Ectopic Pregnancy - A 1 Year Clinical Study in King George Hospital, Visakhapatnam

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ABSTRACT

BACKGROUND

Ruptured ectopic is a life threatening obstetric emergency. Obstetrician must have a high index of suspicion for ectopic pregnancy and should be aware of importance of early diagnosis and early intervention. The present study was undertaken to evaluate the incidence, clinical presentation, risk factors, treatment and morbidity associated with ectopic pregnancy.

METHODS

Retrospective analysis of ectopic pregnancy was done in King George Hospital, Visakhapatnam from January 2020 to December 2020 in the department of OBG. The following parameters: Age, risk factors, clinical presentation, site of ectopic, diagnostic methods, mode of treatment were noted.

RESULTS

A total of 63 cases were reported during this time frame. It is a tertiary care centre getting referrals from nearby districts and other hospitals. Incidence of ectopic pregnancy in the present study is 0.89 %. 41.26 % of patients belonged to age group between 26 to 30 years. Out of 63 cases 49.20 % were multigravida. 28 % of the cases were associated with previous H/O abortions and 23 % of the cases were associated with PID and in 17.4 % of the cases there was no predisposing factors. 96.82 % the patients presented with pain abdomen. Shock in 34.92 % of the cases. Ampulla is the most common site of ectopic. In 76 % of the cases there was hemoperitoneum > 500 ml. Salpingectomy was done in 79.3 % cases. 84 % of cases required blood transfusion > 1 unit. There was no mortality.

CONCLUSIONS

Ectopic pregnancy is one of the obstetric emergency with significant morbidity and mortality. PID and post abortal sepsis are one of the important risk factors for ectopic pregnancy. As many patients may not have recognizable risk factors, a high index of suspicion is critical for early diagnosis. Early USG diagnosis of ectopic pregnancies reduces mortality and enables us to offer the patient conservative medical and surgical treatment.

KEYWORDS

Ectopic Pregnancy, TVS, Ampulla, Salpingectomy

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BACKGROUND

An ectopic pregnancy was identified in 1693 by Busiere when he was examining an executed prisoner's body, in Paris.[1] More detailed analysis was done by Gifford of England in 1731, and he described it as a fertilized ovum implanted outside the uterine cavity.[1] An ectopic pregnancy results from various factors that interrupt successful migration of fertilized ovum in to the uterine cavity and delaying the passage of embryo through the tube. An ectopic pregnancy is of greater importance asits incidence is increasing and its effect on women's fertility.[2,3] Ectopic pregnancy is an important cause of first trimester morbidity and mortality and based on U.S. and U.K. stastistics it accounts for 80 % of all first trimester maternal deaths.[4,5,6] A clinician should be aware of risk factors of ectopic pregnancy, there by diagnosis could not be missed. Most common risk factors include PID, previous history of ectopic, tubal surgeries like failed tubal sterilization methods, tubal reconstructive surgeries, ovulation induction in assisted reproduction techniques, previous history of abortions, multiple sexual partners, smoking, IUCD s. Fallopian tube is the most common site of ectopic. It accounts for 95 % of all ectopic pregnancies. The other sites include ovary, cervix, previous cesarian section scar, rudimentory horn of a bicornuate uterus, broad ligament and abdominal cavity. Heterotopic pregnancy is common in ART where there is both intra and extra uterine pregnancies. USG in particular TVS is the gold standard for diagnosis of ectopic pregnancy. Beta-hcG assays and advanced transvaginal USG help in the early diagnosis of an ectopic pregnancy which facilitates use of medical and conservative surgical procedure that preserves fertility. This retrospective analysis was done to determine incidence, risk factors, treatment, morbidity and mortality associated with ectopic.

Objectives

The aim of the present study was to evaluate the incidence and outcome of ectopic pregnancy. The objective of the study was to know the clinical presentation, risk factors, treatment and morbidity associated with all ectopic pregnancies presented to department of Obstetrics & Gynaecology, King George hospital, Visakhapatnam from January 2020 to December 2020.

METHODS

This retrospective study was conducted in KGH, Visakhapatnam from January 2020 to December 2020 in the department of OBG. All cases of ectopic pregnancy were included in the study. Information regarding the total number of deliveries during this study period, presenting clinical symptoms, signs, detailed obstetric history, risk factors, site of ectopic, genital infection, line of management as well as morbidity were obtained. Details of general physical examination, abdominal and bi manual examination were noted. Basic investigations include CBC, BGT, UPT, USG.

Additional investigations include Beta-hcG, USG pelvis with Doppler study were done. Culdocentesis was also done. All the surgeries were done by laparotomy under spinal or general anaesthesia. Details of intra operative findings, site of ectopic, surgical procedure were also noted. All the specimens were sent for histopathological examination, and their reports were noted. Information regarding number of blood transfusions, hospital stay, IRCU admission were also analysed.

Inclusion Criteria

All confirmed cases of ectopic pregnancy either ruptured or unruptured.

Exclusion Criteria

All intra uterine pregnancies.

Statistical Analysis

The recorded data was compiled and entered. Descriptive statics included computation of percentages.

RESULTS

The study was conducted at King George Hospital from January 2020 to December 2020. Total 63 cases of ectopic pregnancy were diagnosed. Total number of deliveries were 7033 during this period. So the incidence of ectopic was 0.89 %.

Age (yrs)	No. of Cases (%)	Gravida	No. of Cases (%)
< 20	9 (14.28 %)	primi	17 (26.98 %)
21 - 25	20 (31.74 %)	Second	15 (23.8) %
26 - 30	26 (41.26 %)	multi	31 (49.20 %)
> 30	8 (12.67 %)	-	

Table 1. Demographic Parameters

Majority of patients belonged to the age group between 26-30 years. Majority of the cases were multi gravida.

Risk Factors	Number of Cases n = 63	%
PID	15	23.8
Abortion	18	28.57
Spontaneous	6	9.52
D & C	12	19.04
Tubal recanalisation	1	1.58
Failed tubal sterilisation	8	12.69
Infertility	2	3.17
None	11	17.46
Previous ectopic	1	1.58
Post caesarean	7	11.1
Oc pills	0	0
Cu-T	0	0

Table 2. Predisposing Factors

In 28 % of the cases previous H / O abortions were present, which includes both spontaneous and D & C. PID was the cause in 23 % of the cases.

Failed tubal sterilization is seen in 12 % of cases, history of previous lscs seen in 11 % of cases, history of infertility in 3 % of cases. In 17 % of cases there were no pre disposing factors.

Symptoms& Signs	Number n=63	%
Pain abdomen	61	96.82
Amenorrhoea	46	73.01
Bleeding p/v	43	68.25
Pallor	48	76.19
Tenderness	58	92.06
Guarding	18	28.57
Distension	32	50.79
Mass felt through fornix	28	44.44
Syncopal attacks	12	19.04
Shock	22	34.92
Cervical motion tenderness	46	73.01

Table 3. Presenting Symptoms & Signs

Pain abdomen was present in 96.82 % of the cases. Amenorrhoea in 73 % of the cases. Bleeding in 68 % of the cases. Shock in 34.9 % of the cases.

Out of 63 cases, UPT was positive in 62 (98.4 %) cases. USG confirmed ectopic in 59 (93.6 %) cases and culdocentesis positive in 50 (79.3 %) cases.

USG Features	Number of Cases n = 63	%
Empty uterus	60	95.23
Adnexal mass	61	96.82
Fluid in POD	56	88.88
Fluid in morrison's pouch	40	63.49
Colour Doppler:		
Ring of fire	38	60.31

Table 4. USG Features of Ectopic

USG (Trans vaginal ultrasound) showed adnexal mass in 96.8 % of the cases. Empty uterus in 95.2 % of the cases.

Fallopian tube was the common site of ectopic. Out of 63 cases, in 62 (98.4 %) cases fallopian tube was the site of ectopic. Out of which 80 % occurred in ampullary part of the tube. 12.6 % of the cases were cornual ectopic. In 1 case the site of ectopic is ovary.

Right sided tubal pregnancy was seen in 36 (57.14 %) cases and left tubal involvement in 26 (43.33 %) cases.

Condition of Ectopic Pregnancy	Number of Cases N = 63	%
Ruptured	56	88.88
Unruptured	6	9.52
Tubal abortion	1	1.58
Hemoperitoneum < 500 ml	9	14.28
Hemoperitoneum >500 ml	48	76.19
No hemoperitoneum	6	9.52

Table 5. Intra Operative Findings

Most of the cases were ruptured ectopic at time of admission. All the cases were managed surgically. Most common procedure was partial salpingectomy in 43 cases (68.25 %), total salpingectomy in 7 (11.11 %) cases, salpingo oophorectomy in 3 (4.76 %) cases. In cases with failed tubal sterilization salpingectomy and contra lateral partial salpingectomy was done in 8 (12.69 %) of cases. Hysterectomy was done in 1 case (1.58 %) of cornual pregnancy as the bleeding was uncontrolled. In 1 case of unruptured ectopic pregnancy laparoscopic partial salpingectomy was done as an elective procedure.

All the specimens were sent for histopathological examination. On gross examination unruptured ectopics were seen as irregular sausage like dilatation of the tube with bluish discolouration due to haematosalpinx. Ruptured ectopics were seen as distended tube with ruptured wall with dusky red serosa with fetal parts. Microscopic examination showed chorionic villi in the tubal lumen with extra villous trophoblasts with variable fetal parts. Decidual changes in lamina propria, reactive mesothelial proliferation with papillary formation were seen in some cases. Chronic salpingitis characterized by inflammatory cells in the wall along with distortion of plicae is seen in some cases. In one case of ovarian ectopic showed chorionic villi embedded in ovarian stroma.

Blood transfusion of more than 1 unit was given in 53 (84.12 %) cases either intra operatively or post operatively. 18 cases (28.57 %) were given general anaesthesia, 7 cases (11.11 %) required IRCU admission. There was no mortality in present study.

DISCUSSION

The incidence of ectopic varies from place to place. The incidence of ectopic in the present study is 0.89 %. The incidence is more in the age group of 26 - 30 years which is similar to the study by Kumar A et al and Poonam et al in which peak age incidence was 26-30 years.[7,8] In the present study majority of women were second gravid and multigravida which is similar to the study done by Poonam et al, Shraddha Shetty K and Panchal P. et al.[8,9,10] The incidence in multigravida is more probably due to previous miscarriage and infection causing tubal damage.

Predisposing Factors

The aetiology of ectopic pregnancy cannot be attributed to only one factor. They are usually multifactorial. Among the risk factors PID was present in 23.8 % (15 cases) of the cases. This is similar to the study by rose et al[11] (34.4 %), Yakasai et al[12] (31.68 %), Kedar et al[13] (25 %), Rashmi et al[14] (8.1 %). PID following gonococcal, chlamydial, and other bacterial infection causes increased risk of ectopic pregnancy. In the present study cases with history of PID,4 cases showed hydrosalpinx of contralateral fallopian tube intra operatively which indicates that tubal disease is bilateral in most of the PID cases, in another 5 cases there were dense pelvic adhesions which might be the reason for ectopic pregnancy. Levin et al have shown that, in patients with primary history of PID, there is increased risk of ectopic pregnancy.[15] Brunham et al found strong association between chlamydial infection and tubal pregnancy.[16] Westrom compared women with laparoscopically proven PID with healthy women and found 6 fold increased risk of ectopic.[17] Westrom et al demonstrated laparoscopically that bilateral tubal block was seen in 12.8 % of cases after one episode of PID, 35 % after 2 episodes, 75 % after 3 or more episodes of PID.[18] Prompt and adequate treatment of PID decreases the risk and there by reduces the incidence of ectopic pregnancy.

Previous history of abortion is seen in 28 % (18 cases), out of which 8 cases had uneventful post abortal period, 4 cases had history of fever with chills on post abortal period, 2 cases had foul smell vaginal discharge, 4 cases had incomplete abortion. Post abortal sepsis is mainly due to unsafe abortion practices. This leads to infection of products of conception and there by potential spread to the uterus, tubes, pelvis using tubal damage. Awareness regarding safe abortion practices in public and performing D&C under strict

aseptic conditions may reduce the risk of sepsis, PID, tubal damage. Rose et al.[11] reported previous abortion as a risk factor in 25.8 % cases, Kedar et al[13] (32.69 %). Rashmi et al[14] (18.9 %), Failed tubal sterilization is seen in 12.69 % of cases (8 cases) which is comparable to rose et al[11] (5.4 %), Kedar et al[13] (9.6 %) Rashmi et al[14] (16.21 %). All cases in the present study underwent immediate postpartum sterilization. In postpartum period tubes are friable, oedematous and congested So meticulous techniques are required to prevent incomplete occlusion of tubal lumen. In some cases there is recanalisation or formation of tubo peritoneal fistula through which fertilized ovum cannot pass through, resulting in implantation in the distal tubal segment. So in women of reproductive age group presenting with lower abdominal pain, ectopic pregnancy should be ruled out irrespective of her sterilization status.

In 1 case there is previous history of tuboplasty. So in any patient undergoing tubal reconstructive surgeries should be counselled regarding the risk of ectopic in subsequent pregnancies. In the present study previous H/O ectopic was present in 1.6 % of the cases which is similar to the study done by Rose et al[11] (3.2) Kedar et al[13] (5.7 %) and Rashmi et al[14] in which it constitutes 2.7 %. It reflects the underlying tubal pathology which is bilateral in most of the cases.

History of previous LSCS is seen in 11.1 % of cases (7 cases) which is similar to Rose et al[11] (7.5 %), Rashmi et al[14] (8.1 %), may be due to formation of peritubal adhesions. Among 7 cases in 2 cases had flimsy peri tubal adhesions, in 4 cases dense pelvic adhesions with distorted normal tubo ovarian relationship which might be the reason for ectopic pregnancy. So measures to reduce post-operative adhesions like good haemostasis, minimizing tissue trauma, minimizing tissue ischemia, use of adhesion barriers, appropriate antibiotics to prevent infections should be taken.

History of infertility seen in 3.17 % of cases which is similar to the study by rose et al[11] (15.1 %), Rashmi et al[14] (16.21 %). There is history of ovulation induction in these cases. Endometriotic spots observed on fallopian tube which resulted in dense peri tubal and peri ovarian adhesion restricting the motility of the tube which might be reason for ectopic in these cases. In 17 % of cases, there was no recognizable risk factor which is similar to study done by Rose et al[11] (32.2 %) Rashmi et al[14] (37.83 %). So there should be a high index of suspicion of ectopic in regular practice.

Presenting Symptoms

Among the presenting symptoms pain abdomen was present in 96.8 % of the cases.

Symptoms	Rose et al	Rashmi et al	Kedar et al	Present Study
Pain abdomen	92.4	89.2	86.53	96.82
Bleeding P / V	66.6	43.2	65.38	68.25
Amenorrhoea	78.5	75.7	80.76	73.01
Pallor (Hb < 8 gm %)	70.9	70	-	76.19
Shock	9.7	40.5	51.92	34.92
Abdominal Tenderness	83.9	70.3	71.15	92.06
Guarding	-	-	-	28.57
Distension	49.5	35	51.92	50.79
Cervix Motion tenderness	55.9	75.7	82.69	73.01
Syncopal Attack / giddiness	31.2	-	-	19.04

Table 6. Presenting Symptoms & Signs

In the present study, most of the cases presented with pain abdomen (96.82 %), bleeding P / V (68.25 %). The presenting symptoms are almost similar to the other studies. Findings of local and bimanual examination were also similar to other studies. The incidence of shock is 34.92 %, as majority of patients presented with ruptured ectopic, as our hospital being tertiary care hospital, most of the patients referred from various districts and remote tribal are as where there are no proper medical and transport facilities. Pallor was seen in 76 % cases. Thus a detailed general examination is crucial in identifying the ectopic and condition of the tube.[19]

UPT was positive in 98.4 % cases. Even if UPT is negative (1 % of cases) we should suspect ectopic pregnancy. Reduction or cessation of production of trophoblastic tissue or low mass chorionic villi may lead to undetectable beta HCG levels in these cases. Culdocentesis was positive in 79 % cases. USG revealed ectopic in 93.6 % cases. USG (TVS) showed adnexal mass in 96 % cases. Colour Doppler showed Ring of fire appearance in 60 % cases. Fluid in POD in 88.8 % cases. All these findings were confirmed by TVS. If a patient has fluid in pouch of Douglas, then transabdominal USG should be done to inspect Morrison's pouch. If Morrison's pouch is positive for blood it indicates minimum of 670 ml of blood in the intra peritoneal cavity. Fluid in Morrison's pouch is seen in 63.4 % cases.

Majority of cases were ampullary pregnancy (80.9 %). 12.6 % of cases were cornual and 3.1 % of cases were isthmic. In 1.58 % of cases the site of ectopic is ovary.

Site of Ectopic Pregnancy	Rose et al	Rashmi et al	Kedar et al	Present Study
Ampulla	56.9	69.7	53.84	80.95
Isthmus	39.78	3	11.53	3.17
Fimbriae	-	-	17.30	1.58
Ovary	1.07		1.9	1.58
Cornual	1.07	15.2	7.6	12.69
Rudimentary horn	-	9.1	1.9	
Broad ligament pregnancy	-	3	-	
Heterotopic	1.07	-	-	

Table 7. Site of Ectopic

A majority of cases were ampullary (80.9 % of cases) which is similar to the study by Rashmi et al[14], Kedar et al.[13] A majority of cases were ruptured ectopic which is similar to the study by Rashmi et al[12] (78.3 %). Kedar et al[11] (86.6 %). Hemoperitoneum is seen in 90 % of cases which is similar to the study by Rashmi et al[14] (86.4 %) Kedar et al[13] (84.5 %). In the present study, as most of the cases were ruptured ectopic they were taken for laparotomy.

Only in one case of unruptured ectopic, laparoscopic partial salpingectomy was done as an elective procedure. In 68.2 % cases partial salpingectomy was done. In 11.1 % cases total salpingectomy was done. Salpingectomy and contralateral partial salpingectomy was done in 12.69 % of cases as they had failed tubal sterilization. Hysterectomy was done in one cornual pregnancy, as the bleeding was uncontrolled. In most of the cases treatment is salpingectomy which adversely effects the future fertility. Ectopics may recur due to persistence of underlying risk factors. So these cases should be closely monitored especially by TVS in future conceptions.

84 % of the cases had blood transfusion more than 1 unit.

In nearly 28.57 % of cases, General Anaesthesia was given in patients with shock and those who were not fit for spinal anaesthesia.

IRCU admission was required in 11.1 % of cases for their haemodynamic unstable condition, and later on they recovered.

There was no mortality in our study. This shows that early diagnosis, timely and prompt management of ectopic pregnancy, availability of adequate blood and blood components improved the outcome.

CONCLUSIONS

Ectopic pregnancy is one of the obstetric emergencies with significant morbidity and mortality. It has adverse effect on future fertility by causing mutilation of essential organs of reproduction like fallopian tube, ovary and sometimes the uterus also. PID and abortions which are encountered in routine gynaecological practice, are important risk factors for ectopic pregnancy. As many patients may not have recognizable risk factors, a high index of suspicion is crucial for early diagnosis. USG in particularly TVS and trained personnel should be made available even at a primary health care level where antenatal health services are available. This facilitates early diagnosis of first trimester's complications like ectopic pregnancies there by reducing morbidity and mortality. Screening of high risk cases, early diagnosis and early intervention has good outcome in ectopic pregnancy.

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