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Management of ectopic pregnancy in a peripheral hospital by a scoring system

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Abstract

Background: Even today, management of ectopic pregnancies in a peripheral hospital is a challenge and only timely intervention saves lives. Varying presentations and absence of diagnostic facilities in a peripheral hospital made the treating doctor to rely more upon clinical features. An objective scoring system can guide the primary contact general physician to be ectopic minded.

Methods: A prospective observational study was carried out in a peripheral hospital to identify high risk clinical factors like pain abdomen, amenorrhea, bleeding per vaginum and certain clinical signs in reproductive age patients.

Results: 17 patients were found to have ectopic pregnancies out of 19 suspected cases. All cases were managed by laparotomy and 14 ruptured cases were found amongst 17 cases. Demographic profile of ectopic pregnancy in a peripheral set-up could be highlighted in the study.

Conclusion: Ectopic pregnancy is an emergency and referrals from a peripheral set-up might cause dangerous delay in treatment. Varying presentation of ectopic pregnancy and lack of modern facilities in a peripheral set-up create a difficult situation in diagnosis of ectopic pregnancy. Also lack of skill and laparoscopic set-up in a peripheral hospital leave only laparotomy as the treating option.

Keywords: ectopic pregnancy

Introduction

Ectopic pregnancy continues to be one of the commonest gynaecological emergencies and is the leading cause of pregnancy related first trimester deaths. Ectopic pregnancy results from implantation of the conceptus outside the endometrial lining of the uterine cavity (Greek ektopos - out of place). It can cause as much as 6% of all pregnancy related deaths even in developed countries like United States and represents a gynaecological catastrophe unless managed effectively [1]. In 95% of the cases, ectopic pregnancies are found in the fallopian tubes. Hence some clinical scoring system to diagnose this commonest type of ectopic pregnancy would be beneficial. Other location of ectopic pregnancy includes cervix, ovary, peritoneal cavity, caesarean scar site and also in remote locations like spleen, liver, omentum, diaphragm and retroperitoneum.

Incidence of ectopic pregnancy in India is 3.86 per 1000 pregnancies as reported by Indian council of medical research [2]. Worldwide there has been an increasing trend of ectopic pregnancies in the recent times. This has been mainly attributed to the increase in sexually transmitted diseases, assisted reproductive technologies, corrective tubal surgeries [3, 4]. However, the case fatality rate for ectopic pregnancy has decreased to 0.05% in United Kingdom mainly due to early diagnosis [5].

This study was carried out for a span of 30 months. With a view to ascertain the trends of ectopic pregnancy in peripheral hospitals. The aim of this pilot study was to identify the clientele profile of ectopic pregnancy and to develop some postulates for the clinical diagnosis of ectopic pregnancy before significant blood loss occurred.

Materials and Methods

The study was a prospective observational study carried out among all the cases reporting for pregnancy in our hospital. Inclusion criteria include all reproductive age group patient reporting with at least 3 of the following 4 criteria -

- I. Pain abdomen
- II. Amenorrhea

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III. Bleeding per vaginum

IV. Confirmed clinically to be extra-uterine pregnancy when at least

3 out of 5 positive parameters like:

- i. Abdominal tenderness
- ii. Uterine size less than the period of amenorrhoea
- iii. Tender adnexal mass
- iv. Boggy in the pouch of Douglas
- v. Cervical motion tenderness

Investigations like urine pregnancy test, ultrasonography, serum beta-hCG, serum progesterone were not considered mandatory. With these criteria in mind; a total of 19 ectopic pregnancies were suspected among 1030 reported early first trimester pregnancies in a span of 2 and ½ years. 17 cases were confirmed to be ectopic out of 19 suspected cases.

Results and Observations

19 ectopic pregnancies were suspected as per the inclusion criteria. The highest incidence of 47.3 % (n=9) was noted in age group of 30-35 years was supported by evidences that ectopic pregnancy incidence increases with age [6]. 16(84.2%) patients were from lower middle-class family. 7(36.8%) and 4(21%) patients gave history of previous caesarean and diagnostic laparoscopic procedures respectively. But evidences suggest that there is no increased risk of ectopic pregnancy with caesarean section [7]. Previous treatment in the patients include 3(15.7%) infertility, 3(15.7%) endometriosis and 7(36.84%) pelvic inflammatory diseases. In one study of 415 women with laparoscopically proven pelvic inflammatory disease (PID), the incidence of tubal obstruction increased with successive episodes of PID; 13 % after one episode, 35 % after two and 75

% after three [8]. It is also to be noted that endometriosis is rarely associated with ectopic pregnancy as per the various reports.

Previous history of abortions and ectopic pregnancies were seen in 4(21%) and 1(0.05%) patients respectively. There is no known association between ectopic pregnancy and spontaneous or uncomplicated elective abortion [9]. However, there is an association between ectopic pregnancy and recurrent abortion and also with illegal abortions [10]. In the present study 5(26.3%) patients were pregnant for the first time and with history of recent syncope attack. In this study; there were 5(26.3%) primigravida, 4(21%) para-one, 8(42.1%) para-two and 2(10.5%) para-three which is consistent with the existing studies [11]. Although ectopic pregnancy increases with parity; but presently there is a rising trend of ectopic pregnancy

In nulligravida women undergoing infertility no pain abdomen. 6(31.5%) patients were found to be hypotensive (< 90/60 systolic-diastolic mm Hg) at the time of admission. Positive clinical findings and urine pregnancy test were found in 17(89.4%) patients. Ultrasonography was suggestive of ectopic in 18(94.7%) cases. All the 19 cases were operated and in 17(89.4%) cases ectopic pregnancies were found. A rare case of heterotopic pregnancy was also seen among them which presented initially as threatened abortion. Also, one patient reported after taking medicine for pregnancy termination from a private health worker. A total of 14(82.3%) ruptured and 3(17.6%) unruptured ectopic pregnancy were noticed. In 12(70.5%) cases ectopic pregnancy were present in the right fallopian tube. Blood loss of more than 1000 ml was in 10(58.8%) cases. All cases were managed by laparotomy as there were no facility for laparoscopy. None of the cases were given the expectant treatment. Histopathological findings revealed all the 17 out of 19 cases to be tubal ectopic pregnancies.

Table 1: No. of cases as per history of present illness

On History						
Pain abdomen	Absent-2	1day - 8	2-4 days-4	5-7 days -3	8-10 days -1	>10 days-1
Amenorrhoea	Absent-3	6 weeks- 6	6-8 weeks -7	>8 weeks -3		
Bleeding Per Vaginum	Absent-3	2-5 days- 13	6-10 days- 2	>10 days-1		
Dizziness						9
Syncope						5
Vomitting						7
Fever						Nil

Table 2: No. of cases as per past history

Past History	
Contraceptive	Post-tubectomised -1, Barrier contraceptives - 4
Surgery	Post-LSCS-7, Diagnostic Laparoscopy-4, Appendicectomy - 1, Salpingectomy-1
Abortion	4
Ectopic	1
Endometriosis	3
PID	7
Infertility	3

Table 3: Cases as per clinical evaluation

On Examination		
Pallor	17	
Tachycardia	18	
Hypotension	6	
Per Abdomen	Positive- 17	NAD- 2
Per Vaginum	Positive- 17	NAD- 2

Table 4: Investigations of cases

Investigations		
Hemoglobin (gm/dl)	5-7 gm/dl- 7, 7-10 gm/dl-6, >10 gm/dl-6	
Urine Pregnancy test	Positive- 17	Negative-2
USG	Size (cms)	
	Site- R (12), L (6)	➤ 2cm – 1
	Cardiac Activity -3	➤ 2-5 cm – 12
	Free Fluid- 18	➤ 5 cm – 6

Table 5: Final outcome

Intraoperative	Ruptured- 14	Unruptured-3	Heterotropic-1	
Site of Tube R- 12, L-5	Interstitial-1	Isthmus-2	Ampulla-14	Fimbria- Nil
Blood Loss (ml)	< 500 ml- 3	500-1000 ml- 4	1000-2000 ml- 6	>2000ml-4
Procedure	Laparoscopy- Nil	Laprotomy-17	Salpingectomy-17	Medical-1 (Failed)

Discussion

The study shows the incidence of ectopic pregnancy in our clientele to be 1.65 % per 1000 first-trimester pregnancies as against 2 % in United States as per the survey done by the American College of Obstetricians and Gynaecologists. Risk factors among our clientele are on the rise due to increased incidence of infertility and pelvic inflammatory diseases.

The classic triad of abdominal pain, amenorrhea, and vaginal bleeding is present in only 50 % of the cases and is usually seen more in tubal rupture patients. Unfortunately, the diagnosis can be quite challenging as the presentation can vary significantly. In one study, the percentage of patients who presented with ectopic pregnancy and abdominal pain was 98.6 %, amenorrhea 74.1%, and irregular vaginal bleeding 56.4 %. Abdominal tenderness (97.3%) and adnexal tenderness (98%) were the most common physical findings [12]. In 2006; Barnhart KT *et al.* reported an increased odds ratio for ectopic pregnancy in patients presenting with first-trimester symptoms if moderate to severe bleeding and pain were present.

Urine pregnancy test was not considered mandatory in the study to avoid confusions in situations like weakly/faintly positive status. Again, evidence suggests that a combined transvaginal ultrasonography and serum hCG level have got a sensitivity and specificity ranging from 95 % to 100 % [13]. However, these two investigations were not considered mandatory as these facilities are not always present in the peripheral set-up.

The power of the study is low because of small sample size as because the incidence is low. However, there is a scope in this pilot study to devise a way of developing a scoring system for the diagnosis of tubal ectopic pregnancy for use by the general practitioners or in a peripheral set-up. Also, patients with risk factors should undergo an early screening for ectopic pregnancy with the inclusion criteria of our study once they have a positive pregnancy test.

Conclusion

The dictum of being ectopic minded for reproductive age group with lower abdominal pain is found to be important for an early diagnosis. Early diagnosis not only gives a better outcome but also gives options for tubal salvage by medical treatment with methotrexate surgically administered medical (SAM) treatment by ultrasonography, hysteroscopy, laparoscopy and falloscopy. In the present-day setup medical termination of pregnancy should be done only after confirmation of the site of pregnancy. Ectopic pregnancy should be kept in mind whenever antitubercular drugs are used especially as a part of the infertility treatment. Also, prior caesarean delivery warrants high index of suspicion especially with the advent of caesarean scar pregnancy. Health education about sexually transmitted diseases

and pelvic inflammatory diseases would be helpful in reducing the incidence of ectopic pregnancies.

Whenever pregnancy is not wanted, concurrent use of contraceptive measures may be advocated in treating chronic pelvic inflammatory diseases. More use of emergency contraceptives should be encouraged to slow down unwanted pregnancies. Use of modern technology has not only given early diagnosis and reduction of mortality rate from ectopic pregnancy but also the possibility of re-implantation of the ectopic pregnancy in the days to come!

This study has an updated spectrum of ectopic pregnancies managed in peripheral hospitals. Lack of facilities for early diagnosis among our patients results in more invasive treatments in our hospitals. The availability of transvaginal ultrasound and serum beta hCG testing will be useful in early diagnosis and tubal salvage procedures.

In future this study may help in deciding a clinical scoring system for use in our clinical endeavor so that early diagnosis of ectopic pregnancy can be done and we can combat ectopic pregnancy in a better way.

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