

Analysis of Risk Factors, Impact of Diagnostic Delays on Presentation and Management of Ectopic Pregnancy

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ABSTRACT

Objective To analyze risk factors and impact of diagnostic delays on presentation and management of ectopic pregnancy.

Study design Descriptive case series.

Place & Duration of study Department of Obstetrics & Gynecology Unit- I, Sir Ganga Ram Hospital (SGRH) and Nawaz Sharif Social Security Hospital Lahore, from January 2012 to June 2013.

Methodology Women diagnosed with ectopic pregnancy were included in the study. Data was reviewed from the charts of all patients diagnosed with ectopic pregnancy through structured proforma. The variables studied included age, parity; symptoms and signs, risk factors, treatment and associated delays contributing to increased morbidity.

Results Total number of patients studied were 100. The peak age of ectopic pregnancy was between 21 to 30 year. It was found more in primigravida (n=60 - 60%). The common identifiable risk factors were previous cesarean section (n=30 - 30%), infertility (n=25 - 25%), pelvic inflammatory disease (n=25 - 25%) and history of previous ectopic pregnancy (n=6 - 6%).

Phase I delay was present in 30 (30%) patients while same number of women experienced delay in proper referral. In 20 cases (20%) phase III delay was noted at hospital level. Most of the patients presented with abdominal pain (n=90 - 90%), pallor (n=80 - 80%) and features of shock (n=40 - 40%). Ultrasound (US) confirmed diagnosis in 60 (60%) cases. In 95 (95%) patients it was of tubal variety out of which 70 (70%) were already ruptured. Salpingectomy was performed in 88 (88%) patients. There was no mortality in this series.

Conclusions The clinical presentation in most of the cases was different from usual resulting in delay in diagnosis. Majority of the patients required laparotomy and salpingectomy was performed in 88% patients.

Key words Ectopic pregnancy, Risk factors, Tubal pregnancy.

INTRODUCTION:

Ectopic pregnancy is the implantation of fertilized ovum outside the uterine cavity.¹ More than 95% of ectopic pregnancy cases occur in the fallopian tubes.²

If left untreated or undiagnosed it can result in intra-abdominal hemorrhage and death. One to two percent of all pregnancies are ectopic pregnancies. Their incidence has risen and are the leading cause (10-15%) of maternal mortality in first trimester.^{3,4} Maternal death due to ectopic pregnancy can be avoided only if ectopic pregnancy is diagnosed in early stage when the tube is intact. This requires a high index of suspicion. Missed diagnosis of ectopic pregnancy as a factor in maternal mortality rate requires more intensive educational efforts directed towards primary care physicians.^{5,6}

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Many women with tubal ectopic pregnancy reach hospital after rupture has already occurred.⁵ Many reasons have been put forward including health-seeking behavior, availability of health facilities etc.⁵⁻⁷ Delay in diagnosis increases maternal morbidity as most of tubal ectopic rupture by the time patient reaches hospital. Removal of fallopian tube further compromises chance of pregnancy in nulliparous women. Evaluation of the reasons for these delays and their contributions to maternal deaths is reported infrequently.^{3,8} No significant association with various risk factors have been reported in the context of ectopic pregnancy.⁹ The objective of study was to analyze risk factors, impact of diagnostic delays on presentation and management of ectopic pregnancy.

METHODOLOGY:

All patients diagnosed with ectopic pregnancy in Obstetrics and Gynecology Unit I of SRGH and Nawaz Sharif Social Security Hospital Lahore, from January 2012 to June 2013, were included. Seventy-four patients, were from Sir Ganga Ram Hospital and 26 from Nawaz Sharif Social Security Hospital. Twelve patients were excluded as record was incomplete.

Data on clinical and socio-demographic variables including age, marital status, level of education, and place of residence etc were collected. The time of onset of symptoms and the last complaint before presentation, including the time interval before surgical intervention also noted. Delay in seeking care was defined as not asking for medical help more than 24 hours after the first symptom. Three types of delay were assigned, phase I; delay in deciding to seek care by the individual and/or family, phase II; delay in reaching an adequate health care facility, phase III; delay in receiving adequate care at the health facility. Data was analyzed using descriptive statistics. Frequencies and percentages were computed.

RESULTS:

A total of hundred patients with ectopic pregnancy were included. During this period total number of deliveries was 8600 in SGRH Unit I with 0.86% frequency of ectopic pregnancy cases. Out of total 3500 deliveries in Nawaz Sharif Social Security Hospital the frequency of ectopic pregnancy was 0.74%. Three types of delays were identified. In phase I there were 30 patients, in phase II 20, and in phase III 30 patients. In 20 cases delay occur while patients were in hospital. Most of the patients were in age range 21–30 year and primigravida (table I & II).

Table I: Age of Women with Ectopic Pregnancy

| Age (Year) | No. of cases (n %) |
|------------|--------------------|
| 16 - 20 | 16 (16%) |
| 21- 25 | 38 (38%) |
| 26 - 30 | 32 (32%) |
| 31 - 35 | 11 (11%) |
| 36 - 40 | 03 (3%) |

Table II: Parity of Women with Ectopic Pregnancy

| Parity | No. of cases (n %) |
|----------------------|--------------------|
| 0 | 38 (38%) |
| 1 | 20 (20%) |
| 2 | 16 (16%) |
| 3 | 14 (14%) |
| Equal or more than 4 | 12 (12%) |

The gestational age varied from 4th week to 15th week. In 20 patients there was no history of a missed period. The most frequent presenting symptoms of ectopic pregnancy were abdominal pain in (90%), amenorrhea (75%), vaginal bleeding (66%) and syncope (30%). The period of amenorrhea varied from four week to fifteen week. Physical signs in these patients were abdominal tenderness (90%), adnexal tenderness (60%) and cervical excitation 50%).

Diagnosis of ectopic pregnancy was based on either clinical grounds alone or on combination of clinical features and investigations which included ultrasound and pregnancy test. Multiple blood transfusions were also needed. 62% women had hemoglobin of 7gm/dl and 86% patients needed blood transfusion. More than one risk factors were present in 60% patients (table-III).

Ultrasound confirmed diagnosis in 60 (60%) cases. In 95(95%) patients it was of tubal variety, out of which 70 (70%) ruptured, 20% had tubal abortion, 10% were unruptured. In 88 (88%) patients salpingectomy was done while salpingostomy done in 5 (5%) and 2 (2%) had salpingo-oophorectomy. Expectant management was done in two patients and medical management with methotraxate in two cases. There was no mortality in this series.

DISCUSSION:

Ectopic pregnancy is a common gynecological emergency at tertiary care hospitals. Majority of the

Table III: Risk Factors for Ectopic Pregnancy

| Risk Factors | No. of cases (n %) |
|------------------------------------|--------------------|
| Previous cesarean section | 18 (30%) |
| Infertility | 15 (25%) |
| Pelvic inflammatory disease | 15 (25%) |
| Previous ectopic | 4 (6.6%) |
| Intra uterine contraceptive device | 3 (5%) |
| Pelvic surgery | 3 (5%) |
| Tuberculosis | 2 (3.3%) |

patients with ectopic pregnancy are brought to ER in a hemodynamically unstable condition. The delay in presentation is common and contributes to the high proportion of cases with tubal rupture. Maternal mortality is attributed to three delays as pointed out earlier. In our study phase I delay was noted in 30 patients. A study conducted in New Guinea also observed phase I delay in 55% patients and study in Nigeria gave a figure of 74.7%.¹⁰ The root causes for late presentation remains unclear but it is possible that women may be unaware of their pregnancy status and pregnancy related complications, or indeed may hesitate to seek help as they find it difficult to raise funds for health center visits. The number of clearly identifiable phase II delays in our study was 20%.

In half of the patients phase III delay was noted. As noted by the World Health Organization, phase III delays “represent a failure on the part of the health services to seize the last chance to save a woman” The high proportion of women were those where ectopic pregnancy was not suspected as a part of initial differential diagnosis. Delays in timely blood transfusion and prompt surgery were also noted. Other hospital-based factors responsible for delay in obtaining care were difficulty in getting blood, time lapse in obtaining ultrasound report, and busy operating rooms. Improvement in these areas can ensure efficient health care delivery system

In this study fallopian tubes in 90% of patients could not be saved. These results are comparable to other studies from the region.¹¹ Emphasis therefore is on early diagnosis as conservative surgical management with preservation of the fallopian tube is advocated. Varied clinical presentation is an important reason for failing to suspect an ectopic pregnancy.⁷ In our study, 90% patients presented with abdominal pain. None of the physical signs are specific for ectopic

pregnancy. Another study conducted in Karachi reported lower abdominal pain in 81% of patient.¹² There is also a scope for medical management of ectopic pregnancy, particularly if diagnosed in the hemodynamically stable patient. Medical management can reduce the morbidity and mortality, curtail cost of the treatment and fertility would also be minimally hampered.

In our series, majority of patients had one or more risks factors in their past history. A clear association between ectopic pregnancy and infertility has been reported in some studies.^{13,14} A strong association has been reported between prior PID and ectopic pregnancy.^{15,16} In our study although only 10% patients had documented history of PID, 15% had gross evidence of PID at surgery. Previous ectopic pregnancy was risk factor in 6%. A study also found a strong association between previous ectopic pregnancy.¹⁷ In our study history of previous cesarean section was present in 30% patients. This has a strong association with ectopic pregnancy. A systematic review showed no association between prior cesarean section and occurrence of subsequent ectopic pregnancy.¹⁸ Our results are also consistent with the observations that the risk of ectopic pregnancy increases with low parity and advancing maternal age.^{14,18}

CONCLUSIONS:

The classical clinical pattern of amenorrhea and abdominal pain was lacking in most of cases and there were initial diagnostic difficulties. Pelvic inflammatory disease, history of infertility, and previous history of cesarean section were main risk factors. Due to delay in making diagnosis at early stage, open surgery was required in almost all cases.

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