Ectopic Pregnancies: a Three Year Study

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Abstract

Objective: To analyze the risk factors and assess the results of management with respect to maternal morbidity and mortality of ectopic pregnancy during the last three years.
Setting: Ziauddin Medical University Hospital, North Nazimabad campus (ZMUH), Karachi.
Results: Forty-three patients were admitted with ectopic pregnancy at ZMUH from 1st January 1997 to 31st December 1999. Frequency of ectopic pregnancy was 1.3% of total 3252 pregnancies. Risk factors were found in 33% of cases. There was one case of heterotopic pregnancy. Surgical treatment was performed in 36 cases. Two patients were given intramuscular methotrexate and one un-ruptured ectopic resolved after expectant management.
Conclusion: Conservative management was an option but surgical treatment was done more often because of late referrals. Screening of high risk cases, early diagnosis and early intervention would reduce the morbidity in ectopic pregnancies (JPMA 51 :240;2001).

Introduction

Ectopic pregnancy is a cause of pregnancy related deaths. Its incidence is increasing and has risen from 4.9/1000 pregnancies in 1970 to 9.6/1000 pregnancies in 1992[1]. The reason for this increase has not been fully elucidated, but the possible contribution of pelvic inflammatory disease and intra-uterine contraceptive device use have been cited as contributing factors[2].
In a study of 150 mothers brought dead to the hospital, at least 2 were due to ruptured ectopic pregnancy (1.3%)[3]. In order to decrease maternal mortality and morbidity due to ectopic pregnancy, there is a need for early diagnosis. The availability of sensitive BhCG and high- resolution sonography has resulted in earlier diagnosis and has reduced mortality rate[4]. The aim of this study was to review the data of ectopic pregnancies during last 3 years, analyze the risk factors and assess the results of management with respect to morbidity and mortality.

Patients and Methods

Retrospective analysis of case histories of patients admitted with ectopic pregnancy at ZMUH from 1st January 1997 to 31st December1999 was done. These patients were admitted through emergency or outpatient department. After history and examination, provisional diagnosis was made. Relevant investigations included complete blood picture, blood group, serum ßhCG and ultrasound. Other investigations i.e. the liver function tests and platelets were done in patients who were given methotrexate. Based on thorough evaluation, type of management was decided. Where any surgical procedure was performed, specimen was sent for histopathological examination.
Forty-three patients were admitted with ectopic pregnancies during last three years but thirty-nine patients were included in this study because of incomplete data retrieval. Two patients were selected for conservative management with niethotrexate. The selection criteria was: I) unruptured ectopic pregnancy, 2) ßhCG <10,000 mIU/ml, (3) ectopic size <4cm and (4) haemodynamically stable patient. Dose regimen was intramuscular methotrexate 50mg/m^2 as a single dose.

Results

Total number of pregnancies admitted to obstetrics and gynaecological department were 3252. Among them 43 patients were admitted with ectopic pregnancies. Detailed analysis of data was done for 39 patients. The frequency of ectopic pregnancy was 1 .3%. Thirty three patients presented with disturbed and 6 patients with unruptured ectopic pregnancies. Majority of patients with ectopic pregnancy were in 2 1-30 years age group (74%). Multiparous women were found to be more prone to have ectopic pregnancy (6 1%). The gestational age ranged between 4-11 weeks and the most frequent gestational age was around 6 weeks.

Thirty three percent (n=13) patients had risk factors (Table 1),

Table1. Risk factors for ectopic pregnancy.

Risk Factors	No.	%
Previous abortion	5	12.9
Infertility treatment(clomiphene citrate)	4	10.3
Intrauterine contracepative device	2	5.1
Tubal surgery i.e.tubal ligation/ sterilization reversal	1	2.6
Previous ectopic	1	2.6
Pelvic inflamatory disease	-	-

among them previous abortions was the most frequent risk factor. ihe commonest presenting symptom was abdominal pain in 79% (n3 1) followed by vaginal bleeding in 53% (n=21) and fainting in 13% (n=5). One patient was asymptomatic and ectopic pregnancy was detected on ultrasound done for confirmation of pregnancy. Twenty-six patients presented with severe abdominal tenderness, tachycardia, hypotension, pallor and cervical excitation. These were diagnosed on clinical findings, while 12 patients presented in subacute condition and were diagnosed by clinical assessment as well as with the help of investigations. One patient was diagnosed incidentally.

The most frequent physical findings were abdominal tenderness in 84.6% (n=33). followed by cervical excitation in 64% (n-25) and palpable adnexal mass in 49% (n=19). Five patients presented in a state of shock. Twenty-two patients were severely anaemic and required blood transfusion. Serum ß hCG was positive in all cases and ranged between 65.88mlU/ml -18843rnlU/ml with the mean of 4918.62mIU/ml. Urine hCG was performed in 30 patients. It was positive in 64% (n=25) and negative in 13% (n=5). The size of ectopic mass on ultrasound ranged between I .2x2.5-7.0x6.2 cm with the mean of 3.6x3.5 cm.

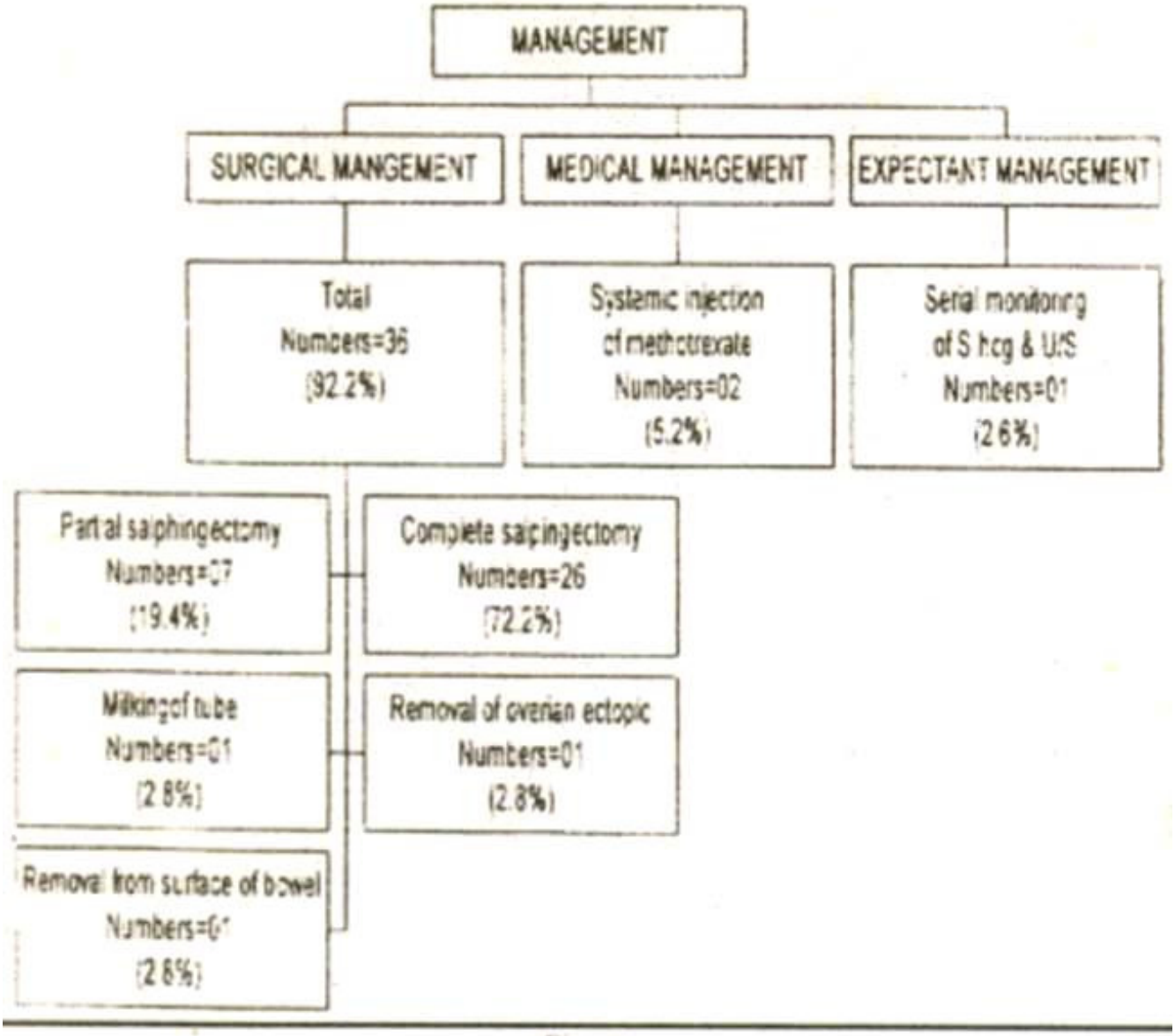
In 90% (n35) of cases ectopic pregnancy was tubal and it was more common on right side (60%). The commonest site of ectopic was ampulla of fallopian tube (Table 2)

Table 2. Site of ectopic pregnancies.

Site of Ectopic Pregnancies	No.	%
Ampulla of fallopian tube	23	58.9
Fimbria	6	15.4
Isthmus	3	7.7
Cornu	4	10.3
Others	3	7.7
1. heterotopic pregnancy		
2. ovarian		
3. adherent to bowel serosa		

in 58.9% (n=23). There was one case of spontaneous heterotopic pregnancy, with an ampullary ectopic as well as intrauterine missed abortion. The patient was a primigravida who came with 6 weeks amenorrhoea associated with bleeding per vaginum and severe lower abdominal pain. On examination she had abdominal tenderness with guarding, cervical excitation and bulky uterus. Ultrasound showed ruptured ectopic with intrauterine missed abortion. There was no history of ovulation induction or any other risk factor. Left salpingectomy and dilatation and evacuation was performed. Histopathology of specimens confirmed the diagnosis of heterotopic pregnancy.

Thirty-six patients were treated surgically while the remaining received conservative management (Figure).



Figure

Among surgically treated patients 26 had total salpingectomy. Tubal expression of ectopic gestation by milking of tube was done in one patient. Histopathological report confirmed ectopic pregnancy in all surgically treated patients.

One patient was managed expectantly successfully. She had un-ruptured ectopic pregnancy with ßhCG level of 522 rnlU/ml and ectopic gestational sac size was 2.2x1.5 cm. She was monitored by weekly serial ßhCG levels and ultrasounds till ectopic pregnancy resolved. Two patients were selected for medical treatment with single dose intramuscular methotrexate. Both were primigravidae and came with 9 weeks amenorrhoea. One patient was asymptomatic and tubal pregnancy was detected on ultra¬sound, which was done for confirmation of pregnancy, while the other came with bleeding per vaginum. Initial BhCG levels of patients were 7201 and 5937 rnlU /ml respectively, with adnexal masses of 4.6x 3.9 and 4.2 x 2.7 cm respectively, Both patients received a single dose of i ntra-m uscu lar 50mg/m^2 methotrexate and both showed declining ßhCG levels, but one patient was admitted in emergency on 28th day of methotrexate administration with acute abdomen and surgical intervention was required for the ruptured ectopic pregnancy. The other patient remained stable and her ectopic resolved completely after 48 days.

Considering morbidity level there was no complication in the, patient who had expectant management. In those treated medically with methotrexate, one patient had no complication, while the other had rupture of tube and required surgical intervention. Among the surgically treated patients, 11 had fever. 5 had UTI and one had wound infection. There was no mortality in this series.

Discussion

The frequency of ectopic pregnancy in this series was 1.3% which is comparable to other studies done in Pakistan i.e., 0.6% and 1%[5,6]. The exact etiology of ectopic pregnancy is not known but different risk factors have been implicated as contributing element[7]. In this study 33%patients had risk factors, among them five patients had history of previous abortions followed by dilatation and evacuation. Previous abortions are associated with slightly increased risk[7]. Four patients were infertile and had taken clomiphene citrate for ovulation induction. Agents that induce ovulation may increase the risk of ectopic gestation, through the effects of hormone fluctuation on tubal function[2].

In this study patients also gave history of intra uterine contraceptive device, tubal ligation and previous ectopic pregnancy. Previous ectopic pregnancy and previous, tubal surgery are the strongest risk factors associated with the occurrence of ectopic pregnancy[7]. With the use of intra uterine contraceptive device if pregnancy occurs, there is strong probability that it will be ectopic. History of pelvic inflammatory disease was not found in our study, though it was a strong etiological factor and other studies in Pakistan have documented a frequency of 16% and 30% in their respective series[5,6]. To enable early diagnosis, a screening program i.e., serum ßhCG and transvaginal ultrasound for high-risk women may be considered, to reduce morbidity.

Among the ectopic pregnancies in this series, one patient had heterotopic pregnancy (HP). Heterotopic pregnancy is a rare condition. However, treatment with ovulation induction or assisted reproductive technologies (ART) have dramatically increased the incidence of heterotopic pregnancies. Spontaneous HP estimated to occur 1:30,000 pregnancies while heterotopic pregnancy complicates 1% of ART pregnancies[8]. Ten prospective studies with a total of 347 patients managed expectantly demonstrated that 69.2% resolved spontaneously[1]. In our study one case with ectopic pregnancy was successfully managed expectantly. Expectant management of ectopic pregnancy with decreasing hCG can be expected to succeed in 60% cases if BhCG level <2000 mIU/ml[9].

Two patients were selected for medical treatment with single dose methotrexate. One had treatment failure. Both did not meet the recommended inclusion criteria for this therapy (ectopic gestation size > 4 cm) but they and their family wanted to try conservative management as they wanted to retain their fallopian tubes and fertility potential, accepting the risk of failure. Stovall's study shows a 3.3% incidence of rupture even in patients who did meet the selection criteria[10].

In this study majority of the cases were treated surgically with its inherent high morbidity (43.6%). The reason for more surgical procedures, as compared to medical treatment, was because ZMUH is a tertiary referral center and most of the cases were late referrals. There was no death in this series, though a study in Pakistan has shown a mortality rate of I .6% among 62 patients with ectopic pregnancy[5].

In order to reduce morbidity there is need of early diagnosis. This can be done by screening of high risk patients giving an early diagnosis and intervention before tubal integrity is lost.

Whenever a patient comes with an ectopic pregnancy, heterotopic pregnancy should be excluded because early intervention is mandatory to salvage viable intra uterine pregnancy.

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