth and early neonatal period are essential if neonatal mortality is to be reduced.

The neonatal survival steering team has found out evidence based, cost effective, feasible interventions that could avert up to 41 to 72% of the neonatal deaths[9]. The interventions are preconceptional- folic

acid supplementation, antenatal- tetanus toxoid immunization, syphilis screening and treatment , pre eclampsia and eclampsia prevention, intermittent treatment to malaria, detection and treatment of asymptomatic bacteriuria. Intrapartum interventions such as antibiotics for premature rupture of membranes, corticosteroids for preterm labour, detection and management of breech labor, surveillance for complications, clean delivery practices. Postnatal interventions include resuscitation of newborn, breastfeeding, prevention and management of hypothermia, kangaroo mother care for low birth weight babies, community based management of pneumonia. Cost effective analyses emphasized the benefits of combining interventions into packages with a common service delivery mode rather than providing single intervention in a vertical manner[10].

Antenatal and postnatal care through community intervention including health education of the families and communities to promote adoption of evidence based home care practices , create demand for skilled care and improve care seeking behaviour can bring success. Simultaneous expansion of clinical care for newborn babies and mother are essential to achieve MDG-4[9].

The question arises, can low and middle income countries reduce neonatal mortality without intensive care technology and allocation of extra budget? The experience of the countries that have reduced NMR successfully over the past century, tells us the answer in a resounding yes[11]. Reduction in neonatal mortality in developed countries like U K preceded the introduction of expensive neonatal care. Several low income countries have achieved low NMR despite limited resources including Honduras, Indonesia, Sri Lanka, Vietnam due to sustained input in primary care services and facilities at the government sector[12]. Effective low cost interventions like tetanus toxoid vaccination, exclusive breast feeding, kangaroo mother care of infants and antibiotics for infections do reduce mortality[9]. As about 90% of the babies are born at home in developing countries, the provision of home based neonatal care by community health care worker and community mobilization for improving maternal and neonatal care through women's group can result in impressive reduction in neonatal mortality[13].

Recognizing the need for neonatal health in child mortality, India has adopted IMNCI (Integrated Management of Neonatal & Childhood Illness) strategy. The government of India has made mandatory for outreach health workers and community and child development workers to visit all neonates at home within first 10 days, starting soon after birth, to provide home-based preventive care/ health promotion and to detect neonates with sickness requiring referral. Extra contacts are proposed for care of low birth babies, postpartum care for mothers. The cost of including N (Neonatal) in IMCI in clinical care is estimated less than 10 cents per person, given the existence of traditional IMCI programmes[11].

To reach MDG and to reduce U5MR, there is no alternative other than giving priority to neonatal health. Negligence of children especially the neonates is an entirely preventable mass destruction of human lives. Without losing time we should come forward to uplift the status of the children and prioritize the neonatal health in order to reach MDG in due time. Nobel laureate Gabriela Mistral rightly said "We cannot wait for tomorrow for our children , it is today".

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(J Bangladesh Coll Phys Surg 2006; 24: 1-3)

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Maternal Death Audit: Experience from a Periurban Hospital

S TASNIM[a], N KABIR[b], A RAHMAN[c], A AHMED[d], S CHOWDHURY[e]

Summary:

Maternal death audit is becoming a routine process in the practice of obstetric care in both developed and developing countries. Review of case records of maternal deaths between September 1999 and December 2004 was done to find out the profile of the patients and factors associated with the deaths in a periurban hospital in Dhaka. A total 40 maternal deaths occured among 14,137 live births amounting MMR 282 per 100,000 live births.

Mean age of deceased mothers was 24.85± 5.6 years, 25% were primipara and vaginal delivery occurred in 42.46% cases. Thirty percent deaths occured within six hours of admission to hospital and 73% deaths occurred during post-partum period. The primary obstetric cause of deaths were severe pre-eclampsia and eclampsia (42.5%), haemorrhage (17.5%), obstructed labour (12.5%) and sepsis (7.5%) respectively.

Facility based audit into maternal deaths provide an opportunity to understand the inciting factors and is recommended to be implemented for improvement of professional practice and management.

(J Bangladesh Coll Phys Surg 2006; 24: 5-9)

Introduction:

Audit in medical practice is defined as the systematic and critical analysis of the quality of medical care, including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome and quality of life for the patients[1] .

Audit can measure the structure that is the resources and personnel available, process that happens in the practice/hospital and outcome that indicated the results of care. This is well appreciated that **a**udit is not fault finding, but it encourages thoughtful planning which leads to valid information collection and subsequently to informed decision making[2].

Maternal mortality is a key indicator of the quality of health services and usually provides an insight to health care practices that are most effective in averting maternal deaths[3]. Even in developed countries where MMR is much lower, maternal death audit have attributed substandard care to 40-66 percent of maternal deaths[4]. Maternal death audit is in practice in the United Kingdom, South Africa and Malaysia since 1952, 1998 and in early 80's respectively[5].

In recent years, audit has become an acquired concept in the context of obstetric and other health care in both industrialized and developing countries. Maternal death audit is important because it gives an understanding to what happened and why. This helps to go beyond rates and ratios to determine the inciting factors and to take measure how they could have been avoided[6].

This study was designed to review maternal deaths in a periurban comprehensive health facility to find out patients' profile and selected factors associated with maternal deaths.

Materials and methods:

Individual case review, one of the methods of maternal death audit, was used. Data was retrieved

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from hospital case records (admission register, case file, delivery register, death certificate) using structured questionnaire by assistant registrars trained for the purpose. The questionnaire was designed to explore profile of the patient, time of admission, diagnosis at the time of admission, mode of delivery, treatment received, time of death and cause of death. A total of 40 maternal deaths those occurred in the facility (Institute of Child and Mother Health, Dhaka, Bangladesh) between September 1999 and December 2004 were analyzed. However, the cases which were brought dead were excluded from the study.

Results:

Among 15,532 obstetric patients 14,137 cases had livebirth and 40 mothers died during the study period 1999-2004 (Table-1). The mean age of the deceased mothers was 24.85± 5.65 years and 50% belongs to 20-24 years age group. One quarter of the mothers were primipara and about one third were in their second pregnancy (Figure-1 and 2). Vaginal delivery occurred in 42.46% cases (Table-II). Regarding delivery status, about 73% deaths occurred in the post-partum period and 17.54% in the ante-partum period (Figure 3). The interval between admission to hospital and death was less than six hours in 30% deaths. The primary obstetric causes of death were severe pre-eclampsia and eclampsia (42.50%), haemorrhage (17.50%), obstructed labour (12.50%) and sepsis (7.50%) respectively (Figure-5).

Table-I

Year wise Distribution of Obstetric patient

Year	Total Obs in patients	NVD	C/S	Live birth	Instrumental delivery	Death
1999 (Sep-Dec)	383	200	160	253	4	4
2000	2541	1229	1144	2351	6	4
2001	2299	1144	1123	2223	5	8
2002	2912	1101	1357	2352	3	6
2003	3635	1874	1731	3449	2	8
2004	3762	1779	1954	3509	4	10

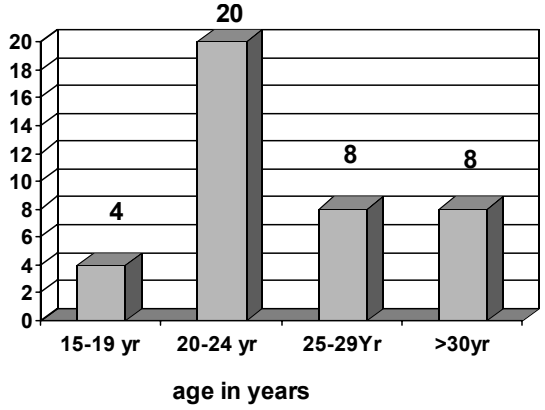

Fig.-1: *Age distribution.*

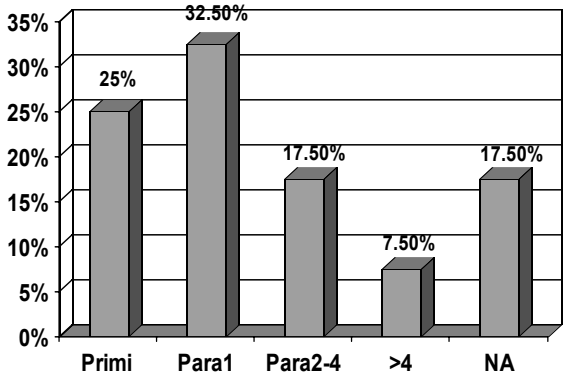

Fig.-2: *Distribution of parity*

Table-II

Status of delivery at the time of death

Mode of delivery	Number	Percentage
Vaginal delivery	17	42.46
Caesarean section	60	15.00
Undelivered	70	17.50
Abortion	40	10.00
Craniotomy	20	50.00
Data not available	40	10.00

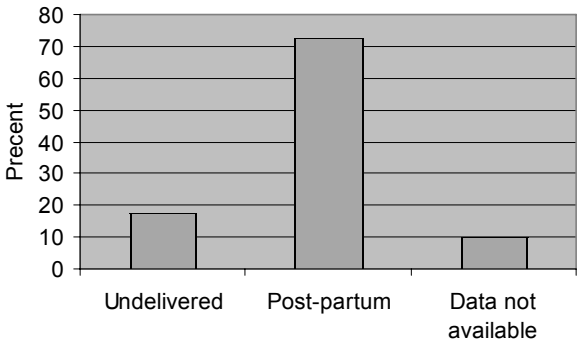

Fig.-3: *Status of pregnancy at the time of death*

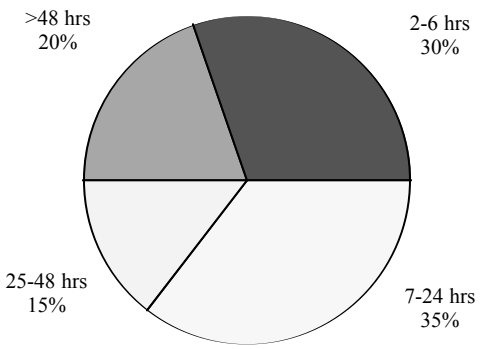

Fig.-4: *Interval between admission to hospital and death*

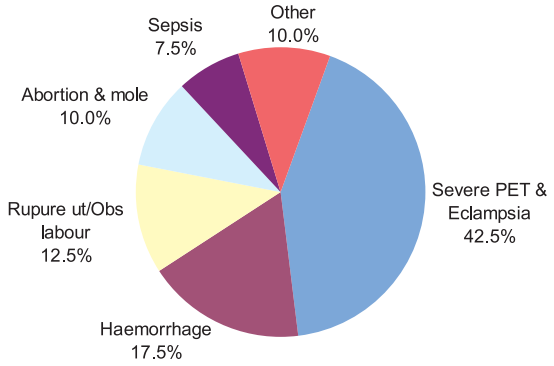

Fig.-5: *Causes of maternal death at Institute of Child and Mother Health*

Discussion:

The study revealed that maternal death was more after vaginal delivery and in the second pregnancy that is expected to be relatively uneventful that indicates limited value of screening for risk factors. This is consistent with the theme that every pregnancy is potentially at risk and needs attention. Death occurred more during puerperium and that has also been found in national mortality survey[7].

There was no antenatal care in all cases except one. This is a very important issue to be considered indicating need of adequate antenatal care for prevention of maternal mortality. More deaths happened within six hours of admission indicating delay in coming to hospital. All patients came from the catchment areas, not very far from the facility (Matuail, Demra, Adamjee, Narayangonj) with quite good access to transport indicating lack of awareness of "danger signs" and delay in making decisions by the patients or the family for coming to hospital. Experience of different interventions for safe motherhood reveals that the medical decisions by the community are often based on non medical reasons. Cultural appropriateness and alternative healing systems are strong competitors for seeking proper medical care[8]. Delay in seeking treatment contributed to 32% and 28% of rural and urban deaths among mothers in some studies[9]. Majority of the admission was during routine office hours indicating that there is a tendency of avoiding movement at odd hours.

Pre-eclampsia and eclampsia were found to be the commonest causes of death. Hypertensive disorders

of pregnancy constitutes a greater proportion of deaths in hospitals of both developing as well as developed countries[10]. In a study from Indonesia, hypertensive disease accounted for 64% of hospital maternal deaths[11,12]. In Panama, 41.7 percent deaths were due to pre-eclampsia/eclampsia[13]. At a tertiary hospital in Bangladesh, causes of maternal death reported were eclampsia (32%), haemorrhage (25%), HELLP syndrome (6%) and septic shock (9%)[14]. Another early study revealed, most common obstetric causes of death were eclampsia (47%), haemorrhage (25%), infection (17%)[15].

The age structure of deceased mothers indicated that 50% belong to 20-24 years. Other hospital based studies had shown that 49% deaths occurred in the age group of 20 - 29 years[15]. This reflects the prevailing social norm of early age at marriage and childbearing[16]. However, in European countries, more than half of maternal deaths are among woman between 25 and 34 years[3]. Majority of deaths occurred in this study during puerperium and that is consistent with national survey[7,17]. Study from other countries showed that 8.3% of deaths occurred in undelivered women and 66.7% occurred within 30 days of postpartum[13].

Although audit has become an integral part of medical care in industrialized countries, the experience in developing countries are yet very scanty[5]. Possible constraints for such audits are the magnitude of resource constraints or insufficiency in resource allocation that fail to support the implementation or sustainability of audit activities. In addition, the strong hiererchial structure of the medical profession may hamper the process of peer review, and inadequate access to scientific evidence will lead to over reliance on clinical judgement on the basis of current practice rather than best practice[5]. However, a number of developing countries like Jamaica, Egypt, South Africa and Malaysia have established confidential inquiries of maternal deaths[18,19]. In Indonesia, district level audits are in practice[12]. There are documented reports on facility based audits involving case reviews, compilation of risk factors and avoidable factors[20,21]. Government of Bangladesh has taken initiatives to establish regular perinatal death audits in different hospitals since 2004 [22]. Auditing of cases of severe obstetric morbidity may be an useful alternative or complement to auditing maternal deaths as it may reveal positive elements of care and provide an opportunity to congratulate staffs for saving lives [23].

Maternal deaths are common among young women in the most potential period of life and eclampsia, haemorrhage and obstructed labor are common causes of death. One limitation of this study was that the case records were maintained poorly with inadequate and incomplete information limiting understanding of all contributing factors. Regular audit of all adverse events will improve local management or professional practice.

It is recommended that antenatal selection of cases for hospital delivery, emphasis for community awareness for availing safe motherhood services, effective linkage from grass root level to higher level and implementation of maternal mortality or morbidity surveillance system should be a routine practice in health care system.

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Laparoscopic Cholecystectomy in Acute Gall Bladder Disease

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Summary:

Laparoscopic cholecystectomy is one of the procedures through which gall bladder can be removed. Acute cholecystitis was considered a contraindication for laparoscopic procedure but with time and experience this shortcoming is now overcome. Here is a study of 32 patients who were selected for laparoscopic cholecystectomy. Among them, 29 patients were operated by laparoscopic method and rest three patients were converted. This study showed the appropriate time for surgery, technical difficulties and the complication of surgery. It may be concluded that laparoscopic cholecystectomy is feasible and beneficial to the patient with acute cholecystitis in its early phase, if necessary support and expertise is available.

(J Bangladesh Coll Phys Surg 2006; 24: 10-13)

Introduction:

Laparoscopic cholecystectomy has been established as the gold standard for symptomatic gall stone disease. Before the advent of the laparoscopic cholecystectomy, open cholecystectomy was the procedure of choice for gall stone disease[1]. The bulk of available evidence attest to the superiority of laparoscopic cholecystectomy with regard to postoperative discomfort, hospital stays and time taken to return to normal activity[2].

In 1985, Muhe performed the first laparoscopic cholecystectomy in Germany[3]. But his initial report was largely ignored. In 1987, Phillipe Mouret, a French gynaecologist, who is now considered as the pioneer. performed a laparoscopic cholecystectomy and few months later showed a videotape of his technique in Paris[4].

Laparoscopic cholecystectomy is now firmly established as the treatment of choice for patients with symptomatic gall stone diseases[5]. After its inception, uncertainty persisted about the application of laparoscopic techniques in the management of patients with acute cholecystitis but this has slowly evaporated as level of experience within the surgical community has increased and as well as arrangement of operating schedule[2].

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Materials and methods:

From July, 1999 to June, 2000 i.e., for a period of one year, a total number of 32 patients of acute cholecystitis were diagnosed. The patients were selected irrespective of their age and sex. Detailed clinical history was recorded, routine and special investigations like complete blood count, serum bilirubin, alkaline phosphatase, SGPT, HBsAg, blood sugar, serum creatinine, etc. were done. All operations were done by the same surgical team. Any problem during operation and conversion to open procedure with their reason were pointed out. Post-operative course and complications, if any, and overall outcome of the study were recorded. All the patients underwent standard four ports (but some of the patients required additional ports) technique. Most of the patients were operated within 2-7 days of acute attack with a few cases after seven days. Among these, three patients were converted to open cholecystectomy.

All the patients received initial management for acute attack followed by laparoscopic cholecystectomy with preliminary counselling about conversion counselling if necessary.

Results:

All the patients (Fig.-1) presented with pain in the right hypochondrium. Most of them (28 patients) had

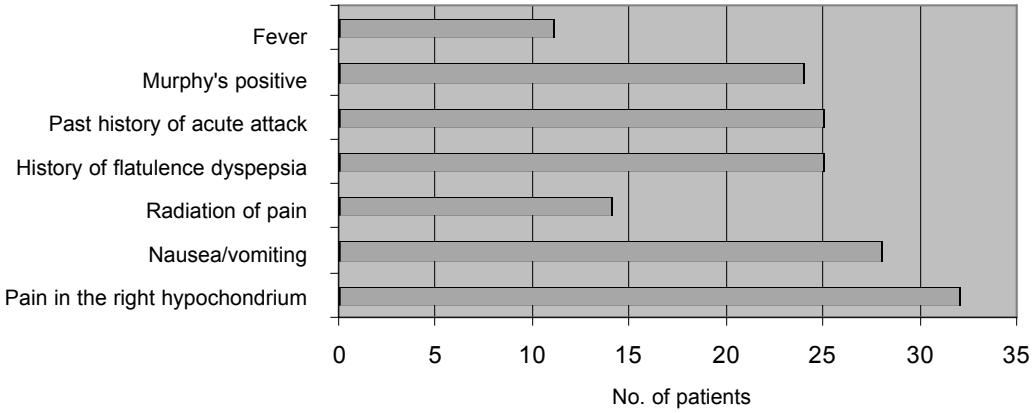

Fig.-1: *Distribution of the patients of acute cholecystitis according to their clinical presentation (N-32).*

nausea/vomiting, with history of flatulence dyspepsia (25 patients) and positive Murphy's sign (24 patients). Fourteen patients showed radiation of pain to right interscapular region. Eleven patients had raised temperature with rigidity and tenderness in right hypochondrium. Past history of acute attack was found in 25 patients (78.12%). No patients gave any past history of jaundice. Ultrasonographic findings (Table-I) showed that all the 32 patients had features of acute cholecystitis i.e. distended tense gallbladder with oedematous wall. In this series, 31 patients had stones in the gall bladder and one patient had only features of acute cholecystitis. Seventeen patients had single stone. None of them had dilated biliary tree or stone in common bile duct. Most of the patients (21 patients, 65.62%) had leucocyte count (Table-II) between 11000-13000/cmm, four (12.50%) had 13000-15000/cmm and rest seven patients had normal leucocyte count.

In most of the patients (27 patients) operation (Table-III) was done within 2-7 days. Only in 5 patients operation was done after seven days with poor result. Three of them needed conversion to open cholecystectomy. Some per operative problem has been encountered (Table-IV). In three patients it was difficult to find plane of dissection. Perforation of the gallbladder during dissection was another problem. Two patients showed short and wide cystic duct. Six patients had excessive oozing from the gall bladder bed.

Table-I

Ultrasonographic (USG) findings of the patients

USG findings	Number of patients	Percentage
Feature of acute cholecystitis without cholelithiasis	01	3.12
Features of acute cholecystitis with cholelithiasis	31	96.88
Acute cholecystitis with dilated CBD or CBD stone	00	00
Total	32	100

CBD = Common bile duct

Table-II

Leucocyte count in patients with acute cholecystitis

Leucocytes count	Number of patients	Percentage
>11000 to 13000/cmm	21	65.62
>7500-9500/cmm	07	28.87
>13000-15000/cmm	04	12.5

Table-III

Time between the onset of acute attack and the surgery (n=32)

Time in days	Number of patients	Percentage
<Three days	19	59.38
>Three days<7 days	08	25.00
> 7 days	05	15.62

Discussion:

Laparoscopic cholecystectomy has been introduced in the era of minimal access surgery as the treatment modality for the management of symptomatic gall bladder diseases. Acute cholecystitis was previously considered to be a contraindication to laparoscopic cholecystectomy. This initial reluctance has slowly evaporated as the level of experience within the surgical community has increased.

In this country, laparoscopic management of gall stone diseases is still mainly confined to the cases of chronic cholecystitis but in acute cholecystitis late laparoscopic cholecystectomy (interval laparoscopic cholecystectomy) is done. In BIRDEM centre laparoscopic cholecystectomy is practised in acute cholecystitis with fairly good result in comparison to open cholecystectomy. The results of this study has statistical value with other published results. Out of 32 cases, one had acalculous variety. In acute cholecystitis, about 95% cases are associated with gallstones and in about 5% they are not[6]. Females were four times more likely to suffer from cholecystitis than the males.

All patients were operated with the history of acute attack but the duration of acute attack just before operation varied. Early laparoscopic operation was done i.e. early operation was rather than interval one was done with consequent reduction in patients anxiety, hospital stay and wastage of health resources.

In this study with the exception of a few, ultrasonographic findings were more or less consistent with the laparoscopic findings. Laparoscopic findings revealed that 12 patients (37.50%) had no adhesion around gall bladder area but 15 patients (46.87%) had mild to moderate and five patients (15.62%) had severe adhesion (which were not mentioned in ultrasonography); three of them were converted to open cholecystectomy after 15-20 minutes of initial laparoscopic try. Twenty-nine patients (90.63%) were found to have impacted stone in the infundibulum where the stone was pushed into the gall bladder or taken out with a distal incision after suction of gall bladder content. Twenty-two patients (68.75%) had distended gallbladder where aspiration was done to facilitate grasping of the gall bladder wall. All patients had mild to severe form of wall thickening due to oedema. No problem was encountered in clipping the cystic duct but some degree of difficulty arose during closure of short and wide variety of cystic duct, and they were ultimately dealt with intracorporeal catgut tie. Three patients had rupture of gall bladder because of fragile wall and were managed by suction, and copious lavage with normal saline and diluted povidone iodine solution, and gallbladder was taken out by putting it in the retrieval bag (improvised by using surgical gloves). Three patients had too big stone that required enlargement of umbilical port during extraction of gall bladder. In six patients-sub-hepatic drain was placed, which persisted for 24-48 hours.

Postoperative complications were also negligible. Only seven patients had some degree of postoperative problems or complications in the form of vomiting (three patients), wound sepsis (two patients) and mild chest infection (two patients).

In this study, the conversion rate was 9%, a much lower incidence compared to the study of Shapiro and Costello who showed a conversion rate of 30% in patients with acute cholecystitis treated by laparoscopic cholecystectomy due to increased wall thickness detected by ultrasonography[7]. There was no biliary leakage in this series, which is consistent with the results of the study where 152 patients underwent laparoscopic cholecystectomy for acute cholecystitis[8]. But there is a reported incidence of bile duct injury in 4% case in another study where 50 patients of acute cholecystitis underwent laparoscopic cholecystectomy[9].

Mean time required for laparoscopic cholecystectomy in this series was 54.54 minutes, which ranged from 45-90 minutes. Patients with severe adhesions required more time to perform the laparoscopic procedure. Duration of operation time varied directly with the duration of acute attack. Earlier the operation from the onset of attacks less the time required for it.

Laparoscopic cholecystectomy is considered as the treatment of choice for patients with acute symptomatic gall bladder disease. Five among 32 patients came after seven days from their onset of attack and three of them underwent conversion to open procedure due to dense adhesion. Therefore, this study suggests that laparoscopic cholecystectomy is

feasible within seven days after the onset of attack and preferably better if it can be done within three days of attack. But adequate training and experience is required to deal with this sort of patients, therefore, it may be suggested that in the early phase of the learning curve, laparoscopic cholecystectomy in acute cholecystitis should be avoided. So, in experienced hands this offers the patients less postoperative pain and disability then open procedure and permits earlier discharge from hospital and rapid return to work. It also offers better scar and less psychological stress[10].

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Bath PUVA in the Treatment of Palmoplantar Psoriasis

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Summary:

During the period of May 2000 to April 2005 a total of 50 cases (30 male and 20 female) of 20 to 50 years age groups were studied at the Department of Dermatology & Venereology, Combined Military Hospital (CMH), Dhaka Cantonment, Dhaka with different types and grades of palmoplantar psoriasis (PPPS) (Noble classification) to evaluate the efficacy of bath PUVA in the treatment of palmoplantar psoriasis. Diagnosis was based on clinical suspicion and confirmed by histopathological examination of lesional skin. Bath PUVA was given thrice in a week initially and then twice and once in a week according to the response of the patient.

Amelioration of symptoms in different degrees were observed in mild 62%, moderate 50% and severe cases 25% . It appears that bath PUVA is safer and effective in mild and moderate cases of PPPS if treated earlier.

(J Bangladesh Coll Phys Surg 2006; 24: 14-18)

Introduction:

Palmoplantar psoriasis (PPPS) is a chronic, recurring inflammatory disease of the skin, the course of which is unpredictable and the prognosis is also variable. Psoriasis of palms and soles may occur by itself with no evidence of psoriasis or be a part of typical psoriasis. According to our knowledge there is no exact data available about the incidence of PPPS. Palms and/or soles are involved in 10% to 21.1% of all psoriasis cases[1]. In Bangladesh no study on the issue was done earlier. The natural course of the disease varies from mild symptoms to severe disability. The etiology of PPPS has not yet been well elucidated. Genetic predisposition, environmental factors and immunological aspect are well considered for the main causes of the disease. But trauma, infection, emotional problems, drugs like NSAIDs, beta blockers, barbiturate, lithium, antimalarials, sulphonamides, hormones, metal allergens etc. all are considered to be provocating factor for the initiation of the disease process[2,3,4].

Psoralen (p) plus long wave ultraviolet radiation (UVA) is the photochemical interaction between psoralen and ultraviolet A (320-400 nm) radiation that brings about a therapeutically beneficial result not produced either by the drugs or radiation alone[5]. Photochemotherapy (topical, bath and systemic PUVA) can control the disease and sometimes gives a prolonged remission to a number of dermatological conditions[6,7,8]. The present study was undertaken with a view to find out the efficacy of bath PUVA in the treatment of PPPS.

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Materials and methods:

A prospective study was done to see the effectiveness of bath PUVA in the treatment of palmoplantar psoriasis. The study was conducted among 50 cases of PPPS aged 20 to 50 years in the Department of Dermatology & Venereology, CMH, Dhaka Cantonment, Dhaka during May 2000 to April 2005 including two years follow up. The patients were enrolled between May 2000 to April 2003. The samples were selected purposively. Cases having only palms and soles involvement were included. Most of the cases were admitted in the hospital and a few cases were treated as outdoor patients. All the patients had been unresponsive to treatment with topical application of potent steroid, 20% urea cream, 10% salicylic acid and emollients. Improvement was noted on the basis of erythema, induration and desquamation.

Diagnosis of the cases was based on history, clinical findings and confirmed by histopathological study. Routine laboratory investigations were done to exclude other similar diseases coming under differential diagnosis like tineasis, contact dermatitis,

pompholyx, juvenile plantar dermatosis and keratoderma. All these tests were carried out in the laboratory of Armed Forces Institute of Pathology, Dhaka Cantonment, Dhaka. The clinical expression of PPPS are many folds. Noble distinguished four clinical variants of palmoplantar psoriasis:

1. Typical red patches sharply demarcated and covered by adherent psoriatic scales.
2. Diffuse mild hyperkeratosis with rhagades and scales.
3. A very thick hyperkeratotic layer resembling hereditary type of palmoplantar keratoderma; and
4. A diffuse erythema.

In this study, the categorization of PPPS was done depending on Noble categorization as follows:

Mild - Noble type 1 and 2 (Fig.-1a)
Moderate - Noble type 3 (Fig.-2a)
Severe - Noble type 4 (Fig.-3a)

Bath PUVA (topical psoralen bath with ultraviolet light A): 2 ml of 8-methoxysoralen lotion was mixed with 2 liters of plain tap water and then immersed

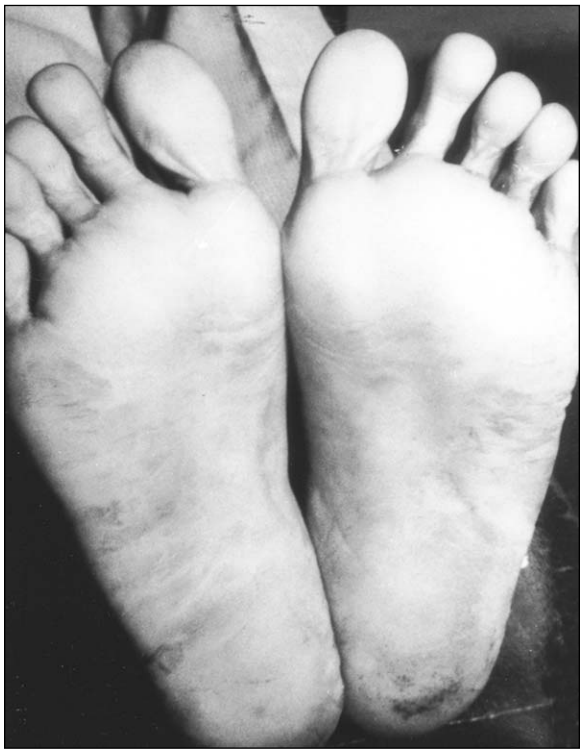

Fig.-1 (a): *Before treatment in mild type of PPPS.*

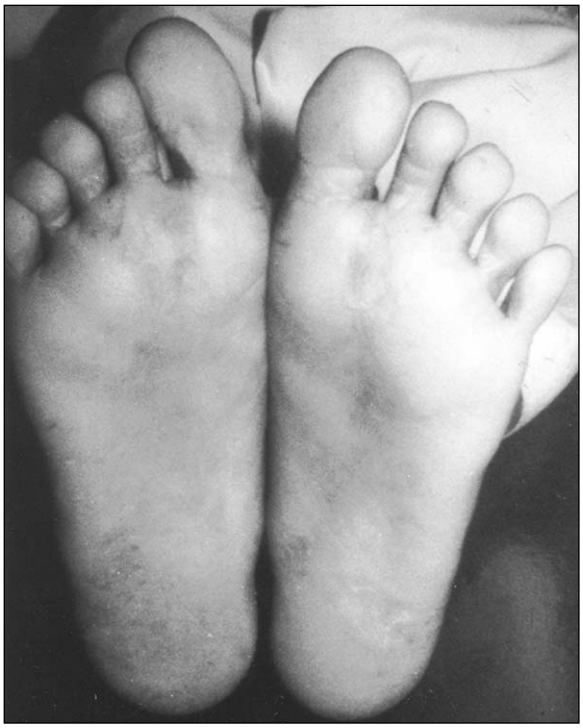

Fig.-1 (b): *After treatment in mild type of PPPS.*

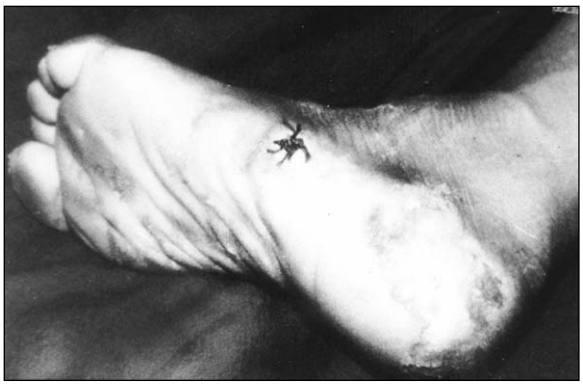

Fig.-2 (a): *Before treatment in moderate type of PPPS.*

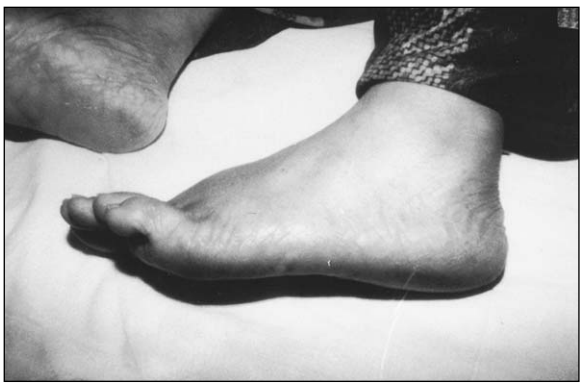

Fig.-2 (b): *After treatment in moderate type of PPPS.*

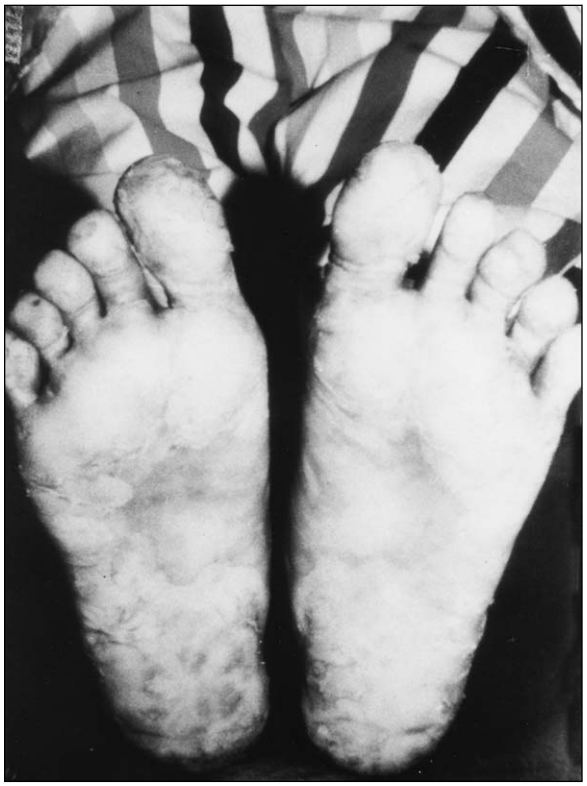

Fig.-3 (a): *Before treatment in severe type of PPPS.*

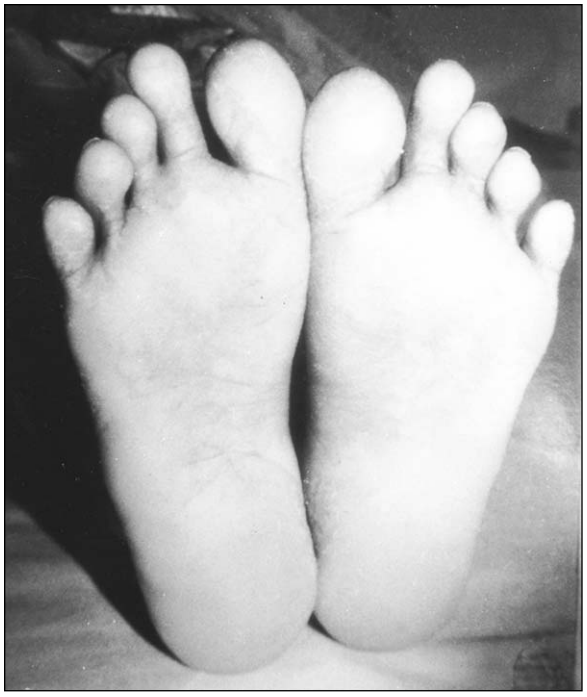

Fig.-3 (b): *After treatment in severe type of PPPS.*

both hands and feet into psoralen mixed water for half an hour. After drying UVA was given by dermaray machine of Eisai and Torex company of Japan. The wavelength of UVA was 8 mw/cm^2. Bath PUVA was given thrice in a week initially and then twice and once in a week according to the response of the patient over a period of 3-6 months. The initial dose of UVA was 2.5 j/cm^2 and increased the dose .5 j/cm^2 weekly upto 6.5 j/cm^2. Patients were followed up monthly for another two years. Adjuvant therapy was given as 20% urea cream twice daily. Improvement was noted on the basis of erythema, induration and desquamation.

Results:

Among the 50 cases, 20 (40%) were between the age group of 40-50 years. The mean age of the cases was 35.06 years with standard deviation ± 8.93 years (Table-I). The distribution of the cases by sex shows that thirty were male and twenty were female (Table-II). Twenty (40%) suffered from the symptoms of PPPS for less than six months duration followed by eighteen (36%) for six months to two years and twelve (24%) cases for more than two years duration (Table-III).

In this study, the grading of the disease process on the basis of Noble categorization shows mild type of PPPS in twenty six, moderate type of PPPS sixteen and severe type of PPPS in eight cases (Table-IV). In mild cases, average number of UVA exposure was 30 and dose of UVA was 85 j/cm^2, in moderate cases, average number of UVA exposure was 40 and the dose of UVA was 125 j/cm^2 and in severe cases, average number of UVA exposure was 45 and the dose of UVA was 145 j/cm^2. Among them sixteen cases were cleared off lesions in mild type (Fig.-1b), eight in moderate type (Fig.-2b) and two in their severe type of PPPS (Fig.-3b) (Table-V). During two years follow up period, relapses were observed among two mild cases, three moderate cases and in one severe case (Table-VI). During the study, no gross side effects have been observed.

Table-I

Shows the distribution of age of the study population (n=50)

Age in years	No of patients	Percentage
20-30	14	28
30-40	16	32
40-50	20	40

Mean ± SD = 35.06 years ± 8.93 years

Table-II

Shows the Sex distribution of the study population (n=50)

Sex	No. of patients	Percentage
Male	30	60
Female	20	40

Table-III

Shows the duration of symptoms of the study population (n=50)

Duration of symptoms	No. of Patients	Percentage
< 6 months	20	40
6 months to 2 years	18	36
Over 2 years	12	24

Table-IV

Shows the grading of the disease process on the basis of Noble categorization (n=50)

Grading	No. of patients	Percentage
Mild	26	52
Moderate	16	32
Severe	08	16

Table-V

Shows the result of treatment with bath PUVA (n=50)

Grading	Average Number of exposure	Total dose of UVA j/cm2	No. of patients	No. of patients cleared off	Percentage of patients cleared off
Mild	30	85	26	16	62
Moderate	40	125	16	08	50
Severe	45	145	08	02	25

Table-VI

Shows the relapse during follow up period (n=50)

Grading	No of patients cleared off	No. of relapse	Percentage
Mild	16	02	12.50
Moderate	08	03	37.50
Severe	02	01	50

Discussion:

In the present study, it has been observed that bath PUVA was effective in the treatment of PPPS in 62% mild cases, 50% moderate cases and 25% severe cases. So, bath PUVA appeared to be more effective than potent steroid, 10% salicylic acid, 20% urea cream and emollients which has been previously used by these patients. It is now widely accepted that bath PUVA can be used safely and effectively in both adults and children in case of PPPS and also in other forms of psoriasis[1,9].

Bath PUVA does not have any gross side effects (erythema, pain, blistering and patchy hyper-pigmentation) on the skin and also it does not produce phototoxicity like systemic PUVA[10].

Bath PUVA acts on PPPS as an antiproliferative, immunosuppressive and antiinflammatory agent. Therefore, bath PUVA seems to have a similar mode of action in the treatment of other forms of psoriasis[11,12].

Other drugs like retinoids, methotrexate, systemic PUVA have been used to treat PPPS and also other forms of psoriasis[13]. However, long term use of these drugs may induce serious adverse effects like phototoxicity, liver damage, pseudotumour cerebri, teratogenic effects, induction of carcinogenesis, hyperlipidemia etc.[13,14]. So, considering the side effects and effectiveness bath PUVA is safe and effective in mild and moderate cases of PPPS, if treated earlier.

In this study, bath PUVA cleared of lesions in 62% mild cases of PPPS which is better than previous regimens. So, bath PUVA can be highly efficient in the treatment of palmoplantar psoriasis. However, more research may be done on this aspect to confirm the effectiveness of bath PUVA.

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A Clinical Study on Extrapulmonary Tuberculosis

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Summary:

Findings of 80 patients of extra-pulmonary tuberculosis are described in this study. Most of the patients were under 30 years of age (71.2%), female patients were 56.3% and housewives were 37.3%. Lower socio-economic class were commonly affected (66.2%). Eighteen patients (22.5%) were smoker and almost equal number of cases had the history of intake of un-boiled milk. 44% patients were not vaccinated against tuberculosis. 36.2% patients had history of contact with tuberculous patients and 18.8% had previous history of tuberculosis. 70% patients had the history of fever and 30% had history of cough. Significant weight loss was noted in 85% patients. Lymph node tuberculosis was 36.2%, abdominal tuberculosis 35%. Cervical lymph nodes alone (37.9%) were commonly affected among the lymph node tuberculosis. Diagnosis was mainly based on histopathological examination or biopsy of specimen (97.5%) and demonstrations of AFB was possible in 2.5% cases. Along with surgical treatment medical treatment (chemotherapy) were prescribed in every patient. Forty-eight patients came for follow up. All responded to anti tubercular chemotherapy.

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Introduction:

Tuberculosis (TB) can affect almost any organ of the body and although the most common presentation is pulmonary, extra pulmonary disease is not rare. The sites involved in extra-pulmonary tuberculosis are lymph nodes, abdomen, bones, joints including spine, genitourinary system and central nervous system. Some patients may present with miliary tuberculosis. Others may present with abscess, fistula and cutaneous lesion. Presentation of extra-pulmonary disease may be atypical or relatively insidious and tuberculosis may not be considered initially in differential diagnosis. This is an important phenomenon as delay in diagnosis may be crippling or even life threatening.

In a survey of notification of Tuberculosis in England and Wales conducted by Medical Research Council (MRC) in 1983[1] the disease was classified as pulmonary in 68%, extra-pulmonary 25% and both 7%. Hence, 32% of newly notified patients with tuberculosis presented with extra pulmonary manifestation. For the patients of Indian Subcontinent (ISC) in the survey the figure were 54%, 34% and 12% respectively. Hence, 46% of newly diagnosed patients with tuberculosis in ISC had extra pulmonary tuberculosis. In 1983 the overall notification rate for non-respiratory disease was 51 times as high for the ISC (81per 100000) as for the white group (1.6 per 100000). In a more recent survey of 2163 previously untreated patients notified in 1988, 698(32%) had extra-pulmonary tuberculosis of which 395 (57%) were of ISC ethnic origin.[2]

In the USA the proportion of all reported cases of extra pulmonary tuberculosis has risen from 8% in 1964 to 15% in 1981 and 17.5% in 1986[3,4]. The same trends have been observed in Hong Kong.

The patients infected with HIV have a high risk of developing tuberculosis of all forms particularly extrapulmonary ones like lymph node and meningeal TB. TB is also rapidly progressive in HIV infected person.[5]

Hence the recognition and diagnosis of extra pulmonary lesion are likely to assume a greater importance in the foreseeable future.

The objective of the present study was to identify the various presentation of extra pulmonary tuberculosis in our country, to see the response to 1st line anti tuberculous treatment and also to evaluate problems related to patient management. This may form the basis of further study and might help in planning and policy making in future.

Materials and methods:

This was a prospective, cross-sectional, observational study conducted among the patients who were admitted either in Chittagong Medical College Hospital or other city hospitals in Chittagong with features of extra pulmonary tuberculosis. The study period was August 2001 to May 2003. A detailed history, complete physical examination, various

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laboratory work and radiological studies were carried out. Histological confirmation was tried in every case. Diagnosis of TB was made by histological or cytological examination or demonstration of Acid Fast Bacillus. Informed consent was taken from the patient or guardian about participation in the study with the right not to participate.

The cases were treated with anti tuberculosis chemotherapy (WHO Schedule) and the patients were followed up in a follow up clinic during the period of chemotherapy.

All findings were noted in case record form. The results were calculated and interpreted through appropriate statistical analysis with the help of a statistician and presented in tables and other illustrations.

Results:

During the study period 80 patients of extra pulmonary tuberculosis were diagnosed and treated. Of them sixteen were transferred from other disciplines for surgical intervention. All patients received anti tuberculous chemotherapy according to the recommendation of WHO and they were followed up in a follow up clinic. Adjustment of drug was done or changed depending on the response and complications.

Among the patients 35 were male and 45 were female. Female patients predominated in this series. Age ranged between 13 to 62 years with a mean age of 27.5 ± 11.1. Clinical presentation was variable. Most common manifestation was neck swelling due to tuberculous cervical lymphadenopathy. Abdominal pain and distension was present in 18 and 14 cases respectively. Classical presentation of lump in the right iliac fossa was present in ten patients. One patient presented with ulceration near the anal canal without any internal pathology. One patient had carcinoma stomach and peritoneal tuberculosis. The mode of presentation is shown in Table-I.

Table-I

Mode of presentation of cases of extra-pulmonary tuberculosis (n=80).

Presentation	Number of cases	Percentage
Neck Swelling	25	31.2
Abdominal pain	18	22.5
Abdominal distension	14	17.5
Swelling over different parts of the body	9	11.2
Abdominal lump, right iliac fossa	8	10.0
Fever	7	8.7
Vomiting	6	7.5
Swelling in the axilla	6	7.5
Lump in the breasts Right	3	6.2
Left	2	
Swelling over sternum	2	2.5
Scrotal swelling	2	2.5
Per rectal bleeding	1	1.2
Jaw swelling	1	1.2
Discharging sinus over back	1	1.2
Swelling in the right groin	1	1.2
Perianal swelling	1	1.2
Swelling in the laparotomy wound	1	1.2
Low back pain	1	1.2
Inability to move limbs	1	1.2
Constipation	1	1.2
Swelling in the right iliac region	1	1.2
Multiple discharging sinus of left foot	1	1.2
Discharging sinus over sternum	1	1.2
Discharging sinus from appendicectomy wound	1	1.2
Perianal ulcer	1	1.2

Young patients of 12 to 30 years accounted for about three fourth of total cases. Age distribution of this series is shown in Table-II.

Table-III shows relationship of age and tuberculosis of different extra-pulmonary site. Both cervical lymphadenopathy and abdominal tuberculosis occured at similar age. Comparatively late presentation was seen in bone (spinal) and musculoskeletal tuberculosis.

Relationship between different occupation and tuberculosis at different sites were studied. Housewives residing at home by far the largest group (37.5%). Young students were also common victims (17.5%).

People of lower income group were found to be more commonly affected confirming the higher prevalence in overcrowded, unhygienic living condition and having probable malnutrition. 66.2 % TB were seen in lower class whereas in higher class it was only 6.2%.

Eighteen (22.5%) out of 80 patients were smoker while 17 (21.2%) had history of taking un-boiled milk.

Table-II

Distribution of age and sex among the different varieties of extra-pulmonary tuberculosis (n=80)

Types of EPT*	Age Groups						Sex		Total	%
	12-20	21-30	31-40	41-50	51-60	61-70	Male	Female		
Lymph Node TB	11	10	4	4			10	19	29	36.2
Abdominal TB	8	9	7	3		1	13	15	28	35
Taberculous Abscess	2	6	1				7	2	9	11.2
Breast TB Right		3						3	5	6.2
Left		1			1			2		
Musculo-skeletalTB	1	1	1				1	2	3	3.7
Spine TB	1				1			2	2	2.5
Perianal abscess, ulcer	1	1					2		2	2.5
Genital TB (Testis)	1	1					2		2	2.5
Total	25	32	13	7	2	1	35	45	80	
Percentage	31.2	40	16.25	8.7	2.5	1.2	43.7	56.3		

*EPT: Extra-pulmonary tuberculosis.

Table-III

Age distribution in different categories of extra-pulmonary tuberculosis (n=80).

TB Type	Number	Minimum	Maximum	Mean	SD	% of Total (n=80)
Lymph node TB	29	13	50	26.2	10.4	36.2
Abdominal TB	28	13	62	28.2	11.4	35
Tuberculous abscess	9	13	45	27	9.2	11.2
Breast TB	5	20	60	31.2	16.3	6.2
Musculoskeletal TB	3	22	40	28	10.4	3.7
Spine TB	2	15	55	35	28.3	2.5
Perianal abscess & ulcer	2	27	27	27	27.2	2.5
TB testes	2	20	20	20	18.3	2.5
All cases	75	13	62	27.5	11.1	100

56% patients were vaccinated against tuberculosis and 44% were not. Scar marks of vaccine were present in 97.6% of patients who were vaccinated.

18.8% (n = 15) patients had previous history of tuberculosis, among which 11 patients (73.3%) were treated incompletely. 36.2% (n = 29) patients had history of contact with a patient of pulmonary tuberculosis. 23.8% (n = 19) patients had definite family history of tuberculosis where most of the family member (n = 13) were treated and declared cured.

Out of 80 patients in this series 42(52.5%) were living in over crowded rooms. One patient had diabetes mellitus and one was on steroid therapy. Both contributed to resistance.

Fever and weight loss were common complaints. Fever was present in 70% patients in the series. Three fourths of them had low-grade evening rise of temperature. Only a quarter of the patients had high fever in the course of illness. Weight loss was seen more frequently (81.2%).

Though cough was complained by only 30% of patient half of them had productive cough. 45% patients were clinically anemic.

Twenty-nine patients of this series had tubercular lymphadenopathy including secondary cold abscess (Fig.-1,2). Nearly half of them had involvement of multiple groups. One third had only cervical lymphadenopathy. Posterior triangle group being more commonly affected. One had submandibular lymph node involvement. This is shown in Table-IV. Table-V shows physical examination findings of different lymph node groups.

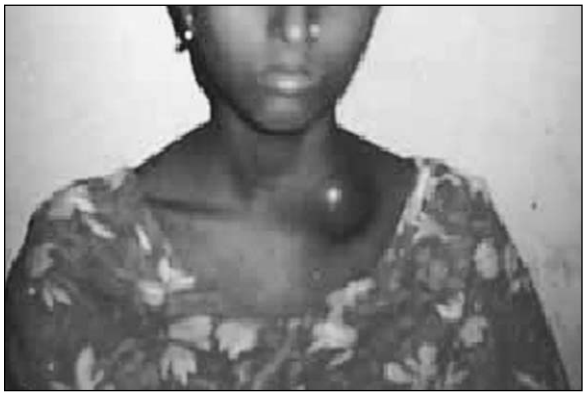

Fig.-1: *Cold abscess before burst*

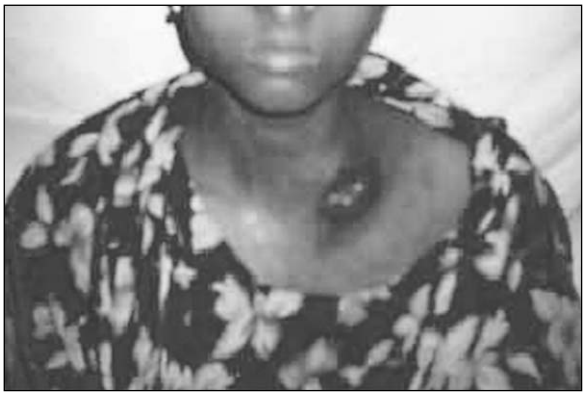

Fig.-2: *Cold abscess after burst*

Table-IV

Distribution among the different groups of lymph nodes (n=29)

Cervical	Side	Superficial	Deep	Posterior	Spraclavicular
	Right	4	8	13	8
	Left	2	5	14	5
Axillary	Side	Anterior group	Posterior	Central	Apical
	Right	5	1	10	0
	Left	5	2	11	2
Inguinal	Side	Superficial	Deep		
	Right	7	5		
	Left	6	5		
Submandibular	Side	Single	Multiple		
	Right	1	4		
	Left	0	5		

Table-V

Presentation and findings of lymph node tuberculosis in details (n=29)

Features	Cervical group		Axillary group		Inguinal group		Submandibular group	
	Right	Left	Right	Left	Right	Left	Right	Left
Single Node	4	5	6	6	0	0	2	1
Multiple Nodes	17	15	6	7	6	7	3	3
Discrete	6	10	8	8	3	7	2	2
Matted	11	8	4	3	1	0	1	2
Rubbery	1	3	2	3	1	2	1	1
Pain	7	11	4	2	1	0	2	2
Tenderness	8	11	4	2	1	0	2	1
Irregularity	3	5	1	1	1	0	0	0
Fixity with overlying skin	9	10	1	1	0	0	2	1
Fixity with underlying structures	14	13	4	3	2	2	4	3
Abscess	6	5	0	0	0	0	0	0
Discharging sinus	4	1	2	2	0	0	0	0

Twenty-eight cases (35%) had operations for abdominal tuberculosis. Of these half had involvement of small gut only in the form of stricture and stenosis. 10 (35% of abdominal tuberculosis) cases had lump in the right iliac fossa due to involvement of ileo-caecal region. Mesenteric lymph nodes were involved in all cases (Table-VI)

Presentation in majority of cases were chronic abdominal pain, lump in right iliac fossa or signs of intestinal obstruction. One-third patients were admitted with acute complications like perforation or obstruction. One of them had clinical diagnosis of acute appendicitis. Clinical findings are presented in Table-VII.

Table-VI

Distribution of sites of abdominal tuberculosis along with percentage (n=28)

Sites	Number of cases	Percentage
Small gut	14	50
Ileo-caecal	10	35.7
All parts	4	14.3
Lymph nodes	In all cases	100

Table-VII

Modes of presentation and findings of abdominal tuberculosis (n=28)[There are overlapping of presentation]

Acute Abdomen	Cases	Percentage	Chronic Abdomen	Cases	Percentage
Pain	10	100	Pain	11	61.1
Perforation	7	70	Lump	10	55.5
Peritonitis	7	70	Obstruction	8	44.4
Obstruction	3	30	Visible peristalsis	7	38.9
Shock	2	20	Ascites	4	22.2
Intussusception	1	10	Alteration of bowel habit	4	22.2
Appendicitis	1	10			

Nine cases of tubercular abscess were found in different parts of the body, three cases in the back of chest, three cases in the back, neck abscess were found in two cases and perianal abscess in two.

Five cases of breast abscess were found. Two of them were pregnant. They presented with pain, lump, abscess and discharging sinus in the breast. In two cases there were axillary nodal involvement. In one case there were abscess in right thigh (Fig.-3).

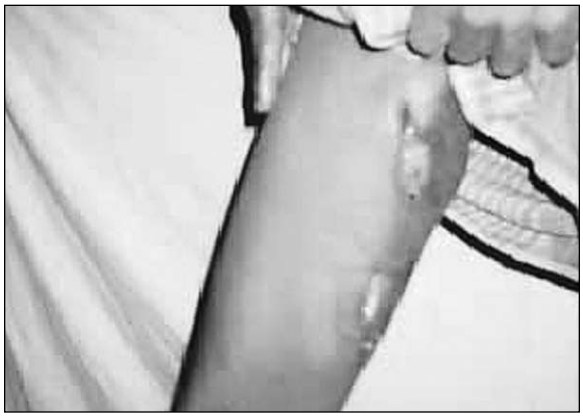

Fig.-3: *Right thigh abscess (after drainage)*

Diagnosis was based on histopathological findings of caseating or non caseating granuloma (Fig.-4). Excision and biopsy were done in 41 cases (51.2%) and lymph node biopsy in 26 cases (32.5%). Only in eleven cases FNAC were done from lymph node or the palpable lump and tuberculosis was confirmed. Two patients with abscess had AFB on stain (Fig.-5). Spinal tuberculosis was diagnosed on the basis of clinical and typical radiological findings (supplemented by FNAC).

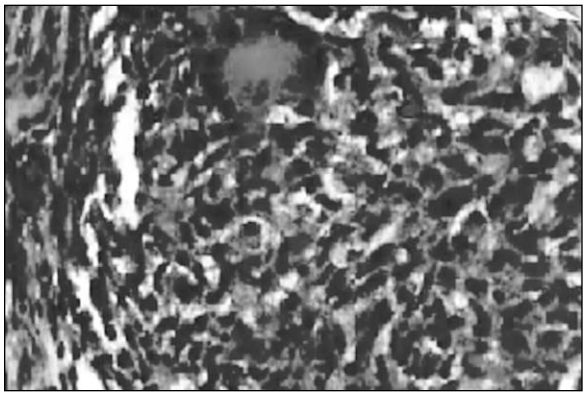

Fig.-4: *Tuberculous granuloma*

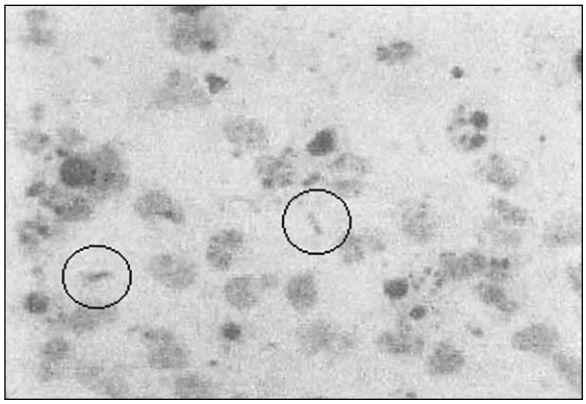

Fig.-5: *Mycobacterium tuberculosis in AFB stain*

22.3% patients (n = 16) had Hb% below 10 gm/dl, 70.5% patients (n = 50) had ESR above 50 mm in 1st hour, 26.5% patients (n = 18) had features of pulmonary tuberculosis in chest X-ray, 66.6% patients (n = 34) had positive tuberculin test.

Surgical interventions were needed in almost all patients either for diagnosis or for therapeutic purpose. It is shown in Table-VIII. Lymph node biopsy was done in 26 patients (32.5%). 10 patients (12.5%) were treated by incision and drainage for their abscesses including breast. Daily dressing was done later followed by secondary closure. Resection and anastomoses were required in 13.7% patients (n = 11) for stricture, stenosis and perforation in the ileum and jejunum. Stricturoplasty was done in one patient. Ileostomy was done in two patients for diffuse peritonitis. Right hemicolectomy was done in 10% (n=8) patients for lesion in the terminal ileum and ileo-caecal growth. Perforation of ileum was repaired in two cases. One had leakage and ileostomy was done later on. Aseptic aspiration of pus was done in two cases for sternal abscess. Later both these were referred to Institute of Chest Disease and Hospital for further management. Laminectomy with removal of extradural mass was done in one case. Right-sided orchidectomy was done in one patient with testicular tuberculosis.

All patient were treated with standard anti-tubercular chemotherapy except one who died in early postoperative period.

Forty-eight patients came for follow up out of which 44 patients responded completely to anti-tubercular chemotherapy. Adverse effects in the form of

jaundice and optic neuropathy were noted in two cases and treated successfully. There was no response to drugs in 4 cases. Culture and sensitivity for *Mycobacterium tuberculosis* were done and treated accordingly. Relapse were noted in two cases and were treated with second line therapy with addition of Ciprofloxacin (750mg) twice daily for initial two months in one of them and co-amoxiclav (625 mg) thrice daily for initial two months in other patient along with conventional antituberculous therapy. Both responded with the above medication.

Discussion:

The primary objective of this study was to record clinical presentation in confirmed cases of extra-pulmonary tuberculosis. The study showed neck swelling as the commonest presenting feature (31.2%), which indirectly represents tubercular cervical lymphadenopathy. Including other groups, lymph node tuberculosis is 36.2%, which is the commonest of extra-pulmonary tuberculosis in this series. Similar observations were also reported by Faiz in 1990[6], Alvarez 1984[7], Farer 1979[8], Mokhtar 1983[9] and Froude et al, 1982[10]. The patients presented with abdominal pain and distension were 22.5% and 17.5% respectively. These were the patients of abdominal tuberculosis, which is 35% in this study. It is similar to data of Medical Research Council. Surveyed in 1983 for Indian subcontinent (ISC) ethnic group in which lymph node tuberculosis was 52% followed by abdominal tuberculosis (14%)[11].

Majority of the patients n = 32 (40%) were between 21-30 years age group followed by 31.2% in 12-20 years age groups. So 71.2% of patients are under 30 years of age, which is similar to observation of Hayati-IN et al[12].

There is overall preponderance of female (56.3%) as compared to male (43.7%). But Faiz in his study showed 62% were male and 38% were female[6]. Farer et al, reported 55% male and 45% female[8].

Incidence of extra-pulmonary tuberculosis is more common among the housewives (37.5%), which is 48% in another study conducted by Chowdhury in Chittagong Medical College Hospital on lymph node tuberculosis[13]. But starting from university teacher to prisoner all were affected, though lower class were frequently (66.2%) affected. Among the affected patients 56% were vaccinated against tuberculosis. So, vaccinated patient may also be affected by tuberculosis. This observation is similar to the study done earlier by Chowdhury[13]. In our country housewives or female family members are responsible for taking care of ill patients. This may be the cause of female preponderance of housewives in this study.

About 22.5% of patients were smoker. Similar proportions have the history of intake of un-pasteurized milk. So, milk still may be transmitting media of tuberculosis. This was also observed by Islam and Quayum[14]. 36.2% patients had the history of contact with a diagnosed case of pulmonary tuberculosis, which is 38% in the study made by Chowdhury[13].

In this study population, 18.8% patients had previous history of tuberculosis of which 73.3% were incompletely treated. Being a curable disease it needs much public awareness about the outcome of tuberculosis both from medical practitioner and government sector. 23.8% patients had family history of tuberculosis of which most were treated and cured (72%) with a few maltreated (11.1%) and untreated (5.5%) cases. Being a communicable disease other family members of a tuberculous patient should be aware of it and must take necessary measures to avoid the transmission of the disease.

Forty-two (52.5%) patients came from overcrowded condition. In this study, 93.7% of patients came from lower and middle class. Same observations were noted by Chowdhury[13]. So, this confirms that tuberculosis is more common among the lower socio-economics. None was on immunosuppressive therapy in the study population.

In this study 56 patients (70%) had the history of fever - 68% had low grade, 71.4% having evening peak and in 62.5% of cases subsides with sweating. 30% patients had no history of fever at all. 30% patients had history of cough of which 15% were unproductive and 15% were productive.

Among the study population 45% of patients had various degree of anemia, 68 patients (85%) had

significant weight loss. Significant weight loss was also noted among the higher socio-economic class. So, weight loss is the single most common physical abnormality among the extra-pulmonary tuberculosis. Weight loss was also documented in other studies Chowdhury[13] 81%.

22.3% patients had Hb% below 10 gm/dl, ESR was more than 50 mm in 1st hour in 70.5% patients. 26.5% patients had pulmonary lesion on chest X-ray. Tuberculin test was positive in 66.6% of patients. Similar observation were found by Lau-SK et al[15,16,17], Chowdhury[13].

In this study lymph node tuberculosis was found to be common (36.2%) among the extra-pulmonary tuberculosis, cervical group was most commonly affected. Cervical with other groups of involvement were 48.2%. It correlates with study conducted by Chowdhury[13] in very recent past. Posterior group of cervical lymph node were commonly involved. Multiple nodes even in a single group were frequently involved. Lymph node tuberculosis in USA is 30%, in England 50% and in Hong Kong 45% of total extra-pulmonary tuberculosis[1,18].

Among the abdominal tuberculosis small gut was frequently affected (50%) followed by ileo-caecal tuberculosis (35.7%). All patients were presented with abdominal pain in acute cases and 61% in chronic cases. Hossain[19] also observed pain (45%) as the commonest presenting feature followed by right iliac fossa lump (42%). Among the chronic cases 55.5% patients presented with right iliac fossa lump. Few cases presented with intestinal perforation, obstruction and peritonitis. Plain X-ray of abdomen was done in acute cases and barium follow through in chronic cases. Sometime patient presented with leaky intestinal perforation having no free gas shadow.

Nine cases (11.2%) presented with abscess in different parts of the body. All were drained followed by chemotherapy. In this study five cases (6.2%) were breast TB including two pregnant women, who were also treated successfully. A literature review by Morgan in 1931[20] revealed 439 cases of tuberculous mastitis with the incidence between 0.5 and 1.04 per cent. Of approximately 8000 breast specimen studied, Haagensen[21] reported only five cases of breast TB between1938 and 1967. Only 500 cases were documented from the world literature by Hamit and Rangsdale in 1982[22]. Less than 100 cases of breast TB were reported from India till 1987[23]. Several Indian series reported the incidence of breast TB amongst the total number of mammary conditions to vary between 0.64 and 3.59 per cent[24,25]. Diagnosis of breast TB specially in pregnancy is problematic owing to enlargement of breast, manifestations are masked. The disease is often overlooked and misdiagnosed as carcinoma or pyogenic abscess[26]. Opinion varies for diagnostic aids between FNAC and incision biopsy. FNAC is sometimes inconclusive. Occasionally tissue taken by incision biopsy cannot give the real reports suggestive of tuberculosis. Delay in wound healing occurred in pregnant women's breast. Breast TB caused by an atypical mycobacterium has recently been reported by Verfaillie G, et al[27].

Diagnosis was based on either histopathological or cytopathological (FNAC) examination (97.5%) suggestive of tuberculosis or demonstration of AFB (2.5%). Though 87 patients were studied but only 80 patients were included in this study. Excluded group were clinically consistent with tuberculosis, treated with anti-tuberculous chemotherapy but there was no specific histological or cytological evidence to prove tuberculosis.

Lymph node biopsy is the commonest (32.5%) surgery performed followed by resection and anastomosis (13.7%). Incision and drainage were done in 12.5% and limited right hemicolectomy in 10% of patients. Most of the patients were afraid of surgery even a small procedure like lymph node biopsy. Medical treatments were provided in all patients. Most of the patients were unable to buy such a costly drugs for a long duration of 6, 9, 12 months or so. Sometimes they have false belief in such a long duration of therapy. Irregular intake of chemotherapy was frequently encountered. The patients were anxious about the adverse effect of multiple drugs. Most of them complained of their intolerability of drugs in spite of having no such harmful effects at all. Free drugs were supplied to the patient irregularly from hospital and upazilla health complex owing to non-availability of drugs during the study period. Sometime patient discontinued the drugs due to this reason.

37.5% patients among the follow up group responded well to anti-tubercular chemotherapy. In three cases lymph nodes were enlarged further during the course of chemotherapy but subsided later on. One axillary lymph node in a female persisted after one year of treatment. Excision biopsy of it showed non-specific lymphadenitis. Few patients developed adverse effect and they were treated accordingly. Culture and sensitivity was done in non-responder and drugs were changed according to culture and sensitivity report. But long time required for culture and sensitivity report is a problem. In the mean time few patients were lost from the follow up.

Two patients (prisoner) having sternal swelling (abscess) with referred to the Institute of Chest Disease and Hospital in Dhaka.

Majority of poor patients did not come for follow up. Poor socio-economic condition, social, familial bindings and illiteracy may be responsible.

This study does not reflect the prevalence of extra-pulmonary TB in our country but indicates the diversity of clinical presentation and the diagnostic problem that might be encountered even in a country where tuberculosis is still common. Diagnosis requires high clinical suspicion, special diagnostic procedures, special staining, and culture media for acid fast bacilli. Clinical diagnosis combined with strongly positive tuberculin test, high ESR with significant weight loss may suggest tuberculosis. Delayed diagnosis results in increasing morbidity, mortality and cost to the health care system. Particularly in areas of high endemicity of *Mycobacterium tuberculosis* like us clinician should be aware of the various forms of extra pulmonary tuberculosis. Early diagnosis will prevent mortality and morbidity from this dreadful but curable disease. The available epidemiology in Bangladesh is presented in this study, but requires further study in a large scale.

Acknowledgement

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REVIEW ARTICLE

Near-Miss/Severe acute maternal morbidity (SAMM): A new concept in maternal care

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Summary:

A near-miss obstetric morbidity means a woman (in pregnancy/labour/puerperium) who almost died but survived. The near-miss: mortality ratio is a possible new indicator of maternal care and could be used to compare improvements in treatments more accurately than mortality date alone. Criteria to define and identify the cases vary greatly. The incidence ranges from 0.07% to 8.23% and the case fatality ratio from 0.02% to 37%. Massive obstetric haemorrhage and hypertensive disorders of pregnancy are two important primary obstetric causes of near-miss morbidity. Mortality index (MI) in one of the potential method of assessing the care received by SAMM cases. Population based surveys are considered preferable to collect informations of near-miss.

(J Bangladesh Coll Phys Surg 2006; 24: 29-33)

Introduction:

Despite therapeutic advances during this century and a growing perception of the safety of child birth, morbidity and mortality continue to occur in obstetric patients[1]. More than one woman dies every minute from such causes; 585,000 woman die each year[2]. In addition to maternal death, women experience more than 50 million maternal health problems annualiy[3]. As many as 300 million women-more than one quarter of all adult women living in the developing world currently suffer from short of Iong term illness and injuries related to pregnancy and child birth[4]. For every maternal death there are many serious life threatening complications of pregnancy. Yet relatively little attention has been given to identifying a general category of morbidity that could be called near-misses[5]. Stones et al [6] were the first to use the term "nearmiss morbidity" to define a narrow category of morbidity encompassing "potentialiy life threatening episodes". This concept is relatively new in maternal care, but is increasingly becoming important in areas with low maternal mortality ratios or where the geographical area is small [6,7].

Why Important:

The analysis of maternal deaths has long been used for the evaluation of women's health and the quality of obstetric care[8]. Over the last decade, the identification of cases of severe maternal morbidity has emerged as a promising complement or alternative to the investigation of maternal deaths[6,9,10]. It has been suggested that with the observed decline in maternal mortality, analysis of well defined near-miss cases may be a more sensitive measure of the standard of obstetric care[11,12]. Characterizing near-miss morbidity is valuable for monitoring the quality of hospital based obstetric care and for assessing the incidence of life threatning complications[13]. Incorporation of near-misses into maternal death enquiries would strengthen these audits by allowing for more rapid reporting; more robust conclusions, comparisons to be made with maternal deaths, reinforcing lessons learnt, establishing requirement for intensive care and calculating comparative indices[14].

What a near- miss means:

Every woman can experience sudden and unexpected complications during pregnancy, child birth and just after delivery. Morbidity during pregnancy represents part of a continuum between extremes of good health and death. On this continuum a pregnancy may be thought of as being uncomplicated, complicated, severely complicated or life threatening (Figure-1)[9]. From these conditions the woman may recover, she may be temporarily or permanently disabled or she may die. Death is the last stop on a continuum of adverse events. Survival of a pregnant woman is dependent on the disease, her basic health, the health care facilities and the personnel of the health care system[14].

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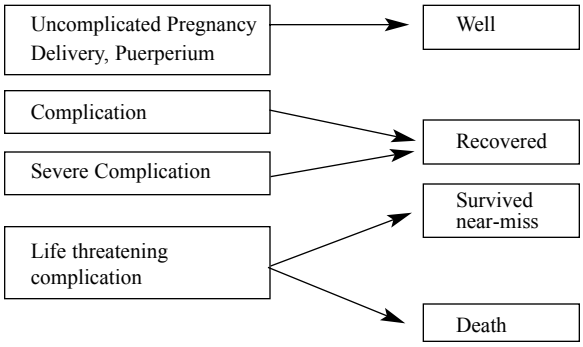

Figure:

Definitions:

There is debate surrounding what constitutes the optimum definition of severe obstetric morbidity. A number of terms are in use to describe incidents of severe maternal ill health including life- threatening complications, severe maternal morbidity or near misses[8]. Three types of approaches have been proposed for defining life threatening obstetric complications and near miss events. These approaches include definitions based on (a) management (b) clinical signs and symptoms and (c) organ systems[9].

By Mantel GD et al, a near miss describes a patient with acute organ system dysfunction, which if not treated appropriately, could result in death[15]. Prual A et al, has defined severe maternal morbidity as severe complications from 28th week of gestation to 42nd day postpartum that would have resulted in death of the mother or a definite invalidating sequelae without medical intervention[16]. Some studies have used intensive care unit (ICU) admissions to define near miss morbidity[10,15,18]. According to Murphy DJ et. al, all- women admitted for ICU in pregnancy or upto 42 day postpartum are considered as near-miss maternal mortality[19]. By Pattinson RC et al., Severe Acute Maternal Morbidity (SAMM) also known as "near-miss" case means a woman with organ dysfunction or failure who would have died had it not been that luck or good care was on her side[20]. During an international seminar held in Morocco, a near-miss case was defined as "any pregnant or recently delivered or aborted woman whose immediate survival is threatened and who survives by chance or because of the hospital care received[21].

Controversies in definitions:

In developed countries, most of the definitions of life threatening obstetric complications and near-miss events are management based[8] Admission to intensive care has been taken as the most commonly used management criterion[6,10,11,17-19,22-27]. Other examples of management criteria used in the definition of life threatening complications Include the use of emergency hysterectomy[15,28-34], caesarean section[35] blood transfusion[35] hospitalization for more than four days[35] and anaesthetic accidents[15].

The most frequently used definition based on management was admission to ICU. The main advantage of this definition was its simplicity and the ease of data collection[8] but admission to ICU may not be an ideal end point since it is sometimes influenced by factors other than the extent of morbidity, for example, differences in policies among different maternity units or sometimes the availability of beds in an intensive care unit[32].

When the definitions are based on clinical signs and symptoms there remain several difficulties. These definitions require the consensus of clinicians on criteria of severity, which can be difficult to obtain given the diversity of clinical experience[8]. As for example, severe vaginal bleeding has been defined by Girard F. et al, (France, 2001)[36] as blood loss> 1500 ml if measured or haemorrhage leading to abnormalities of coagulation; whereas Prual A. et al, (Niger, 1998)[37]. has suggested hypovolemic shock requring blood transfusion to be considered as severe vaginal bleeding and Mantel et. al (South Africa 1998)[15] considered hypovolemia requiring 5U blood as severe vaginal bleeding.

The organ system based definition used by Mantel et al.[15] and Schoon MG may be the most accurate definition of a life threatening complication or near-miss in that the diagnosis requires technologies which may not be available in many developing country hospitals (for example: oxygen saturation).

Incidence /Prevalence:

Epidemiological data about maternal morbidity are rare . Large discrepancies exist between the surveys due to different inclusion criteria. The incidence of severe maternal morbidity ranges from 0.07 to 8.23%,

the case fatality ratio from 0.02 to 37%[8]. There is a big difference between case fatality ratio in developing and developed countries. For example, the studies conducted in Niger, Benin and Malaysia given the morbidity to mortality ratio as 11-12[13,37,39], while this is 117-223 in studies conducted in Europe [36,40] in the category where disease specific criteria are used. The same applies to the category of organ system based criteria, morbidity: mortality ratio is 5-8 in South Africa[15,20,37] and 49 in Scotland[41]. The high case fatality rates of several complications reflect a poor quality of obstetric care.

Cause of near-miss morbidity:

In different studies, the primary obstetric causes of severe maternal morbidities have been found to be hypertensive disorders of pregnancy, massive obstetric haemorrhage and sepsis[15,16,20,39-41,43]. Obstructed labour has been found to be an important cause in some studies[16,39].

Risk factors:

The risk factors of severe maternal morbidites have been identified as *maternal age >34, *social exclusion, *non-white, *hypertension, *previous PPH, *delivery by emergency caesarean section, *multiple pregnancy and *antenatal admission to hospital[40]. Low status of women who do not attend antenatal care in a given health unit but are referred there when they develop life-threatening obstetric complications, contribute significantly to maternal morbidity[42]. Induced abortions conducted by untrained village midwife (DAI) is still a major cause of morbidity in the developing countries[43].

Methods of assessing the care received by SAMM cases:

Different approaches are used as potential methods of assessing the care SAMM cases receive. Mortality Index (MI) is defined as the ratio of maternal deaths among the SAMM cases to the sum of material deaths and SAMM cases[14,44]. It represents the proportion of women who presents with a SAMM and subsequently dies[44]. Another approach is to calculate the ratio of SAMM to mortality[40,41].

The term "Conversion rate" was used for the first time by Pattinson RC et al,. By them , the conversion rate is the number of maternal deaths SAMM + maternal deaths and expressed as a percentage. It gives an indication of how successful is the clinician in treating a particular complication[20].

How to collect information's of near-miss cases:

Since the majority of cases of life threatening complications require hospital care to save the women's life, the hospital records are the most likely source of information on these complications[45]. But the problems are: many patients may not reach to a health care facility (particularly in a developing country), registers may be incomplete and informations may have to be collected from a series of registers other than obstetric unit. In a review prepared by Minkauskiene M[8], it has been suggested that population based surveys[16,3-5,38,40,47,] are preferable because the situation has to be depicted in a complete health area taking into account all medical facilities playing a role in obstetric health fields.

Conclusion:

Severe obstetric morbidity and its relation to mortality may be more sensitive measures of pregnancy outcome than mortality alone[40]. Including SAMM in maternal death audit increases the rapidity with which health system problems can be identified[47]. But the criteria currently used to identify a near-miss vary greatly. There is a clear need to set uniform criteria to classify patients as SAMM. This standardization could be made for similar settings separately[48].

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CASE REPORT

Double Intervention in Single Sitting in a Girl with Atrial Septal Defect and Patent Ductus Arteriosus: A Case Report

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Summary:

Atrial septal defect (ASD) and patent ductus arteriosus (PDA) are commonly encountered problems and constitute about 20% of all congenital heart lesions. Association of these two conditions in a single patient is not very uncommon. Both these conditions can be treated by placing intracardiac devices. Double interventional closure of Atrial Septal Defect (secundum type) and Patent Ductus Arteriosus was performed in single sitting in a 12 year-old girl in Catheterization Laboratory of CMH Dhaka. This is the first ever-reported double interventional closure of two separate diseases in a single patient in single setting, which led writing this report.

(J Bangladesh Coll Phys Surg 2006; 24: 34-37)

Introduction:

Surgical treatment of various septal defects has been established for long. Closure of septal defects in catheterization laboratory has also been introduced long ago when Patent ductus arteriosus (PDA) was closed first in 1967[1]. In 1979 Rashkind et al, reported on an umbrella device for PDFA closure. Then came other devices like Gianturco coils, detachable coils, Cardioseal and Amplatzer PDA occluder[2,3,4,5]. Major options for closing Atrial septal defect (ASD) for the last 10 - 15 years are: Clamshell device, Sideris 'buttoned device', ASDOS device, 'Angwel wings' device, Amplatzer ASD device, Amplatzer PFO device and Cardioseal. The progress of ASD device closure has been slow since first use in 1976 because of some device related complications [6,7].

But Amplatzer ASD device is safe where a large device could be delivered through a small sheath and chance of embolization is less [8]. In the present case a detachable coil of 5x3 mm size was used for PDA occlusion and a 24 mm AMPLATZER ASD occluder was used for ASD closure. This patient is under follow up for the last 15 months, no complication was encountered and is leading a normal life.

Case report:

Miss. 'S' a twelve year old girl was diagnosed as a case of Atrial Septal Defect (ASD) and Patent Ductus Arteriosus (PDA) two years before. She was asymptomatic and her weight gain was within normal limit. She was diagnosed incidentally when she reported to the paediatrician for treatment of respiratory tract infection. Who detected a systolic murmur and referred her to paediatric cardiologist for cardiac evaluation. On examination: her oxygen saturation was 98%, an ejection systolic murmur of grade $^{3}/_{6}$ was detected in upper left paresternal area, chest X-ray showed normal sized heart with

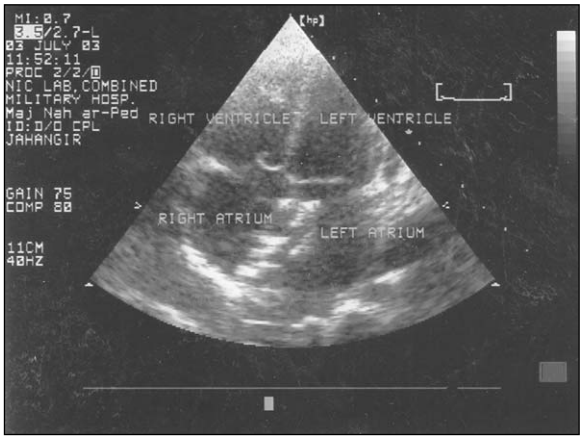

Fig-1 : *Echocardiography showing ASD device on both side of atrial septum.*

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slightly increased pulmonary vascularity, ECG showed incomplete right bundle branch block (RBBB), and Echocardiography with Color Doppler showed large secundum ASD II° and a small PDA. ASD size was 18 mm, superior rim was 16 mm and inferior rim was 12 mm. Total size of interatrial septum was 46 mm. PDA size was 3.5 mm and pressure gradient across PDA was 90 mm Hg. As the size of ASD and PDA was favorable for Device and Coil closure, the procedure was planned and performed on 27th September, 2004 under ketamine anaesthesia.

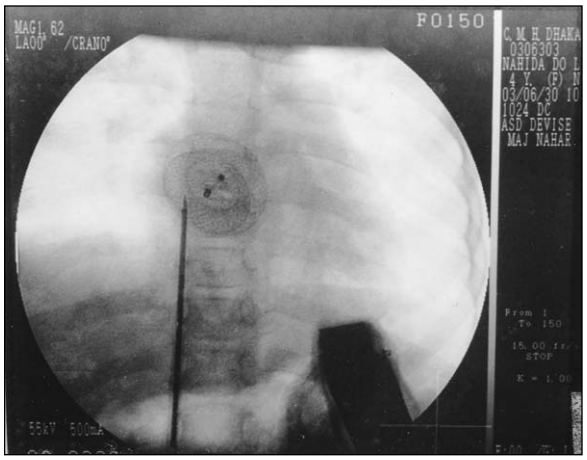

Fig-2: *ASD device just released from device delivery cable.*

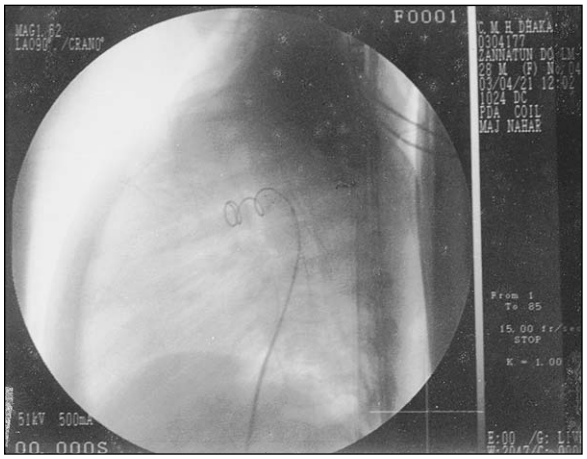

Fig-3 : *PDA coil attached to delivery system inside PDA.*

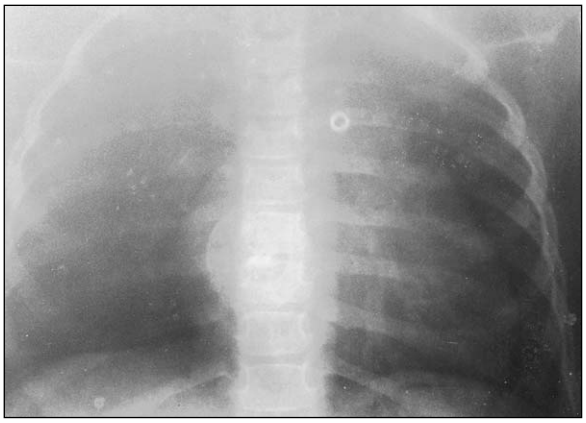

Fig-4 : *X-ray chest showing PDA coil and ASD device in position.*

Procedure:

Equipments used: 6 Fr catheter introducer sheath, 5 Fr catheter introducer sheath, 5 Fr Torcon catheter, 0.038 Terumo wire, 0.035 super stiff wire, 5 Fr GL catheter, pigtail catheter, 5 Fr NIH catheter, PDA coil 5x3 mm, PDA coil delivery system, block Aid ASD occluder, ASD device delivery system, Touhy brost adaptor, sizing plate, sizing balloon and normal paediatric drape. (Source: Amplatzer Septal Occluder and Delivery System, Instructions for used. AGA Medical Corporation, 682 Golden valley, MN 55427 USA).

Drug used: Injection Ketamine 2 mg/kg, Inj. Midazolam 0.1 mg/kg.

Procedure:

The patient was sedated initially with Inj. Ketamine and Midazolam and secured to the table with leucoplast. She was then connected to ECG and pulse oximetry and base line readings taken. Cleaning and draping was done leaving both femoral area exposed. The groins were anaesthesised with 1% Lignocaine. A 5 Fr sheath was placed in right femoral artery and a 6 Fr sheath into right femoral vein. A saturation and pressure run was performed in all the chamber of right heart and left atrium with 6 Fr NIH catheter. An aortogram was then performed with pigtail catheter and PDA identified. PDA size was calculated and it was 3 mm. A 5 x 3 mm coil was selected. Coil was then attached to delivery system and introduced through RFA through a Torcon catheter, which was previously placed in the main pulmonary artery

though PDA. Delivery cable was forwarded to MPA, two loops were released and then delivery cable was withdrawn to aorta and rest of the coil loop was released. Aortogram after 10 minutes showed complete occlusion.

A GL catheter was then placed in the left upper pulmonary vein and a supper stiff wire was passed and secured in a branch vein. Catheter and sheath removed afterwards. ASD size was measured with a sizing balloon. Both echo & fluoroscopy guide was taken to see complete occlusion of ASD with sizing balloon. Sizing plate correlates with 22 mm. So a 24 mm device was selected. ASD device delivery sheath was introduced through guide wire to left atrium (LA) and dilator with wire removed. ASD device was attached to delivery cable through loader and then loaded. Loader was then attached to delivery sheath through a Touhy brost adaptor and device forwarded to LA. LA disc delivered followed by subsequent release of right atrial (RA) disc. Whole procedure was done under echo guide and obstruction to surrounding structure over ruled. Then device was released from delivery coil. Fluoroscopy time for both intervention was 45 minutes.

Echocardiography with color Doppler repeated on the next day, which showed no residual shunt through ASD and PDA.

Discussion:

A variety of techniques have been used to achieve non-surgical closure of PDA since 1967 when Porstmann et al reported the use of an evalon plug[1]. Then Rashkind et al reported on an umbrella device for closure of PDA in 1979[1]. Next generation was Rashkind PDA occluder. The incidence of residual Shunting was high with this device (10 – 30%) and it was expensive and difficult to implant. So it was replaced by a number of devices, which are easier to use, cheap and effective. Now a days, coils and Amplatzer PDA occluder are gaining popularity because they are found more effective and Ductus occluder is suitable for larger ductus also[2, 3,4,5].

Transcatheter tecnique for closure of secundum ASD have been in evaluation since the original report by King and Mills in 1976[6,7]. Recent procedural modifications have been introduced in an attempt to minimize the size of the delivery sheath and reduce complication that can arise from device embolization[8]. The final decision to implant the device is largely based on balloon sizing of the ASD during cardaic catheterization[9]. Only the subjective criteria of ASD size and measurement of superior and inferior rim on echocardiography have been used as a criteria to select patient for device closure[9]. But still echocardiography is a good investigation to select cases and also to do the follow up on already done cases.[10, 11]. Block aid ASD occluder was used in our patient. These devices are promising. The most important advantage is that it could be delivered through a small sheath and it can be used for larger defects also. Chance of embolization is also less[12].

In our patient both ASD (Secundum) and PDA was found suitable for device closure and attempt was taken to performed both interventions in the same sitting. After this case, 4 cases of double interventions in same sitting were done in CMH Dhaka which included intervention of ASD and PDA and intervention of ASD with pulmonary valvoplasty. Double intervention of two separate congenital heart lesion is the latest technology and case reports are yet to be published.

Conclusion:

Isolated PDA coil occlusion have been done in 60 cases so far in paediatric cardiology unit of CMH, Dhaka. Isolated ASD closure of 30 children and adult has been performed jointly by paediatric and adult cardiologists in catheterization laboratory of CMH Dhaka. This is the first case in our experience where coil occlusion of PDA and device closure of ASD was performed in same sitting in a patient with ASD secundum and small PDA with achievement of total occlusion of shunt in both the lesions. This is the first ever case of double device closure in same sitting in any cardiac centre of Bangladesh, which will definitely be a milestone for future cardiologists.

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Treatment of a Breast Cancer with Pregnancy Preserving her Breast and Baby

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Introduction:

Breast cancer is reported to occur in from 1 in 3000 to 1 in 10,000 pregnancies worldwide[1]. It may present many difficult medical and psychosocial problems and historically has placed the welfare of the mother in conflict with that of the fetus.

To detect breast cancer, pregnant and lactating women should practice self-examination and undergo a breast examination as part of the routine prenatal examination by a doctor. If an abnormality is found, diagnostic approaches such as ultrasound and mammography may be used. With proper shielding, mammography poses little risk of radiation exposure to the fetus[2]. Diagnosis may be safely accomplished with a fine-needle aspiration or excisional biopsy under local anesthesia[3]

Procedures used for staging of breast cancer should be modified to avoid radiation exposure to the fetus in pregnant women.

Once the diagnosis is established, pregnant patients should be treated in a manner similar to nonpregnant patients because there is no evidence that carcinoma of the breast in pregnant women is biologically different than carcinoma of the breast in other premenopausal women[4].

Operation may be performed safely when general anesthesia is administered and postoperative adjuvant therapy should be administered, when necessary, with the exception of radiotherapy, which is contraindicated throughout pregnancy; and chemotherapy, which is contraindicated during the first trimester[5]. The involvement of multiple subspecialties in the management of these patients is highly recommended[6].

Termination of pregnancy has not been shown to have any beneficial effect on breast cancer outcome and is not usually considered as a therapeutic option[1]. Termination of pregnancy, however, may be considered, based on the age of the fetus, and if maternal treatment options, such as chemotherapy and radiation therapy, are significantly limited by the continuation of the pregnancy.

Having to start chemotherapy during pregnancy remains a rare event. The decision to proceed with this treatment depends on the drugs used, the time of exposure for the fetus and the gestational age at the time of exposure. The mutagenic potential of the chosen drug has to be known. The risk for the child can then be established without compromising the mother's chances of survival or well-being. The first trimester of pregnancy, which corresponds to organogenesis is the most critical period for the fetus. The greatest risk of malformation occurs with anti-metabolite drugs[7]. Neoadjuvant or adjuvant chemotherapy can be given with minimal risks to the fetus during the second or third trimester[6].

The main goal of this article is to offer to the pregnant woman diagnosed with breast cancer the optimal therapeutic modalities, while protecting the unborn fetus of immediate and late deleterious effects of radiation and chemotherapy.

Case history:

A 29-year lady belonged to a well to do family of Mymensingh town attended Mymensigh Medical College Hospital on 4th March 2000 with the complaints of a lump in her left breast and

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amenorrhoea for three months. Her last menstrual period was 25th December 1999. Her expected date of delivery was 2nd October 2000.The patient was educated (HSC), multipara (two children) and with excellent performance status (100% Kernofsky). She was non diabetic and non hypertensive.

On local examination, there was a lump in the upper and outer quadrant of left breast, size about 2 x 2 cm^2, irregular shape, mobile and free from overlying skin and underlying chest wall.

No abnormality was detected in the other breast and the both axilla. On gynecological examination, uterus was 14 weeks size. For diagnostic work up and staging the following investigations routine blood with platelet count, blood chemistries such as fasting blood sugar, urea, creatinine, bilirubin, SGPT, alkaline phosphatase, routine urine examination, ultrasonograghy (USG) of both breasts, whole abdomen, X-ray chest PA view with proper shielding and fine needle aspiration cytology from the left breast lump were done.

USG of left breast showed a solid irregular lump size of 2 x 2 cm in upper and outer quadrant and the fetus was 14 weeks size in the womb. FNAC revealed infiltrating duct cell carcinoma. All other investigations revealed the values within normal limit. The diagnosis was left breast cancer T1N0M0 clinically with 14 weeks pregnancy.

During the pregnancy she was treated by lumpectomy with axillary clearance on 18th April, 2000. Histopathology of the breast lump showed poorly differentiated infiltrating duct cell carcinoma and three axillary lymph nodes showed the involvement of duct cell carcinoma. Her estrogen and progesterone receptor status could not be done. After complete healing of the surgical wound she was treated by combination chemotherapy with cyclophosphamide 900 mg IV and doxorubicine 75mg IV three weekly for six cycles. Before each cycle of chemotherapy antenatal check up was done clinically, sonologically and other investigations such as routine blood, urine and blood chemistries. The patient was found fit for chemotherapy and the fetus was found normal height for gestational age, fetal movement and heart sound were within normal limit. On 25th September 2000 she delivered a healthy male baby of 2.7 kg per vaginally. At birth the baby was found normal physically preserving all milestones. The mother was advised not to breast feed her baby because of exposure of chemotherapy.

Four weeks after delivery, the patient was treated by radiotherapy by cobalt 60 teletherapy machine with the dose 50Gy in 5 weeks in 25 fractions, 5 fractions per weeks (30th October, 2000 to 10th November 2000). Radiotherapy treatment was given in four portals; -two tangential fields, left medial tangential and left lateral tangential portals (15cm X 9 cm) covering the left breast (whole), third internal mammary portals(8cm x 4 cm) to irradiate the Internal mammary node and the fourth portal to the supraclavicular nodes (9 cm x 10 cm). Before starting radiotherapy each portal was simulated by Simulator. She was advised for boost radiation further 12Gy in 6 fractions either by electron beam or interstitial implant (brachytherapy), but she refused.

The patient attended for follow up examination regularly, one follow up per two months for the first year and then four follow up per year. The baby was on close observation and monthly check up to three months and then mother and baby both attended at the same setting for follow up care. At the end of 40 months of diagnosis of breast cancer the patient was found disease free and the baby at his 33 months of age was with normal physical and mental growth (developmental milestone).

Discussion:

The study case was 29 year young lady. Fortunately she was diagnosed at early stage but at that time she was on 14th week of pregnancy. During the pregnancy she was treated by lumpectomy with axillary clearance. Histopathology of the breast lump revealed infiltrating duct cell carcinoma poorly differentiated and there was involvement of axillary lymph nodes histopathologically. Breast cancer in women under 30 years of age carries a poor prognosis, for reasons that have not been identified[7]. Across stages, patients with pregnancy associated breast cancer have survival not significantly different from those patients with non-pregnancy-associated breast cancer[8] but during pregnancy and lactation the prognosis is worse because of delay in diagnosis, average reported delay 5 to 15 months from the onset of symptoms[3].

Although breast conservation therapy has evolved as the major treatment in breast cancer, it has been thought that pregnancy was a contraindication for this type of breast cancer therapy due to risks imposed on the fetus by chemotherapy and radiation. When the cancer is detected in the second or third trimester, chemotherapy is initiated after a lumpectomy, radiation can be withheld until after the birth of the baby. In the present study, breast cancer was diagnosed at the second trimester of pregnancy, breast conserving surgery was done and chemotherapy was carried out during pregnancy and radiotherapy after four weeks the delivery of the baby. A study in Agios Andreas Hospital, Greece had shown a 32-year lady diagnosed as breast cancer with 19th week pregnancy treated by quadrenectomy and axillary clearence and four cycles of chemotherapy with cyclophosphamide, pharmarubicine and 5 flourouracil combination during pregnancy (2nd and 3rd trimester) and the patient gave birth in the 35(+6) week to a healthy baby with no apparent malformations; during puerperium she received two more cycles of chemotherapy and then radiotherapy with tangential fields[9]

Postoperative chemotherapy is the standard treatment for node-positive pre menoposal women with breast cancer. As the study case was 29 years node positive and poorly differentiated duct cell carcinoma and chemotherapy during pregnancy is not absolute contraindication, so she was treated by adjuvant chemotherapy with cyclophophamide and adriamycine three weekly for 6 cycles during pregnancy at second and third trimester. A healthy male baby was born 15 days before the expected date of delivery. The patient was advised not to breast feed her baby. Up to 33 months of age the baby was found normal physically preserving all the developmental milestones. And the mother at 40th month of her diagnosis of breast cancer was also found disease free.

Giacalone PL, Laffargue F, Benos P showed in their study "chemotherapy for breast cancer during pregnancy-a French national survey" 95% of the pregnancies resulted in live births with low related morbidity in the newborns and at a mean follow up of 42.3 months, all live infants were reported to have reached normal developmental milestones[10]. The best data for management of breast cancer during pregnancy come from the experience at the MD Anderson Cancer Center in Houston, Texas, in which 24 women were treated over an 8-year span using a standardized protocol[11]. After surgery (ie, modified radical mastectomy), patients received adjuvant chemotherapy with 5-fluorouracil, doxorubicin, and cyclophosphamide (FAC) until the time of delivery. There were no unexpected antepartum complications; 12% had preterm labor and 4% had pre-eclampsia. Postpartum lactation was impaired in all patients and patients were advised not to breast feed on account of chemotherapy exposure. None of the 24 children had congenital abnormalities; 23 of the 24 had birth weights above the 10th percentile. No unusual neonatal complications were noted, although 1 baby had transient leucopenia. So MD Anderson Cancer center recommendation is that treatment with chemotherapy during the first trimester is contraindicated, as studies show high rates of fetal side effects and treatment with tamoxifen or therapeutic radiation therapy is also contraindicated during pregnancy.

The study case was diagnosed as an early breast cancer at 2nd trimester of pregnancy, breast conserving surgery followed by chemotherapy could be possible. A healthy baby was born at 34 weeks. Radiotherapy treatment after the delivery of the baby was executed. There was no adverse effect on baby in physical and developmental milestone up to 33 months of age and no local recurrence and metastasis of the mother were detected up to 40 months of the diagnosis of breast cancer.

Conclusion:

As the carcinoma of breast in pregnant women is not biologically different from the carcinoma of breast in other pre-menopausal women[4], if the early breast cancer diagnosed at the 2nd and 3rd trimester of pregnancy is appropriately staged and adequately treated; preservation of breast and baby can be possible without compromising maternal survival.

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