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Original Research Article

A study of surgically managed ruptured ectopic pregnancies in a rural medical college hospital over a period of 5 years

Kajal Kumar Patra[1], Siddhartha Majumder[2]*, Shibram Chattopadhyay[2], Poulami Samanta[2]

[1]Department of Obstetrics and Gynecology, Bankura Sammilani Medical College, Bankura, West Bengal, India
[2]Department of Obstetrics and Gynecology, Nil Ratan Sircar Medical College and Hospital, Kolkata, West Bengal, India

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***Correspondence:**
Dr. Siddhartha Majumder,
E-mail: siddharthamajumder5@gmail.com

ABSTRACT

Background: Although ectopic pregnancy is of interest to the embryologist, general practitioner, obstetrician, and abdominal surgeon for various reasons, our present study was undertaken to determine the incidence, epidemiological characteristics, clinical features, risk factors, diagnosis, management and operative findings of ectopic pregnancies at our hospital.
Methods: This is a retrospective study of ectopic pregnancies that were managed operatively at Bankura Sammilani Medical College and Hospital from April 2013 to April 2018. Unruptured tubal ectopic pregnancy that were managed medically are excluded in this study.
Results: The incidence of ectopic pregnancy was 0.59%, and the peak age of incidence was 20-25 years (33.84%) with third gravidas (46.3%) being most commonly affected. The most common symptoms were amenorrhea (96.92%), abdominal pain (90.76%), and vaginal bleeding (11.53%) and the most common signs were pallor (46.30%), shock (38.46%), and cervical motion tenderness (33.84%). Most common risk factors were past history of tubectomy (66.61%). The commonest site for tubal ectopic pregnancy was ampullary in 545 cases (84.89%). Salpingectomy done in 553 cases (85.07%) was the most commonly performed operation for ruptured tubal ectopic pregnancy.
Conclusions: In the surgical management of ectopic pregnancy, the benefits of salpingectomy over salpingostomy are uncertain. The early diagnosis of an ectopic pregnancy reduces the presentation to response time, which is crucial in determining the morbidity, mortality and long-term effects for the patient. Although with earlier diagnosis, medical therapy with methotrexate can be offered and surgery avoided in some women, the best regimen remains unclear. There have been advances made in the management of ectopic pregnancy but there are still questions to be answered.

Keywords: Clinical presentation, Ectopic pregnancy, Parity, Risk factors, Tubectomy, Salpingectomy

INTRODUCTION

Implantation of the blastocyst elsewhere other than the endometrial lining of the uterine cavity is considered ectopic.[1] Although it has an incidence of only 1 to 2 percent among all first trimester pregnancies, it accounts for 4% of all pregnancy related deaths in the United States (1998-2005).[2]

As women with ectopic pregnancy frequently have no identifiable risk factors, it has been seen in a prospective case-controlled study that increased awareness of ectopic pregnancy and a knowledge of the associated risk factors

helps identify women at higher risk in order to facilitate early and more accurate diagnosis.[3] Ectopic pregnancy is of interest to the embryologist, to the general practitioner, to the obstetrician, and to the abdominal surgeon for various reasons.[4] Present study was undertaken to determine the incidence, epidemiological characteristics, clinical features, risk factors, diagnosis, management and operative findings of ectopic pregnancies at BSMC hospital.

METHODS

This is a retrospective study of ectopic pregnancies that were managed operatively at Bankura Sammilani Medical College and Hospital from April 2013 to April 2018. Case sheets of patients with ectopic pregnancies were traced through the labour room log books and operation theatre record books.

Facilities for diagnosis like ultrasonogram were not available at all times. Laparoscopy and serum β-hCG, were not used due to technical reasons, however urinary β-hCG (Elisa test) was available for all the cases. Information regarding the total number of deliveries in the study period, details of demographic characteristics, risk factors for the ectopic pregnancy, clinical symptoms and signs, diagnostic tools used, and treatment were obtained. All the surgeries were partial or total salpingectomy done by open laparotomy and spinal or general anesthesia was used in all the cases. Decision for laparotomy was made depending on the patient condition, site of the tubal ectopic, parity, contralateral tubal pathology and experience of the surgeons.

Inclusion criteria

- All cases of disturbed ectopic pregnancy managed surgically.

Exclusion criteria

- Cases of unruptured tubal ectopic pregnancy managed medically are excluded in this study.

RESULTS

The incidence of ectopic pregnancy was 0.59% during these 5 years.

Table 1 shows the age, gravida and ethnicity wise distribution of the patients. The peak age group of incidence was 20-25 years (33.84%) and third gravidae (46.3%) were among the most affected. The affected patients were mainly found to be belonging to the non-tribal population (85.3%).

Table 2 shows the symptoms and signs presented by the patients among which the most common symptoms were amenorrhea (96.92%), abdominal pain (90.76%), and vaginal bleeding (11.53%) and the most common signs were pallor (46.30%), shock (38.46%), and cervical motion tenderness (33.84%). Syncopal episodes (3.84%) were also reported.

Table 1: Patient profile.

Patient particulars		No.	Percentage (n=650)
Age (years)	<20	39	6
	20-25	220	33.84
	26-30	180	27.69
	>30	211	32.46
Gravida	Primi gravida	73	11.23
	Second gravida	157	24.15
	Third gravida	301	46.30
	Fourth gravida or more	119	18.3
Ethnicity	Tribal	96	14.76
	Non-tribal	554	85.23

Table 2: Mode of presentation.

Clinical features		N	% of cases
Symptoms	Amenorrhea	630	96.92
	Abdominal pain	590	90.76%
	Vaginal bleeding	75	11.53%
	Syncope	25	3.84%
Signs	Pallor	301	46.30%
	Shock	250	38.46%
	Cervical motion tenderness	220	33.84%

Table 3: Associated risk factors.

Risk factors	N	% of cases
Tubectomy	433	66.61
Induced abortion	168	25.84
Spontaneous abortion	84	12.92
Pelvic inflammatory disease	80	12.30
Primary infertility	12	1.84
Previous pelvic surgery	10	1.53
Previous ectopic	8	1.23
Not identifiable	05	0.76
Intrauterine contraceptive device	02	0.30
Secondary infertility	01	0.15

Table 3 shows that only 0.76% had no identifiable risk factor whereas the majority had risk factors such as past history of tubectomy (66.61%), or history of induced abortion (25.84%) and spontaneous abortion (12.92%). Other important risk factors were pelvic inflammatory disease (12.30%), primary infertility (1.84%), previous pelvic surgeries (1.53%), and previous ectopic pregnancies (1.23%). Other lesser common risk factors were presence of intrauterine contraceptive device (0.30%) and patients having secondary infertility (0.15%).

Table 4 shows the distribution of cases according to the findings at the time of laparotomy. There were 642 tubal pregnancies (98.76%) of which 584 were ruptured ectopic pregnancies (90.96%) and 58 were tubal abortions (9.03%). There were 8 ovarian pregnancies (1.23%). There was a slight preponderance with 326 right fallopian tube ectopic pregnancies (50.77%). The commonest site for tubal ectopic pregnancy was ampullary in 545 cases (84.89%).

Table 4: Laparotomy findings.

Type of Ectopic pregnancy	Total number of cases (n=650)		
Tubal ectopic pregnancy	Ruptured tubal ectopic pregnancies (n=642)	584	90.96%
	Tubal abortions (n=642)	58	9.03%
Total number of tubal ectopic pregnancies		642	98.76%
Non-tubal ectopic pregnancy	Ovarian	8	1.23%
Total number of non-tubal ectopic pregnancies		8	1.23%
Side of Tubal ectopic pregnancy	**Number of cases (n=642)**		
Right fallopian tube (n=642)		326	50.77%
Left fallopian tube(n=642)		316	49.22%
Site of tubal ectopic pregnancy	**Number of cases (n=642)**		
Site of tubal ectopic (n=642)	Ampulla	545	84.89%
	Cornual	62	9.65%
	Isthmus	31	4.82%
	Fimbrial	4	0.62%

Table 5: Surgical procedure.

Type of Surgery	(n=650)	Percentage
Salpingectomy	553	85.07
Salpingooopherectomy	65	10
Salpingostomy	20	3.07
Ovariotomy	8	1.23
Fimbriectomy	4	0.61

Table 5 shows the distribution of cases according to management of ectopic pregnancies. Salpingectomy done in 553 cases (85.07%) was the most commonly performed operation for ruptured tubal ectopic pregnancy. This was followed by salpingo-oopherectomy in 65 cases (10%) and conservative surgeries like salpingostomy in 20 cases (3.07%), ovariotomy in 8 cases (1.23%) and fimbriectomy in 4 cases (0.61%).

DISCUSSION

A spot urine pregnancy test was performed in all cases and was found to be positive in 100% cases. Diagnosis of ectopic pregnancy was made on clinical findings alone.

The incidence of ectopic pregnancy in this study is 0.59% which is similar to the study done by Shetty et al (0.56%) and Hoover (0.64%) but less than the incidence in the study done by Tahmina et al (0.91%).[5-7] The peak age of incidence in this study is 20-25 years (33.84%) which is consistent with the study of Gupta et al (47.5%) and Karmakar et al (44%).[8,9] In this study ectopic pregnancies were found to be present more commonly in third gravidae (46.3%) followed by second gravidae (24.5%) and fourth or more gravidae (18.3%). In studies done by Shetty et al (83.9%) and Laxmi (80%) majority of the patients were found to be multiparous.[5,10] However in studies done by Gupta et al (40%) and Karmakar et al (48%) nulliparous women were found to be more affected.[8,9]

Patients presenting early have subtle or absent symptoms and signs before rupture, hence we depend more on precise diagnostic technology for them. However, those who are diagnosed late have a "classic" presentation, characterized by a triad of delayed menstruation, pain and vaginal bleeding or spotting.[1] The most common symptom was pain abdomen (90.76%) following a period of amenorrhea (96.92%) and sign was pallor (46.3%) and vasomotor symptoms from vertigo to syncope were seen less commonly (3.84%).

Previous female sterilizations (66.61%), induced (25.84%) and spontaneous abortions (12.92%), pelvic inflammatory disease (12.3%), associated primary infertility (1.84%) and previous pelvic surgeries (1.53%) were all important risk factors. There were 8 cases having history of previous ectopic pregnancies (1.23%) which is less in comparison to studies done by Shraddha Shetty (3.2%), Gupta et al (5%) and Karmakar et al (8%).[5,8,9] Among these, the risk factors found corresponding with other study findings are previous abortion in study by Shetty et al (29%) and pelvic inflammatory disease in study by Laxmi (10%).[5,10] Associated history of IUCD insertion (0.3%) was low in comparison to study by

Shetty et al (6.4%), Karmakar et al (8%) and Mandal et al (4.5%).[5,9,11]

The patients that were operated during this study for ectopic pregnancy were found to have either ruptured ectopic pregnancy (90.96%) or tubal abortion (9.03%) which was found to have similar incidence as per study of RC Mandal as 90.0% and 9.1%.[11]

The only nontubal ectopic pregnancy in this study was ovarian pregnancy (1.23%), with incidence similar to the study of Mandal (1.5%) but there were no reported rudimentary horn pregnancies.[11] Incidence of right sided tubal ectopic pregnancy (50.77%) was slightly more than left sided tubal ectopic pregnancy (49.22%). Preponderance of right sided tubal ectopic pregnancy was also seen in the study done by Shetty et al.[5] Ampullary ectopic pregnancy (84.89%) was the commonest in present study and others.[5,8,11]

Facilities of laparoscopy were not available due to technical reasons; hence laparotomy was preferred with salpingectomy (85.07%) being most commonly done procedure followed by salpingooopherectomy (10%) which was similar to the study by Mandal done in similar conditions.[11] In some cases the ovary had to be removed due to ovarian pregnancy, dense adhesions or presence of pathology. There were no negative laparotomies done. Although ectopic pregnancy is a significant cause of maternal mortality in the first trimester, in this study there was were no mortalities.

CONCLUSION

Ectopic pregnancy rate has been reported to be more common in older women.[6] But as per present study there is a greater incidence in young women, which may be due to the fact that most women in India get married and complete their family at an early age. This age corresponds to the age of peak sexual activity and reproduction. The higher incidence in multigravidae are probably due to previous miscarriages and infections resulting in tubal damage.

With any form of contraception, the absolute number of ectopic pregnancies is said to decrease as pregnancy occurs less often, however with some contraceptive method failures, the relative number of ectopic pregnancies is increased. Examples include sterilization, copper and progestin- releasing intrauterine devices (IUDs), and progestin only contraceptives.[12] There is a strong evidence of previous tubectomy being associated with ectopic pregnancy in present study. Tubectomy services are provided under the National Family Planning Programme.

In recent times infertility is linked to increased risks of ectopic pregnancies and ART procedures lead to atypical implantations resulting in cornual, abdominal, cervical, ovarian, and heterotropic pregnancies.[1] As ectopic pregnancy remains a leading cause of maternal mortality and accounts for a sizeable proportion of infertility and ectopic recurrence, so its immediate and delayed sequel must not be underestimated.

Moreover, in developing countries, where transport facilities are poor, diagnosis and interventions are delayed, majority of the patients are diagnosed late after rupture and morbidity, transfusion requirements and time of hospital stay are increased. The early diagnosis of an ectopic pregnancy reduces the presentation to response time, which is crucial in determining the morbidity, mortality and long-term effects for the patient.

Ectopic pregnancy is an important cause of morbidity and mortality worldwide. Use of transvaginal ultrasonography and quantitative measurement of the β subunit of human chorionic gonadotropin (β-hCG) has led to a reduction in the need for diagnostic laparoscopy. With earlier diagnosis medical therapy with methotrexate can be offered and surgery can be avoided in some women, though the best regimen remains unclear. In the surgical management of ectopic pregnancy, the benefits of salpingectomy over salpingostomy are uncertain. Although there have been advances in the management of ectopic pregnancy there are still questions to be answered.

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