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Study on Risk Factors, Clinical Presentation & Operative Management of Ectopic Pregnancy

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Abstract:

Introduction: *Ectopic pregnancy is a major clinical problem in gynaecology because it is often difficult to diagnose as the patient present in different ways. An accurate history taking and physical examination is considered to be most important in the diagnosis of ectopic pregnancy. There are two treatment options, medical or surgical. Surgical treatment is the fastest treatment for ectopic pregnancy though surgical management decreased from approximately 90% to 65%[1]. Surgery may be the only treatment option if there is internal bleeding. In the medical treatment group, 15% of cases were categorized as failures and required surgery[1].*

Objectives: *This study was conducted in the department of obst and Gynae of Dhaka Medical College Hospital from January 2005 to June 2005 in an attempt to find out the risk factors of ectopic pregnancy, the way of presentation and to analyze the operative treatment of ectopic pregnancy.*

Materials and Methods: A total 50 consecutive patients who were clinically suspicious of ectopic pregnancy were included in this study *between January 2005 to June 2005. Patients who were clinically suspicious of EP and also supported by positive urinary pregnancy tests, beta hCG and no intrauterine gestational sac in ultrasonography were included in this study. Detailed discussion about the study was done with the patient and then informed verbal consent was taken from them. Detailed history about patient profile, presenting symptoms, any risk factors and clinical examination done and the findings were recorded in the predesigned data collection sheet. Data was expressed in terms of frequencies and percentages*

Results: Most of the patients were in the age group of 20-30 years and 38% of low parity (para-1).Previous miscarriage, infertility,IUCD users and PID identified as the risk factors of ectopic pregnancy— 42% patients had history of previous abortion or MR, period of infertility 22%, pelvic infection 12%, IUCD users 16%. In this study acute abdominal pain after a short period of amenorrhoea was found to be the main symptoms in ectopic pregnancy—100% patients were presented with lower abdominal pain, 70% with period of amenorrhea and 50% patients with per vaginal bleeding. All the patients were presented with acute condition and were surgically managed *fastest treatment*. At the time of operation 84% of ectopic tubal pregnancy were found ruptured, 10% were tubal abortion and 4% unruptured. Sites of ectopic pregnancy were ampullary 50%, isthmic 20%, fimbrial 10%.

Conclusion: *Most of the patient presented in acute condition with the classical features of ruptured ectopic pregnancy. Near half of the patient were in younger age group (26 – 30 years) having risk factors like history of previous abortion/MR 42%, infertility 22% use of IUCD 16%, PID 12%. More then three forth(84%) of cases were diagnosed as ruptured ectopic during operation. Operative management was done on the basis of site of ectopic and parity of the woman*

Key words: *Ectopic pregnancy, risk factors, clinical presentation, salpingectomy.*

Introduction:

An ectopic pregnancy (EP) in one in which the fertilized ovum become implanted in a site other than the normal uterine cavity[2]. More than 95% extra uterine pregnancy occur in fallopian tube[3]. Extra tubal sites can be the uterus itself (cervical or in a rudimentary horn of uterus), the ovary, a great rarity the broad ligament or elsewhere in the peritoneal cavity. Ectopic

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pregnancy may be bilateral and may be concurrent with an intrauterine pregnancy (Heterotrophic), but these circumstances are rare[4]. Ectopic pregnancy may occur any time from menarche to menopause. Incidence is maximum between the ages of 20-30 years[5]. The incidence of ectopic pregnancy is three times higher in women aged 35-44 years in comparison to those in the age group 15-24 years[6]. History of multiple lifetime sexual partner, induced abortions, pelvic inflammatory disease, smoking, H/O infertility, Use of IUCD, pelvic surgery significantly increase the risk of EP[7]. Induced abortion and STD increase the risk 14 fold and 9 fold respectively. Previous use of IUCD increase the risk almost 4 fold, whereas the use of condoms is protective[7]. Erkkola and liukko suggested that PID is 5 times more common among IUCD users that in other women and this may increase the risk of EP. Incorporation of progesterone in the IUCD seems to increase the incidence of tubal pregnancy over than seen with the unmedicated devices[8]. Women who are subfertile are also at increased risk for an ectopic pregnancy because altered tubal integrity (or function) contributes to both condition[9]. However, half of all women who receive a diagnosis of an ectopic pregnancy do not have any known risk factors[10]. Ectopic pregnancy is a major clinical problem in gynaecology because it is often difficult to diagnose as the patient present in different ways .

An accurate history taking and physical examination is considered to be most important in the diagnosis of ectopic pregnancy. Suspicion of ectopic pregnancy is based on the presence of one or more of the following factors- acute pelvic pain, vaginal bleeding or any risk factors for ectopic pregnancy occurring in pregnant women[11]. The advent of USG especially transvaginal ultrasonography(TVS), Serum progesterone, BhCG, direct vision by laparoscopy are important investigations for early diagnosis of ectopic pregnancy. In experienced hands, TVS will detect 75-80% of clinically significant tubal ectopic at the initial examination[6]. TVS, BhCG monitoring are the standards for evaluation of suspected ectopic pregnancy[3]. Over the past decade the management of ectopic pregnancy has evolved from radical operative approach (salpingectomy) to a more conservative surgical or medical treatment[3].

With improvement in diagnostic means the vast majority of ectopic pregnancy are unruptured and this has stimulated trends towards nonsurgical methods of treatment, such as systemic administration of MTX (Methotrexate) or RU 486 (Mifepristone) or local injection of MTX, Potassium Chloride (KCI) or prostaglandin. Under laparoscopic or ultrasonographic guidance most of these conservative nonsurgical measures proved efficient in 80-90% of appropriately selected case[4]. However, surgical management is still indicated in some patients. Immediate laparotomy and clamping of the bleeding vessels may be the only means of saving the life of a moribund patient. Observational studies suggest that rates of tubal patency (60-90%) and recurrence of ectopic pregnancy (8-15%) are similar after medical and surgical treatment[12].

Methodology:

This observational prospective study was conducted in DMCH between January 2005 to June 2005. Patients who were clinically suspicious of EP and also supported by positive urinary pregnancy tests, beta hCG and ultrasonography reveals no intrauterine gestational sac were included in this study. Patients who were clinically suspicious but laparotomy findings rulled out ectopic pregnancy were excluded from the study. Detailed discussion about the study was done with the patient and then informed verbal consent was taken from them. Detailed history about patient profile, presenting symptoms, any risk factors and clinical examination done and the findings were recorded in the predesigned data collection sheet. Data was expressed in terms of frequencies and percentages.

Results:

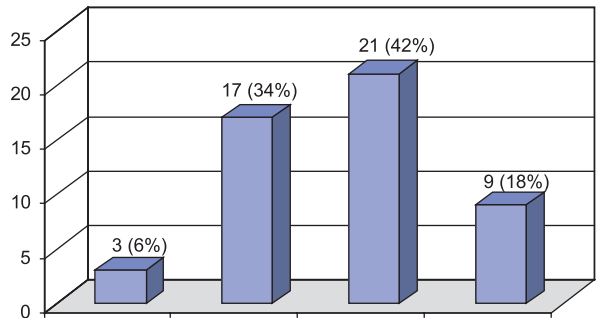

Fig.-1: *Age Range in Patients with Ectopic Gestation*

Fig 1 shows that 50 cases of ectopic gestations were studied, where majority 21 (42%) of the cases were in age group (26-30) years. Less number 3 (6%) were in age below 20 years.

Table-I

Predisposing factors

	No. of cases	Percent
H/O previous abortion / MR	21	42
Period of infertility	11	22
IUCD use	8	16
Pelvic infection	6	12
H/O Appendicitis	4	8
H/O lower abdominal surgery	2	4
H/O ectopic pregnancy	1	2
Tuberculosis	1	2

Table I shows that the most of the patients 21 (42%) had previous history of abortion / MR, period of infertility 11 (22%), pelvic infection 6(12%), appendicitis 4 (8%), history of ectopic pregnancy 1 (2%), tuberculosis 1 (2%), history of abdominal surgery 2 (4%), IUCD 8 (16%).

Table-II

Presenting symptoms of ectopic pregnancy

Sl No.	Symptoms	No. of cases	Percent
1	Abdominal pain	50	100
2	Period of amenorrhoea	35	70
3	P/V bleeding	25	50
4	Early pregnancy symptom	24	48
5	Syncopal attack	17	34
6	Shock	30	60

Table II shows that all the cases had 50 (100%) abdominal pain, 35 (70%) patient had a period of amenorrhoea, 24 (48%) had early pregnancy symptoms, P/V bleeding in 25 (50%), syncopal attack and shock in 17 (34%) and 30 (60%) cases respectively.

Table-III

Signs of ectopic gestation

SIGNS	No. of cases	Percent
Abdominal tenderness	50	100
Muscle guard	30	60
Rebound tenderness	3	6
Pain on movement of cervix	45	90
Uterine enlargement	25	50

Table III shows that 50 that is 100% of the cases had abdominal tenderness , muscle guard in 60% cases, 45 (90%) of the patients had pain on movement of cervix and 25 (50%) of the patient had uterine enlargement.

Table-IV

Diagnostic aid for diagnosis of ectopic pregnancy

	No. of cases diagnosed	No. of cases diagnosed by other methods	Total
History and physical examination.	46 (92%)	4 (8%)	50
Ultrasonography	38 (76%)	12 (24%)	50
Laparotomy	4 (8%)	46 (92%)	50

Table IV shows that 46 (92%) of cases were diagnosed by history, physical examination. 38 (76%) cases diagnosed by USG, 4 (8%) diagnosed by laparotomy.

Table-V

Operative finding

V.a) Site of Ectopic gestation

Site	No. of case	Percent
Isthmus	10	20
Ampulla	25	50
Interstial part	4	8
Fimbrial	5	10
Abdominal	1	2
Rudimentary horn of bicornuate uterus	3	6
Ovarian	2	4

Table Va. shows that there were 25 (50%) ectopic pregnancy in ampulla of fallopian tube, 10 (20%) in isthmus, 5 (10%) in fimbrial end of the tube. Three (6%), 2 (4%) were found in rudimentary horn of bicornuate uterus and ovary respectively. Only one case was found as abdominal pregnancy.

V. b) Tube affected

Side	No. of cases	Percent
Right	27	54
Left	17	34

Right sided tube was affected more commonly 54% case.

V. c) Tubal status at operation

Status	No. of case	Percent
Ruptured	42	84
unruptured	5	10
Tubal abortion	5	10
Abdominal	1	2

Table Vc. shows that 42 (84%) women had ruptured fallopian tube, unruptured tube was observed in 5 (10%) case. 10% cases were tubal abortion. There was 1 (2%) case which was abdominal term pregnancy with dead baby, which was more likely to be secondary ectopic tubal pregnancy.

Table-VI

Types of operation done

Sl. No.	Types of operation	No. of case	Percent
1	Unilateral salpingectomy	29	58
2	Salpingectomy with contralateral tubal ligation	12	24
3	Salpino-oophorectomy	3	6
4	salpingotomy	3	6
5	Resection of rudimentary horn	3	6

Table VI shows different modalities of operation done. Unilateral salpingectomy was done is 29 (58%) cases, salpingectomy with contralateral tubectomy in 12 (24%) cases, salpingo-oophorectomy 3 (6%) cases, salpingotomy 3 (6%) cases. Resection of rudimentary horn of bicornuate uterus was done 3 (6%) cases. Salpingo-oophorectomy were done in two ruptured ovarian pregnancy and one in ruptured fimbrial pregnancy where the ovary was densly adherent to fallopian tube, which could not be separated, probably due to PID.

Discussion:

The incidence of ectopic pregnancy varies from place to place even in the same country. The incidence varies greatly through out the world, ranging from 1 in 28 to 1 in 300[6]. Ectopic pregnancy may occur at any age from menarche to menopause. In present study 42% of the patient were in age group 26-30 years. The youngest age group patient was <20 years, constitutes 3% of the case. Fernandez et al found that 65% patient range from 25-35 years, 6% were adolescents[13]. A local study by Fahmida found that 38% of the patients were in age group 26-30 years[14]. This study revealed higher incidence (38%) of ectopic pregnancy in patient with para 1. A study by Shamima et al observed that 38% patients had para 1-3 and 30% with para 0. Breen found that 23.8% of patient had para 3 and 10.9% with para 0. General symptoms as presented by the patient included the classical triad of pain, amenorrhoea and vaginal bleeding. In this study 100% patient presented with abdominal pain, 70% with period of amenorrhoea and 50% with P/V bleeding. A study of Tancer also showed that 90% of patient had abdominal pain and 63.8% abnormal vaginal bleeding[15] . Shamima et al observed 95% patients present with abdominal pain, 65% period of amenorrhoea and only 7% cases with irregular P/V bleeding[16].

Infertility or subfertility is a risk factor for ectopic pregnancy. In present study history of infertility was present in 22% cases. Similar findings (28%) was found by Shamima et a1[16]. History of previous induced abortion increase the risk of ectopic pregnancy 14 fold[7]. In current study 42% cases had previous history of menstrual regulation (MR) or abortion. The study by Fahmida observed 48% patients had previous history of MR or abortion which is almost similar to that of this study[14]. Use of IUCD can place a women at an increased risk of EP. In this study16% were IUCD users. Fahmida observed that 34% patients were IUCD users[14]. Veldhuis HM et al observed the incidence of ectopic pregnancy in IUCD users was 6 to 11% per year[17]. Coste J et al observed the rate of contraceptive failure ectopic pregnancy mostly IUCD failure had decreased by 29%[18,19]. The gross disparity is due to 38% of this study population did not use any contraceptive method. 4% had history of failure of emergency contraceptive pill. The incidence of pelvic inflammatory disease (PID) has increased among the young women. In present study 12% patient had pelvic infection. Pelvic inflammatory disease, particularly due to chlamydial infection—there is a sevenfold increase in the incidence of ectopic pregnancy in women with laparoscopically proven salpingitis[20]. Fahmida observed 48% patients had PID. The difference is due to many women having PID are asymptomatic so the actual number of patient suffering from PID is difficult to obtain.

The mode of presentation of ectopic pregnancy may be acute, chronic or subacute. Acute presentation is usually associated with tubal rupture and massive

intraperintoneal haemorrhage leading to acute abdominal pain and cardiovascular collapse. In this study 60% patients presented with collapse. Shamima et al observed 22% patient present with collapse and Fahmida found 94% cases of collapse[14,16] . The disparity reflect the amount of blood loss. Patients collapse due to hypovoluaemia and it depends upon amount of blood loss and previous haemoglobin status of the patient20

. Abdominal tenderness was observed in 100% cases in this study. Tancer et al and Fahmida found the above stated sign in 90.8% and 100% cases respectively in their series[14,15]. Toumivaara et al reported pain on movement of the cervix in 51% cases and abnormal uterine bleeding in 76% of their patients[21]. In this study movement of the cervix produced pain in 90% of cases and abnormal uterine bleeding in 50% cases. Similar result found by Fahmida, cervical excitation test positive in 90% cases and abnormal uterine bleeding in 60% cases[14]. Ultrasound examination of pelvic organs is widely used to evaluate clinically stable patient suspected of having ectopic pregnancy[22]. In this study 76% patients were diagnosed by ultrasonogram. Fahmida had 92% ultrasonographically diagnosed cases. The disparity is due to most of the patient in this study were presented with acute and subacute condition and immediate laparatomy was done without waiting for ultrasonography. At the time of operation 84% of ectopic were found ruptured, 4% unruptured and 10% were aborted, there was I case of abdominal pregnancy. In the study by Fahmida there was 74% ruptured, 4% unruptured and 20% aborted. Ruptured ectopic pregnancies were observed 59.1% of cases by Beak amd 44% by Muller[23,24]. Right sided fallopian tube was affected nore commonly (54%) than the left. Fahmida found 79% right sided tubal pregnancy[14]. Sites of ectopic pregnancy were ampullary 50%, isthmic 20%, fimbrial 10%, 8% interstitial, 6% rudimentary horn of bicornuate uterus, 2% abdominal. A 10 years study by J. Bouyer et al found that 70% ampullary, 12% isthmic, 11% fimbrial, 2% interstitial, 3% ovarian and 1% abdominal[25]. Shamima et al found ampullary 64%, isthmic 19%, fimbrial 12%, 3% cornual and 2% in rudimentary horn of bicornuate uterus[16].

Regarding operative management salpingectomy was more commonly performed as because the patients came to hospital at a later stage with shock.Unilateral salpingectomy was done in 58% of the cases in this study, Salpingectomy with contralateral tubectomy in 24% cases, salpingo-oophorectomy and salpingotomy 6% in each cases, resection of rudimentary horn of bicornuate uterus in 6% cases. Type of operation varied in different studies conducted by different workers. Fahmida observed salpingectomy in 52% cases, salpingectomy with contralateral tubectomy in 46% cases[14]. Whatever may be the presentations, our ultimate goal was is to reach an early and correct diagnosis and appropriate and proper management, thereby saving the patients life as well as preserving her future fertility.

Conclusion:

Most of the patient presented in acute condition with the classical features of ruptured ectopic pregnancy. Near half of the patient were in younger age group (26 – 30 years) having risk factors like history of previous abortion/MR 42%, infertility 22% use of IUCD 16%, PID 12%. More then three forth(84%) of cases were diagnosed as ruptured ectopic during operation. Operative management was done on the basis of site of ectopic and parity of the woman.

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