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Research Article

A STUDY OF ECTOPIC PREGNANCIES AT TERTIARY GOVERNMENT HOSPITAL

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ABSTRACT
Ectopic pregnancy is a common life threatening condition. Diagnosis is frequently missed and should be considered in any woman in the reproductive age group presenting with abdominal pain or vaginal bleeding. Aim of the study was to determine the incidence, clinical presentation, risk factors, treatment and morbidity and mortality associated with ectopic pregnancy. Prospective analysis of case histories of patients admitted with ectopic pregnancy at B J Medical Government college and Sassoon general hospital, Pune was done. The following parameters: age, parity, risk factors, clinical presentation, need for blood transfusion and findings at surgery and morbidity associated with ectopic pregnancy were noted. A total of 35 cases of ectopic pregnancy were selected giving the incidence of ectopic pregnancy of 4.56/1000 deliveries. In 25.71% cases there was no identifiable risk factor while 8.57% cases had previous history of ectopic pregnancy. The other associated risk factors present in our study were 17.14% had history of infertility, previous surgeries other than tubal surgeries and history of abortion. In 14.28% cases pelvic inflammatory diseases and history of tubal surgery was positive. The commonest symptoms were abdominal pain (88.57%), amenorrhea (68.57%) and abnormal vaginal bleeding (28.57%); and commonest signs were abdominal tenderness (94.28%), cervical tenderness (8.57%) and adnexal tenderness (74.28%). Surgery by open method in the form of salpingectomy (85.71%), salpingo-oophorectomy (5.71%) and salpingostomy (2.85%) were the mainstay of management. Morbidity included blood transfusion (48.57%). No maternal mortality noted. The mortality is definitely preventable by thorough detail history taking to find out any predisposing risk factor, proper examination, early diagnosis and management. For rural hospitals, it can be prevented by early referral to higher centre on basis of high index of suspicion even if it may be over diagnosis.

Keywords: *Amenorrhea, Hemoperitoneum, Ruptured Ectopic, Salpingectomy*

INTRODUCTION
The world ectopia means “out of place”. Ectopic pregnancy is a complication of pregnancy in which fertilised egg is implanted outside normal endometrium of uterus. Ectopic pregnancy was first recognised in 1693 by Busiere, when he was examining the body of a prisoner executed in Paris. Gifford of England made a more complete report in 1731 that described the condition of a fertilised ovum implanted outside of the uterine cavity (Telinde).

The incidence of ectopic pregnancy is about 1 – 2% that of live births in developed countries, though it may be as high as 4% among those using assisted reproductive technology (Kirk *et al.,* 2014). The increased incidence of ectopic pregnancy has also been observed with rising incidence of sexually transmitted diseases in recent past. In the developed world outcomes have improved as compared to developing world. The mortality due to ectopic pregnancy is less common but this small proportion accounts for the 6 percent of all pregnancy related deaths (Stulberg *et al.,* 2013). There is definite decline in the mortality and morbidity by 90%, may be related to the increased awareness of this condition that accompanied improved diagnostic technology such as quantitative β human chorionic gonadotrophic hormone measurements (βhCG), transvaginal sonography and thus, improved management and care (Telinde).

Although, upto half of women with ectopic pregnancy will have no identifiable risk factors (Buckley *et al.,* 1999). There is association of some risk factors commonly found in ectopic pregnancy cases such as pelvic inflammatory disease, previous ectopic surgery, previous abdominal surgery previous tubal

sterilization or tubal recanalization surgery, primary or secondary infertility, previous abortions, use of intrauterine contraceptive devices. Many other risk factors, including smoking and multiple lifetime sexual partners are weakly associated with ectopic pregnancies (Ankum *et al.*, 1996).

Patients with an ectopic pregnancy commonly present with abdominal pain and vaginal bleeding or spotting between 6 and 10 weeks of gestation. Early diagnosis reduces the risk of tubal rupture and allows more conservative medical treatments to be employed. This prospective study was done to determine the incidence, clinical features, risk factors, treatment and morbidity and mortality associated with ectopic pregnancy in a tertiary care hospital.

MATERIALS AND METHODS

This is a prospective study of ectopic pregnancies was conducted at Sassoon general hospital, Pune, a tertiary government referral centre, over period of 10 months from June 2015 to March 2016. Total 35 cases were admitted during this period in emergency ward and diagnosed as ectopic pregnancy from all the units were included in the study.

The data regarding demographic characteristics, clinical symptoms and signs, diagnostic tools used, treatment, risk factors, were obtained and entered in prepared format.

Information regarding the total number of deliveries obtained from labour room records during the study period. The risk factors for the ectopic pregnancy as well as associated morbidity and mortality were noted in the form. All the observations and association of different risk factors with ectopic pregnancy were analyzed.

RESULTS AND DISCUSSION

Results

The total numbers of cases studied during the period of 10 months were 35**.** B J Medical college and Sassoon general hospital being tertiary government hospital, the number of deliveries during this period were-7672 thus, giving the incidence in our centre as-4.56 per 1000 deliveries.

The maximum number of patients were from age group of 20 to 25 that is 19 (54.28%) followed by 10(28.57%) from age group 26 to 30 thus 82.85% cases were from 20to 30 age group. We had one patient was from more than 41 year group and none below 20 year of age.

Table 1: Age Wise Distribution of Study Cases

Age	No of Cases	Percentage%
<20	0	0
20-25	19	54.28
26-30	10	28.57
31-35	5	14.28
36-40	0	0
>40	1	2.85

Out of total 35 patients 11 were primigravidas, conceived for the first time, while 24 were multigravidas previous conceptions either full term deliveries, abortion or ectopic.

Majority patients 31(88.57%) presented with classical symptoms of lower abdominal unilateral pain. Out of 35, three patients were admitted in shock, had abdominal distension, clinically hemoperitoneum was diagnosed and were given immediate resuscitative treatment and were shifted to operation theatre urgently.

Twenty four cases had proper history of amenorrhea while ten had spotting at the time of last mestrual period. In five patients fornicial mass was palpable and four patients had amenorrhea without any complaints such as pain but came with ultra sonography diagnosis of ectopic pregnancy done as a routine checkup.

Table 2: Comparison of Different Signs and Symptoms in Study Group

Symptoms / Signs	Number of Patients	Percentage%
Abdominal pain	31	88.57
Amenorrhea	24	68.57
Spotting /bleeding pv	10	28.57
Vomiting	9	25.71
Abdominal tenderness	33	94.28
Abdominal distension	3	8.57
Fornicial tenderness	26	74.28
Fornicial mass	5	14.28
Cervical tenderness	3	8.57
In shock	3	8.57

Urine pregnancy test was done in all 35 cases and it was positive while ultrasonographical confirmed diagnosis was available only in 20 cases. It was not possible in 14 cases and not confirmatory in one case. The association of risk factors were analyzed and tabulated.

Out of 35, nine patients had no risk factors and remaining 26 patients had one or more than one risk factors. Three patients had previous ectopic surgery and presented with rupture ectopic. Out of these one had history genital tuberculosis and treatment taken for the same. In our study five patients had history previous tubal surgery, out of which four (11.42%) had history of tubal ligation done and one (2.85%) had history of post tubal ligation tuboplasty. In our study six patients had history of other abdominal surgeries.

Out of six patients, one had previous appendicectomy and one had previous one cesarean section and three had previous 2 cesarean sections, and one patient had history previous exploratory laparotomy in view of pyoperitonitis due to puerperal sepsis who was treated by medical method. Two out six infertility had primary infertility.

Five patients had history suggestive of pelvic inflammatory disease such as chronic pain in lower abdominal pain and recurrent treatment taken for white vaginal discharge. Six patients had prior history of abortions and dilatation and evacuation done for the same.

Table 3: Risk Factor Wise Distribution of Study Cases (some Cases had more than One Risk Factors)

Risk Factors	Number of Cases	%
Previous ectopic	3	8.57
Previous tubal surgery	5	14.28
Previous other surgery	6	17.14
Infertility	6	17.14
Pelvic inflammatory disease	5	14.28
Previous abortion	6	17.14
No risk factor	9	25.71

Out of 35 cases 3 cases were operated laproscopically and remaining 31 had open laparotomy and one patient received medical management. Maximum patients that accounts for 30 required salpingectomy, two required salpingo-oophorectomy and one had undergone salpingostomy. One patient required rudimentary horn removal which was done laproscopically and one patient received medical management. Thirty one patients were operated under spinal anaesthesia and three under general anaesthesia.

Table 4: Analysis of Treatment Given in Study Group

Treatment Given	Number of Cases	Percentage %
Salpingectomy	30	85.71
Salpingo-oophrectomy	2	5.71
Salpingostomy	1	2.85
Rudimentary horn removal	1	2.85
Medical –methotrexate	1	2.85

Tubal ectopic was observed in total 33 cases (88.57%), one was ovarian ectopic and one was rudimentary horn ectopic pregnancy. Out of 33 tubal cases maximum number of cases (22) the site was ampullary, followed by isthmic in seven cases and fimbrial in four cases. Ectopic pregnancy site was observed on left side in 16 cases and in 19 cases it was on right side.

Table 5: Analysis of Site of Ectopic Pregnancy in Study Group

Site of Ectopic	Number of Cases	%
Ampullary	22	62.85%
Isthmus	7	20%
Fimbrial	4	11.42%
Rudimentary horn	1	2.85%
Ovarian	1	2.85%

Intra operatively hemoperitonem was noted in 29 cases out of which one had tubal abortion resulting into hemoperiotoneum and remaining 27 had rupture tubal and one had ruptured ovarian pregnancy. Six cases had unruptured ectopic pregnancy, out of which four were managed by laparoscopy and one by medical method and one by open laparotomy. Patient who was managed medically was given methotrexate regimen. Seventeen patients required blood transfusion and there was no mortality and morbidity in the form of wound infection noted.

Discussion

In our study five patients had history previous tubal surgery, out of which four (11.42%) had history of tubal ligation done and one (2.85%) had history of post tubal ligation tuboplasty. Incidence of ectopic after tubal sterilization is about 16% according to Tatum and Schmidt (1977). The risk depends on the sterilization technique, women's age at the time of sterilization. The rate of ectopic pregnancy after a microsurgical reversal of sterilization procedure is about 4%. The exact risk depends on the method of sterilization, site of tubal occlusion, residual tube length, coexisting disease and surgical technique and skill. In general risk of ectopic is 6 to 9% for reversal of Pomeroy and 5-11% for ring procedure and 17% for cauterization of tube (Rock and Thompson, 1997).

The role of abdominal surgery in ectopic pregnancy is unclear. In one study there appeared to be no increased risk for caesarean delivery, ovarian surgery, or removal of an unruptured appendix (Ni *et al.*, 1990). In our study six patients (17.14%) had history of other abdominal surgeries. Out of six patients, one had previous appendicectomy and one had previous one caesarean section and three had previous 2 caesarean sections, and one patient had history previous exploratory laparotomy in view of pyoperitonitis due to puerperal sepsis. There is possibility of increased risk, presumably because of peritubal scarring.

There is six fold increased risk of ectopic pregnancy in pelvic inflammatory disease. Before antibiotics become available for the treatment of PID, salpingitis was usually so acute that the inflamed tube became totally occluded and permanent sterility was the result. After initial appropriate treatment with antibiotics, agglutination of the cilia can still occur and synechial bands can form within the tubal lumen to cause partial tubal obstruction. Similar mechanism may account for ectopic pregnancies after long term intrauterine device. The relationship of pelvic infection, tubal obstruction, and ectopic pregnancy is well documented. In our study five patients accounted for 14.28% had history suggestive of pelvic inflammatory disease such as chronic pain in lower abdominal pain and recurrent treatment taken for

white discharge per vaginum. In a study of 2500 women with suspected PID who underwent diagnostic laparoscopy, the incidence of ectopic pregnancy in the subsequent pregnancy for those with laparoscopically confirmed disease was 9.1% compared with 1.4% in the women with normal laparoscopy (Westrom *et al.,* 1992). Chlamydia is an important pathogen causing tubal damage and subsequent tubal pregnancy. Chlamydia was cultured from 7% to 30% of patients with tubal pregnancy (Berenson *et al.,* 1991).

In present study we did not get any positive association between intrauterine contraceptive device (IUD) and ectopic pregnancy. The world health organisation task force on intrauterine device for fertility regulation concluded that a valid comparison of different types of IUDs regarding their association with ectopic pregnancy could not be made and further stated that evidence linking IUDs and PID has probably contributed to the presumed correlation between IUDs and ectopic pregnancy.

In cases of Post abortion ectopic cases there is a possible association between multiple and induced abortions and subsequent tubal pregnancy perhaps due to post abortion infection is suggested. In this study we had 17.14% cases that is 6 cases with past history of abortion. Substantial evidence found no increased risk with elective abortions; one study did find a slightly increased risk, particularly with multiple abortions (Thorp *et al.,* 2003).

Various studies examining risk factors for ectopic pregnancy found that infertility increased the odds of tubal pregnancy at least 2.5 times and perhaps as much as 21 times (Ankum *et al.,* 1996). We had 6 cases (17.14%) with positive history of infertility, out of which two had primary and four had secondary infertility.

In our study we had three cases with history previously operated for ectopic pregnancy. A study by Berek and Novak's Gynecology (2012) concluded that 30% of women who have an ectopic pregnancy, which compares with the total repeat ectopic rate of 10% to 20% for the general population of reproductive age women. The rates for intrauterine pregnancy 40% and ectopic pregnancy 15% are similar after tubal removal or conservation (Farquarn, 2005).

Incidence as per the site of ectopic pregnancy are most common 95% occur in the oviduct or tube. Out of those 55% occur in ampulla and 20-25% in isthmic portion, about 17% in infundibulum and fimbria and 2-4% in interstitial or cornual portion (Telinde operative gynecology). In our study tubal ectopic was observed in total 33(94.28%) cases, one was ovarian ectopic and one was rudimentary horn ectopic pregnancy. Out of 33 tubal cases maximum number of cases that is 22 (62.85%) the site was ampullary, followed by isthmic in 7(20%) cases and fimbrial in four cases (11.42%) and no interstitial pregnancy. But we had one rudimentary horn ectopic pregnancy and one ovarian pregnancy.

Conclusion

Ectopic pregnancy is one of common emergency in gynaecology. At times it really requires high index of suspicion and acumen for clinical diagnosis and decision for emergency explorative laparotomy. Though the urine pregnancy test and sonography have a major role in diagnosis, sometimes they can give false negative result and clinical correlation becomes extremely important in decision making. The mortality is definitely preventable by thorough detail history taking to find out any predisposing risk factor, proper examination, early diagnosis and management. For rural hospitals, it can be prevented by early referral to higher centre on basis of high index of suspicion even if it may be over diagnosis. In rare cases negative exploration to prevent mortality can be justified on basis of clinical findings if diagnostic facilities are not available.

Due to advances in diagnostic technique, early diagnosis is possible and conservative medical management can be opted for but in poor resource setting like our hospital follow up with quantitative β human chorionic gonadotrophic hormone measurements may not be always feasible and surgical treatment still remains the gold standard.

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