ORIGINAL ARTICLE

ECTOPIC PREGNANCY MANAGEMENT IN AYUB TEACHING HOSPITAL ABBOTTABAD: A TEN YEAR SURVEY

Farhat Deeba, Bushra Khan, Samina Naseem Khattak
Department of Obstetrics and Gynaecology, Women Medical College, Abbottabad, Pakistan

Background: Ectopic pregnancy is a common life-threatening emergency in the developing world. It is a cause of maternal morbidity and mortality in the first trimester and these mortalities can be reduced if it is properly managed. The objective of this study was to assess the variable clinical presentations and outcome of treatment of ectopic pregnancy in Ayub Teaching Hospital Abbottabad. **Methods:** Two hundred and fifty-five patients with ectopic pregnancy managed in Ayub Teaching Hospital over period of 10 years, were included in the study. The clinical presentation, diagnostic modalities and out come of treatment were recorded and analysed. **Results:** Out of 255 patients 43 (16.86%) had un-ruptured tubal pregnancy, 183 (71.76%) had ruptured ectopic pregnancy and 22 (8.62%) had chronic ectopic pregnancy. At laparotomy, salpingectomy was done in 229 (89.80%) patients, salpingo-ophrectomy in 2 patients (0.78%), linear salpingostomy in 15 (5.88%) patients. Medical treatment was given to 5 patients and 8 patients were treated conservatively. There was no maternal mortality. **Conclusion:** In spite of various recent advances in the management of ectopic pregnancy, conventional surgical treatment by laparotomy is still the most widely used modality of treatment in our institution. With appropriate and prompt management, maternal mortality due to ectopic pregnancy can be prevented.
Keywords: Ectopic pregnancy, conventional surgical management, laparotomy, salpingectomy

INTRODUCTION

The term ectopic pregnancy is derived from the Greek word 'Ekpos' meaning out of place and it refers to implantation of a fertilised egg in a location outside of the uterine cavity. Ectopic pregnancy is a common life-threatening emergency in the developing world and its frequency is still high. The incidence of ectopic pregnancy has increased during the last years all over the world.[1–3] Aetiology includes tubal damage from different reasons like inflammation, infections and surgical interventions.

Risk factors include previous tubal surgery, previous ectopic pregnancy, previous genital infections, assisted reproductive technology, smoking (the risk is increased by number of cigarettes), age (over 40 years), intrauterine device (IUD), Oral Contraceptives(OC) only with progestin, multi-parity, previous abortion (spontaneous or inducted), Diethylstilbestrol (DES) exposure in utero.[4–6]

Clinical manifestation depends upon the localization of ectopic pregnancy. Fallopian tube, accounting for 97% of ectopic implantation, is the most common area of implantation.

Approximately, 80% of all ectopic pregnancies are localized in tubal ampula, 12% in isthmic part, 5% in fimbria and 2% in interstitial part (cornual pregnancy). Other localisations are not common; approximately 1% and most common are ovarian, cervical and abdominal .The clinical manifestations of ectopic pregnancy complicates the diagnosis because of their broad spectrum that run from being asymptomatic to acute abdomen and hemodynamic shock. Combination of β-hCG levels and trans-vaginal ultrasound has a sensitivity of 97% and specificity of 95% sparing the use of other invasive tests like D&C.[2] The classic clinical triade is: abdominal pain, amenorrhea and vaginal bleeding. 66%increase level of β-hCG within 48 hours (confidence level 85%) is the lower limit for normal vital intrauterine pregnancy.[7]

Normally, the serial progesterone level in ectopic pregnancy is lower as compare to normal intrauterine pregnancy. Ultrasound examination represents complex adnexial mass or a solid mass in ectopic pregnancy, but this could be a corpus luteum, endometrioma, hydrosalpinx, ovarian neoplasia (e.g., dermoid cyst), or a pedunculated myoma. Free fluid in Douglas is another sign of ectopic pregnancy, but is not significant of ruptured ectopic. Presence of intra-abdominal free fluid shows more often for ruptured ectopic. The exact ultrasound comments are in correlation with β-hCG levels (discriminatory zone). All viable intrauterine pregnancies can be visualised by trans-abdominal ultrasonography for serum hCG levels higher than 6,500 IU/L. The discriminatory zone for transvaginal ultrasound are reported in levels between 1.000 and 2.000 lU/L. Missing of intrauterine gestational sac 38 days or more after the last menstrual period or 24 days after conception is the evidence of ectopic pregnancy.[8]

The treatment of ectopic pregnancy includes medical or surgical methods. Both are effective, but the choice depends on clinical situation, localisation of ectopic pregnancy and diagnostic tools.[1] The objective of this study was to assess the variable clinical presentations and outcome of treatment of ectopic pregnancy in Ayub Teaching Hospital Abbottabad.

MATERIAL AND METHODS

Over a period of 10 years, a descriptive study was conducted in the Obs/Gyn OPD and Emergency

Departments of Ayub Teaching Hospital (ATH), Abbottabad. Cases of ectopic pregnancy diagnosed on the basis of history, examination and specific investigations, were treated by different treatment modalities. Informed consent was obtained and data were recorded on the proforma. Patients presenting with haemodynamic shock, having β-hCG levels more than 6,000 IU/l or those suspected to have ruptured tubal pregnancies were treated with immediate laparotomy. Diagnostic laparoscopy was not considered in any case.

Criteria for conservative management were β-hCG level 1,000–2,000 IU/l and falling, pregnancy diameter <2 Cm, no evidence of rupture and minimally symptomatic patients.

Women who were symptomatic with β-hCG 3,000 IU/l, pregnancy diameter <4 Cm, nonviable pregnancy and no signs of rupture were treated with methotrexate (MTX) injection. Single Intramuscular injection of methotrexate (1 mg/Kg body weight) was given to the eligible patients. Possible signs of methotrexate toxicity like gastritis, dermatitis, pleuritis and leucopoenia were noted carefully. Moreover the failure of medical therapy could results in surgery, which might be elective or emergency. Folic acid was avoided during treatment phase. Success of a mode of treatment meant complete resolution associated with that mode, i.e., return of β-hCG level to 10 IU/l without any need for further intervention.

RESULTS

A total of 255 cases of ectopic pregnancies were recorded during the study period. Total number of deliveries during the same period were 2,5010, thus giving us a frequency of 1.0196%. Mean age of patients was 33±3.824 (21–45) years.

One-hundred and forty (54.9%) patients were multigravida, while nulliparous were 63 (24.7%) and grand multiparous were 52 (20%). The chief presenting complaints were amenorrhoea and abdominal pain along with vaginal bleeding, dizziness, fainting attack, shoulder tip pain, abdominal tenderness, adnexal tenderness. Tubal gestation was the commonest type occurring on the right side. Ovarian, cornual, chronic ectopic and heterotopic ectopic pregnancies were also seen in the fewer patients.

Two-hundred twenty-nine (89.8%) patients had salpingectomy, while the remaining had various forms of treatment ranging from linear salpingostomy to milking out. Medical treatment was given in only five patients and eight were treated conservatively.

Table-1: Age of patients

Age	Number	Percentage
21–25	121	47.5
26–30	105	41
31–35	22	8.6
36–40	5	1.96
41–45	2	0.8

Table-2: Parity of patients

Parity	Number	Percentage
Multi-gravida	140	54.9
Nulliparous	63	24.7
Grand-multiparous	52	20.0

Table-3: Signs and symptoms of ectopic pregnancy

Sign/Symptom	Number	Percentage
Amenorrhoea	253	99.2
Abdominal pain	250	98
Vaginal Bleeding	205	80.4
Dizziness	50	19.6
Fainting Attacks	130	51
Shoulder Tip Pain	40	15.68
Abdominal tenderness	190	74.5
Adnexal tenderness	220	86

Table-4: Sites of ectopic pregnancy (n=255)

Sites	Number	Percentage
Ruptured tubal Ectopic	183	71.76
Ovarian	2	0.78
Cornual ectopic	3	1.1
Unruptured	43	16.86
Chronic ectopic	22	8.6
Heterotopic	2	0.78

Table-5: Types of treatment

Treatment	Number	Percentage
Salpingectomy	229	89.8
Linear salpingostomy	11	4.3
Salpingo-ophrectomy	2	0.78
Medical Treatment	5	1.96
Conservative treatment	8	3.1

DISCUSSION

Ectopic pregnancy is one of the most critical and life threatening emergencies in gynaecological practice. In many parts of the world, there has been a dramatic increase in the incidence over the recent decade. The frequency of ectopic pregnancy in this series was 1.02%. This is comparable to a study conducted by Khaleque[9] and Shoaib[10] in which frequencies were 1.1 and 1% respectively.

The main modalities of treatment employed are expectant, medical and surgical. Ectopic pregnancy can be treated surgically or non-surgically depending if it is ruptured or not and the equipments available at the centre. Due to advances in the diagnostic techniques, it has become possible to identify and manage ectopic pregnancy before they cause clinical symptoms in many developed countries.[11] This is not so in most developing countries. Subsequent fertility is substantially improved when conservative surgery is utilised instead of salpingectomy. Subsequent intrauterine pregnancy rates have been found to be 76% when conservative surgery is performed and 44% when salpingectomy is performed.[12] The management of ectopic pregnancy has been improved upon by the use of ultrasound, laparoscopy, and monitoring of the β-hCG.[13] Early diagnosis before tubal rupture is important in reducing mortality as well as preserving the potential for future fertility through conservative management.[14] Surgical treatment of ectopic pregnancy can be by laparotomy or minimally

invasive surgery that is laparoscopy. Laparatomy involves salpingectomy or dissecting the ectopic pregnancy with conservation of the fallopian known as salpingostomy. Laparotomy is reserved for patients with extensive intraperitoneal bleeding, intravascular collapse, or poor visualisation of the pelvis at the time of laparoscopy. The decision to perform a salpingostomy or salpingectomy is often made intraoperatively based on the extent of damage to the affected and contra-lateral tubes but it is also dependent on the patient's history of previous ectopic pregnancy and wish for future fertility, availability of assisted reproductive technology and the skill of the surgeon.[15] In the study conducted by Shrestha[16], laparoscopy was mostly performed for the un-ruptured and tubal abortion, while laparotomy was performed for ruptured ectopic. In our study mostly salpingectomy was the optimal procedure because most of our patients came late with rupture ectopic. This could have been avoided had the cases been diagnosed in time to be managed before rupture of the tube.

Ectopic pregnancy is a cause of maternal morbidity and mortality and these mortalities can be reduced if the emergency surgical facilities and blood transfusion services are available. Majority of the cases in this study had laparotomy as compared to another study[17] laparotomy remains the most common surgical intervention method. This is due in part to non-availability of operating laparoscopes, which have been shown to be very useful. Moreover, significant haemo-peritoneum from ruptured tubal pregnancy makes laparoscopic surgery less feasible.

There has been a significant rise in the incidence of ectopic pregnancy from 3–4 per 1,000 reported earlier to almost 16 per 1,000 pregnancies.[18] This could be because of better diagnostic modalities currently available. Serum β–hCG measurements and transvaginal ultrasonography have been found to be the best techniques in the diagnosis of ectopic pregnancy and in the prediction of the status of the ectopic pregnancy.[19]

Recently, there has been a major shift in the management of ectopic pregnancy from radical towards conservative treatment, be it surgical or medical. In fact, laparoscopic treatment of ectopic pregnancy reported for the first time was conservative.[20] It was later on that Dubuisson[21] proposed salpingectomy via laparoscopy. It was still later that medical treatment for ectopic pregnancy proved that conservative treatment was possible without surgery.[22] Conservative laparoscopic treatment of ectopic pregnancy is considered to be the gold standard treatment by many. But conservative medical treatment and laparoscopic treatment have their own limitations and drawbacks, and are neither feasible nor very popular in patients from remote areas belonging to lower socio-economic status. The main concerns are the operability, risk of failure, desire for pregnancy, and the risk of a recurrence of ectopic pregnancy.[20] Laparoscopic and conservative treatment cannot be carried out in cases of severe haemorrhage with shock, large haematoceles difficult to evacuate, presence of dense adhesions, gross obesity, and cornual pregnancy.[23] Our patients did not fulfil the criteria of laparoscopic or conservative medical management.

Out of 255 patients in our study, majority belonged to age group 21–30 years with a mean age of 28.9%, and ectopic pregnancy was often observed in multigravida 54.9%. This is quite similar to the study conducted by Sy in 2009.[24]

The most widely used medical treatment at present is intramuscular methotrexate given as a single dose calculated from patient body surface area (50 mg/m^2). For most women this will be between 75 mg and 90 mg. Serum hCG levels are checked on days four and seven and a further dose is given if hCG levels have failed to fall by >15% between day four and day seven.[25–27] Large uncontrolled studies have reported that about 14% of women will require more than one dose of methotrexate and less than 10% of women treated with this regimen will require surgical intervention.[28,29] This has also been reported in randomised trials comparing methotrexate with laparoscopic surgery.[26,27]

CONCLUSION

In spite of various recent advances in the management of ectopic pregnancy, conventional surgical treatment by laparotomy is still most widely used modality of treatment in our institution. With appropriate and prompt management, maternal mortality due to ectopic pregnancy can be prevented.

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Address for Correspondence:

Dr. Farhat Deeba, Department of Obstetric and Gynaecology, Women Medical College, Abbottabad, Pakistan.
Cell: +92-333-5068828
Email: Shahid_emu@yahoo.com