

Research Article

Clinical profile and management of ectopic pregnancy in patients with ectopic pregnancy at GMERS medical college and hospital Dharpur-Patan, North Gujarat region, India

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ABSTRACT

Background: Ectopic pregnancy is assuming greater importance because of its increasing incidence and its impact on woman's fertility. Objective: To study the clinical profile and management of ectopic pregnancies.

Methods: This prospective study was conducted over one year from 1st January 2013 to 31st December 2013 for risk factors, mode of presentation, status at admission, diagnostic and treatment modalities and management of patients with ectopic pregnancy.

Results: Over all mean rate of ectopic pregnancy has been found 11.41/1000 births. Out of total 52 cases 32 (64%) were referred while 20 (36%) were emergency cases. Out of 52 patients, 23 (44.23%) were from urban areas and 29 (55.77%) were from rural areas. Majority of the patients (51.97%) were in 26-30 years age groups. Gravida 3 had highest incidence (30.76%) of ectopic pregnancy. Maximum (50%) ectopic pregnancies were found in women with active married life of 5-10yrs. Out of total 52 cases, 44 (84.62%) were ruptured ectopic pregnancy cases. Ampulla was the most common site for tubal ectopic pregnancy (51.92%). Abdominal pain was the most common presenting symptoms (92.30%) followed by amenorrhoea in 84.61% cases. Majority of patients had history of infertility (42.30%) as a major risk factor. Laparoscopic management was done in 13 (25%) patients out of them lap. salpingectomy was done 9 (17.31% of total) and lap. Salpingostomy was done in 4 (7.69% of total) patients.

Conclusion: Although ectopic pregnancy will never be completely prevented, but incidence can be reduced and much of the morbidity and mortalities can be minimised by prevention and efficacious diagnostic and interventional strategies aimed primarily at those women who are at high risk for the condition and taking precaution that woman who likely to become high risk are handled in such a way that the number of these high risk women are reduced.

Keywords: Ectopic pregnancy, Laparoscopy, Salpingectomy, Ampulla, Abdominal pain

INTRODUCTION

Ectopic pregnancy is a pregnancy in which fertilized ovum implants other than the endometrial lining of the uterus. In 95% of EPs, fertilized ovum implants in the tubes, but rarely in other organs like abdomen, ovaries, cervix, spleen, omentum, caesarian section scar, and

intramural. The risk factors for EP include pelvic inflammatory disease, previous tubal surgery, previous tubal pregnancy, progestin contraceptive, assisted reproduction, ovulation induction, induced abortion, salpingitis isthmica nodosa, smoking, and diethyl stilbestrol exposure.^{1,2} Most of the tubal pregnancies become symptomatic within 12 weeks, but a small

number of them progress beyond this gestation and are diagnosed late.³ Proper management of EP needs early diagnosis, resuscitation, timely treatment, and follow-up. Early diagnosis of EP is a difficult task but can be possible with the help of quantitative β -human Chorionic Gonadotropin (β -hCG) level, transvaginal ultrasonography, and laparoscopy.^{4,5} In spite of the advances in diagnostic methods and management, ectopic pregnancy still remains a very serious threat to maternal safety and hence an open field to study still deeply for obstetricians and gynecologists. The purpose of this study was to highlight clinical profile of patients of EP and to elucidate the outcome after different treatment modalities in a GMERS medical college, Dharpur-Patan hospital.

METHODS

A prospective study of one year was carried out to make a detailed analysis of 52 cases of ectopic pregnancy admitted in GMERS medical college and hospital, Dharpur-Patan hospital during January 2013 to December 2013, after obtaining ethical committee clearance from the hospital authorities. In all cases thorough clinical examination and necessary investigations were done to establish proper diagnosis and immediate surgical treatment was carried out. They were analyzed for incidence, presentation on admission, history, investigation including pregnancy test, culdocentesis, trans-vaginal ultrasound and laparoscopy were carried out. These cases were treated and follow up for one month was carried out post operatively. All the women with ectopic pregnancies (who were diagnosed after a clinical examination and investigations) were included in the study. Data were analyzed using Microsoft office excel (version 2007). Numerical data were subjected to descriptive analysis, with mean \pm SD. Categorical data were analyzed as frequency and percentage.

RESULTS

Table 1 shows prevalence of ectopic pregnancy at GMERS medical college & hospital, Dharpur-Patan over last five years. Over all mean rate of ectopic pregnancy has been found 11.41/1000 births. Out of total 52 cases 32 (64%) were referred, 20 (36%) were emergency cases. Out of 52 patients, 23 (44.23%) were from urban areas, 29 (55.77%) were from rural areas. Majority of patients (51.97%) were in 26-30 years age groups (Table 2).

Table 1: Incidence of ectopic pregnancy at GMERS medical college, Dharpur, Patan.

Year	No. of births	Ectopic pregnancy	Rate of ectopic pregnancy/1000 births
2009	3962	39	9.84%
2010	3681	41	11.13%
2011	3969	46	11.58%
2012	4051	47	11.60%
2013	4023	52	12.92%

Table 2: Distribution of patients according to their age groups.

Age groups (years)	In this study (n=52)	
	No. of patients	Percentage
20-25	7	13.46
26-30	27	51.92
31-35	12	23.08
>35	6	11.54

Gravida 3 had highest incidence (30.76%) of ectopic pregnancy (Table 3). Maximum (50%) ectopic pregnancies were found in women with active married life of 5-10 years. Out of total 52 cases, 44 (84.62%) were ruptured ectopic pregnancy cases. Table 4 shows ampulla was the most common site for tubal ectopic pregnancy (51.92%) followed by isthmus (23.08%) and Infundibulum (7.69%). Abdominal pain was the most common presenting symptoms (92.30%) followed by amenorrhoea in 84.61% cases (Table 5).

Table 3: Distribution of patients according to their gravidity.

Gravidity	In this study (n=52)	
	No. of patients	Percentage
1	12	23.08
2	12	23.08
3	16	30.76
4	08	15.38
5	02	3.85
>5	02	3.85

Table 4: Distribution of patients according to their site of ectopic pregnancy.

Site of ectopic pregnancy	In this study (n=52)	
	No. of patients	Percentage
Ampullary	27	51.92
Isthmic	12	23.08
Tubal abortion	06	11.54
Infundibular	04	7.69
Cornual	02	3.85
Ovarian	01	1.92

Table 6 shows that majority of patients had history of infertility (42.30%) as a major risk factor. Family planning measures like history of tubal sterilization responsible for 30.76% cases. Further, history of treatment of infertility (ovulation induction) which is also a risk factor for ectopic pregnancy was present in 15.38% of patients.

Various investigation/tests carried out to reach at the diagnosis of ectopic pregnancy. Pregnancy card test was

done in all 52 cases. It was found positive in 46 cases and weakly positive in 4 cases. Colpopuncture was done in 38 (73.07%) cases and found positive in 30 (78.95%) and negative in 8 (21.05%) cases. Diagnostic paracentesis was done in 15 (28.85%) cases and found positive in 11 (73.33%) cases. Diagnostic laparoscopy was needed in 4 cases to reach at definite diagnosis and was positive in all cases. Serum β -hCG was done in only 6 (11.54%) cases. Transvaginal sonography was done in all 52 cases which was showing either complex adnexal mass, gestational sac or free fluid or a combination of them. Adnexal mass was seen in 40 (76.92%), gestational sac in 20 (38.46%) and free fluid in 38 (75%) cases.

Table 5: Distribution of patients according to their presenting sign and symptoms.

Clinical features	No. of patients	Percentage
Lower abdominal pain	48	92.3
Amenorrhea	44	84.6
Cervical tenderness	43	82.7
P/A tenderness	40	76.9
Adnexal mass/fullness	34	65.4
Abnormal uterine bleeding	31	59.6
Nausea, vomiting, abdominal distension	23	44.2
Guarding/rigidity	14	26.9
Syncope/giddiness	8	15.4

*Combination of one or more sign and symptoms were present in one patient

Table 6: Distribution of patients according to their risk factors for Ectopic Pregnancy.

Risk factors	No. of patients	Percentage
H/o infertility	22	42.3
Sterilization	16	30.8
Previous abortion (Spontaneous/induced)	10	19.2
Other pelvic surgery	10	19.2
Previous PID	9	17.3
None	9	17.3
Treatment of infertility	8	15.4
Previous tubal surgery	6	11.5
Previous ectopic pregnancy	5	9.6
H/o tuberculosis	5	9.6
IUD <i>in situ</i>	1	1.9

*Combination of one or more risk factors were present in one patient

Laparoscopic management was done in 13 (25%) patients out of them lap. Salpingectomy was done 9 (17.31% of total) and lap. Salpingostomy was done in 4 (7.69% of total) patients. Medical treatment was tried in two

patients but only 1 (1.92%) of them could be managed successfully (Table 7).

Table 7: Distribution of patients according to their management of ectopic pregnancy.

Management of ectopic pregnancy	No. of patients (n=52)	Percentage
Partial Salpingectomy	25	48.08
Total salpingectomy	05	9.62
Salpingo. oophorectomy	08	15.38
Laparoscopic partial salpingectomy	09	17.31
Laparoscopic salpingostomy	04	7.69
Medical management	01	1.92

DISCUSSION

In the developed world, between 1% and 2% of all reported pregnancies are ectopic pregnancies (comparable to the incidence of spontaneous twin pregnancy). The incidence is thought to be higher in developing countries. Higher rate of ectopic pregnancy was attributed to these factors: an increase in risk factors such as pelvic inflammatory disease and smoking in women of reproductive age, the increased use of Assisted Reproductive Technology (ART) and increased awareness of the condition.⁶ In Aqueela Ayaz et al. incidence of ectopic pregnancy was 5.8/1000 pregnancies.⁷ The rate of EP was 1.9% as reported by Lozeau and Potter⁸ in USA, and 1.04% and 1% by Bangash and Ahmad,⁹ and Waseem,¹⁰ respectively, in Pakistan. Incidence in our study is 11.41 of last five years which was higher than other studies because our hospital serves whole north Gujarat region of India.

In our study 55.77% patients were from rural areas probably due to improvement in the quality of medical services provided by government in rural areas.

In our study 38 patients (65.38%) are of below 30 years age group which is considered a normal reproductive period in Indian setup. While 12 patients (34.62%) are above 30 years age group. The age incidence is compared with other studies. It is observed from that highest incidence is below 30 years of age, may be due to maximum number of conception occurring during that period i.e. child bearing period. Kamala Rani Khera¹¹ and Ravi Prabha Kulshrestha¹² have also reported highest incidence of 80% and 80.8% respectively below 30 years of age. The incidence in present study also similar to their study and that is 65.38% women. The highest incidence of ectopic pregnancy is seen in the women of 2 or more than 2 parity, which is due to highest rate of conception and post abortal and post puerperal infection. Our incidence is almost similar to the study conducted by Ravi Prabha Kulshrestha¹³

It is seen that the commonest part of fallopian tube involved in the implantation of the ectopic pregnancy is the ampullary region. The second most common part is isthmic region. In our study ectopic pregnancy in ampullary region was present in 51.92% followed by 23.08% cases in isthmic region which is similar to the study of Kamala Rani Khera.¹¹

Abdominal tenderness is the commonest presenting sign of ectopic pregnancy which was present in 76.92% cases in our study which is nearly similar to study of U. Gupta.¹⁴ Abdominal tenderness occurs due to peritoneal irritation by blood. Nausea, vomiting and abdominal distension was present in 44.23% of cases in our study which was due to collection of blood in the peritoneal cavity. Tenderness on Cervical movement was present in 82.69% cases in present study which was nearly similar to study of U. Gupta.¹⁴ Fullness of fornix which was present in 65.38% of cases in our study was due to collection of blood in pouch of Douglas or general peritoneal cavity.

Ectopic pregnancy is more common in women attending infertility clinics¹⁵ even in the absence of tubal disease. In addition, the use of ART increases the rate of ectopic pregnancies. *In Vitro* Fertilization (IVF) is associated with an ectopic pregnancy risk of 2-5% and it may be higher than this where there is tubal disease. Indeed the first IVF pregnancy, before the first IVF live birth, was a tubal ectopic pregnancy.¹⁶ Some types of contraception, such as progestogen-only contraception and the intrauterine contraceptive device, are associated with an increased incidence of ectopic pregnancy when there is contraceptive failure, without necessarily increasing the absolute risk of ectopic pregnancy.¹⁷ One third of all cases of ectopic pregnancy are thought to be associated with smoking.¹⁷ There is a dose-effect relationship, with the highest adjusted Odds Ratio (OR) (3.9) when more than 20 cigarettes are smoked a day.¹⁹ Several mechanisms for this association have been suggested, including one or more of the following: delayed ovulation, altered tubal and uterine motility and microenvironment, or altered immunity.^{20,21} The risk of ectopic pregnancy increases with advancing maternal age, with age over 35 years being a significant risk factor.⁶ Hypotheses for this association include the higher probability of exposure to most other risk factors with advancing age, increase in chromosomal abnormalities in trophoblastic tissue and age-related changes in tubal function delaying ovum transport, resulting in tubal implantation.¹⁹ In our study history of infertility was present in 42.30% cases which was comparable with plotted studies.

In our study ectopic pregnancy was managed by partial salpingectomy in 48.08% cases followed by laparoscopic partial salpingectomy in 17.31% cases. Laparoscopy in Qatar and laparotomy in Bahrain were the treatment of choice to treat advance ectopic cases.²² Lozeau and Potter¹² reported a success rate of 88% in a single-dose

versus 93% in a multiple-dose regimen of methotrexate. transvaginal ultrasound showed a high predictive value of ectopic pregnancy.²³⁻²⁵ Salpingostomy was concluded as a better option than salpingectomy regarding the future fertility outcome in one study.²⁶

CONCLUSION

The incidence of ectopic pregnancy is on rise, thereby causing serious concern over maternal mortality. More young women are subjected to various methods of fertility control like oral contraceptive pills, intra uterine contraceptive device and tubal surgeries to limit their families. Modern drugs for induction of ovulation and tubal reconstructive procedures and women conceive after long period of infertility have increased risk of ectopic pregnancy. Incidence of ectopic pregnancy has become increase, in spite of sophisticated diagnostic aids like ultrasound which can detect very early ectopic pregnancy. Although ectopic pregnancy will never be completely prevented, but incidence can be reduced and much of the morbidity and mortalities can be minimized by prevention and efficacious diagnostic and interventional strategies aimed primarily at those women who are at high risk for the condition and taking precaution that woman who likely to become high risk are handled in such a way that the number of these high risk women are reduced.

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