

Ectopic Pregnancy In Previously Infertile Women Subsequent Pregnancy Outcome After Laparoscopic Management

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Abstract: Ectopic tubal pregnancy (ETP) is a major event in a woman's reproductive life particularly if it happens after treatment of infertility. It complicates infertility treatment and must be recognized early to simplify the treatment strategy, which must always be directed towards optimizing subsequent fertility. All the treatment trials and the Cochrane database meta-analysis show that medical treatment with methotrexate, preferably multi-dose, is equivalent in efficacy to conservative treatment with laparoscopy in the populations studied. The prolonged follow up and repeated estimation of costly beta subunit of human chorionic gonadotropin (hCG) hormone required in medical treatment become inconvenient for patients in this country. Hence people here prefer onetime surgical treatment with short stay in hospital. Occurring during infertility treatment, it marks a reproductive failure, which always results in psychological setback. Amongst 1119 patients conceived after treatment of infertilities in a five year period between '02 & '07 sixty-eight ETP were detected. More than 50% of them resulted in intrauterine pregnancy (IUP) spontaneously or after ovulation induction within a period of one to one & half year following the occurrence of ETP. Regardless of the treatment strategy, a successful outcome requires a subsequent ongoing IUP, the ultimate goal of fertility treatment. Nonetheless ETP resulting from fertility treatment is a specific entity, and better knowledge of it should help to improve diagnosis and prognosis, simplify treatment, and optimize subsequent pregnancy outcome.

Key words: Infertility treatment, Ectopic pregnancy Laparoscopy : Pregnancy outcome.

Introduction

There is an overall increase in incidence of ectopic tubal pregnancy (ETP). This is probably due to increased awareness, advanced diagnostic tools like Transvaginal Ultrasonography (TVUSG) and estimation of beta subunit of human chorionic gonadotrophin (β -hCG) in serum. Increased incidences of tubal pathology due to more occurrence of silent or manifested pelvic inflammatory disease (PID) secondary to increased sexual freedom are the contributing factors to it. As there is early detection of tubal ectopic pregnancy there is probability of more interference as it might so happen in the past that most of these cases subsided or resolved spontaneously due to spontaneous tubal abortions. Surgical management is still the cornerstone of management of ETP, which at one time was only by laparotomy followed by salpingectomy or salpingo-oophorectomy but now with the advancement of different technology and medications there are scopes of medical as well as minimally invasive surgical management. Medical management has also proved to be useful for early ETPs as well [1]. Use of methotrexate (MTX) either perenterally or by local injection to ectopic gestational sac under ultrasonography guidance has emerged as another unique mode of treatment, which requires extreme skill. As

medical management needs extremely close follow up & hospitalization, surgical management is still the method of choice in our country. In recent years laparotomy has been replaced by laparoscopic surgery which is more conservative, minimally invasive & less time consuming leading to quick recovery. The success of laparoscopic management depends on efficacy of early diagnosis of ectopic pregnancy which is met by USG & hormone assay which are extremely helpful particularly following infertility treatment where conservative approach for preservation of uterine appendices is extremely important. As these patients were undergoing treatment for infertility any pregnancy loss caused tremendous stress on the infertile couples and to the fertility physicians. The main question that is invariably asked is regarding further pregnancy outcome. In the present study the pregnancy outcome of the infertile women who had surgical management of ETP is followed up.

Material and Methods

Among 1119 pregnant women who conceived after treatment of infertility in previous 5years (between Sep'02 to Aug'07) 68 cases of Ectopic pregnancies were detected. The age group of these primarily infertile patients was between 25 and 35 years. Five hundred (500) pregnancies occurred below thirty years of age while 619 pregnancies were above the age of thirty. ETP was found in 28 cases in former group and 40 cases belonged to later age group.

In this study as soon as period was overdue the patients were asked to do home urinary pregnancy tests within 5 days following expected date of period. If they were negative a repeat pregnancy test after 7days was sought for. In case of any doubt β -hCG in serum was estimated. This was not done as a routine as it was costly test.

As soon as pregnancy was detected luteal support was instituted and pelvic sonography was performed by 5–6 weeks gestation primarily to confirm intrauterine pregnancy (IUP). If β -hCG was estimated in doubtful cases pelvic sonography was also arranged. TVS was route of choice particularly in doubtful cases. With any suspicion of ectopic pregnancy with or without adnexal mass along with empty uterine cavity repeat β -hCG was estimated in 48hrs. Pelvic sonography became a corner stone for diagnosis of IUP/ETP as well as health of pregnancy. On visualisation of regular gestation sac (GS) with good decidual reaction, containing a moving fetal pole showing fetal heart activity, a healthy IUP was confirmed. In this situation β -hCG estimation or its value became irrelevant. Empty GS having poor decidual reaction raised suspicion of ETP or early pregnancy loss (EPL). Pseudo GS is an associated finding of former. Positive pregnancy test with empty uterus raised strong suspicion of ETP. In such cases repeated serum β -hCG estimation was carried out if USG failed to detect any adnexal mass. Presence of adnexal mass with or without free fluid in the Pouch of Douglas (POD) with pelvic pain & tenderness & sometimes with minimal vaginal bleeding required immediate attention where biochemical pregnancy tests were positive. Haemoglobin, Blood group and Rh factor should be tested with other routine pre operative investigations. Laparoscopy was performed in cases with suspicion of Ectopic pregnancy. Where strong indirect

evidences were present Laparoscopy was performed without wasting time in investigating. Cases with florid presentation like haemorrhagic shock in a biochemically detected pregnancy urgent laparotomy was the practice of choice. Patients were prepared as per routine laparoscopic surgical procedure. On many occasions patients were taken to operating theater before much preparations where situation demanded. Patients were put under general anaesthesia followed by lithotomy position and after antiseptic dressing and draping pneumoperitoneum was made using verres needle. In 2 cases Hasans's technique was used as the patients had previous laparotomy. Usually a 10mm laparoscope was used and usually three to four portals of entry were used, one of them being 10mm port with a reducer. Initially free blood in the peritoneal cavity was aspirated using 10mm or 5mm suction canula. Both tubes & ovaries were inspected to locate ectopic tubal pregnancy on same occasion some times associated ruptured corpus luteum cyst with haemorrhage could be found. Most often linear Salpingostomy was performed particularly in ampullary tubal pregnancy. In Isthmial pregnancy liner Salpingostomy was done and in one case due to uncontrolled bleeding partial salpingectomy was performed. In about 3 cases milking was performed to expel the products of conception through the ampullary fimbrial opening. If there were tubal mole bleeding was not prolonged but otherwise bleeding might be troublesome. In linear salpingostomy incision was placed on the antimesentric border over the ectopic tubal sac. The products of conception were evacuated with hydrodissection & sometime in piecemeal. Bleeding points were diathermized with a bipolar cautery & no stitch was placed to appose the cut margins. Following the procedure pelvic cavity was washed with 500ml to one litre of normal saline. Drain was placed in the pouch of Douglas as precautionary measure. Patients were released from hospital after 24 hours on removal of drain. Inj MTX 50mg was administered in all cases immediate post operation. In cases of Rh negative women 50 – 150 ugm of anti D gamma globulin was administered to prevent subsequent rhesus isoimmunisation Pregnancy test was repeated after 7days following operation to detect persistence of any ectopic chorionic villi. Persistent ectopic pregnancy is the most common complication of conservative laparoscopic surgery for ETP. Patients were advised rest & not to try for pregnancy for 3months following operation. This period was necessary for her initial inflammation to subside and complete physical & mental recovery.

Subsequently they were asked to take attempt for normal pregnancy along with or without ovulation induction. As soon as there were biochemical evidence of conception all methods to diagnose site of pregnancy were undertaken. The attempt for a normal pregnancy or pregnancy through IUI were continued for one to one and a half year before reassessment or ART procedures were advised.

Observation

Among 68 cases of ETPS, location were on the ampullae of right Fallopian tubes in 35cases & on the left side in 25cases. The right isthmial region were affected in 5cases and in 3 cases it lodged on left sided isthmus. No interstitial pregnancy was observed. Nine cases happened to be ruptured tubal pregnancy and all of them were on the right side. The fallopian tubes those lodged ectopic pregnancy were involved in peritubal adhesion in 7 cases rest were normal. Other tube was normal in thirty

cases and peritubal adhesion was observed in 21 cases on the other tube. Adhesions were observed in the POD in 17 cases. Eight cases of peri-ovarian adhesions could be found. Recurrent ectopic pregnancy, i.e., cases following a previous ectopic pregnancy were seven cases in this series. Four had same sided recurrence & three had contractual tubal pregnancy. ETP occurring after previous miscarriage in five cases of which four had spontaneous abortions and one case had termination of pregnancy. 35 women out of 68 ETPS conceived subsequently with or without ovulation induction. 23 women ended up in term delivery. Five of them miscarried. Seven women had repeat ectopic pregnancy, three on same tube and four on other side. All the pregnancy happened between one and half year following operation and maximum number of pregnancy could be found between six months to one year following operation (20 out of 35cases).

Result and Discussion

Laparoscopic surgical management of ETP is a standard procedure now a days. In this study the presentation and incidence of ectopic pregnancy following treatment of infertility has been emphasized. Whenever infertile women conceive determination of site of pregnancy is of utmost importance and should be performed at earliest particularly in patients who had correction of tubal pathology. Whenever ectopic pregnancy occurs in previously infertile women the question arises about the condition of other tube. During laparoscopic management the external appearance of other tube can be assessed but regarding luminal pathology no inference can be made. Conducting simultaneous salpingoscopy is not also feasible for obvious reasons. Some authorities think that in all cases following an ectopic pregnancy other tube should be evaluated by standard techniques before allowing subsequent attempt of conception. In contrary it can be told that there is false positivity in these tests. Moreover healthy tube does not guarantee occurrence of subsequent intrauterine pregnancy. Hence attempt of a spontaneous conception for a stipulated period of time and strict vigilance regarding site of pregnancy if it happens is the rational approach of subsequent management. Very early detection of ectopic pregnancy not only allows conservative laparoscopic surgery but also medical treatment as well.

Systemic MTX has been used successfully to heal ETP[2] and subsequent tubal patency is similar to that following surgical management. The disadvantage of medical treatment is that it sometimes require prolonged hospitalisation and recurrent costly β -hCG estimation even up to 60 – 90days. The only advantage of medical treatment is that it can avoid surgery.

Laparoscopic surgery for unruptured ETP is a simple quick procedure. Liner salpingostomy[3-4] followed by evacuation of products of conception from affected tube is performed. It is not necessary to repair the tube because studies have demonstrated similar rates of tubal patency (75 - 80%), IUP (50 – 60%) and recurrent pregnancy (10 – 20%) whether the tube is repaired or left to heal by itself after both laparoscopic and open surgery. Question of salpingectomy, even partial is not very important until the affected tube is severely jeopardize. A meta-analysis of

retrospective studies of salpingectomy versus salpingostomy found similar rates of IUP (46 vs 44%) and ETP (15 vs 10%)[5]. The choice of procedure is often influenced by the state of remaining fallopian tube and past gynaecological and obstetric history.

Persistent ETP, the most common complication of laparoscopic salpingostomy occurring in 3 - 29% of women who have undergone this conservative surgical approach [6]. Detection of this condition is very important for which a repeat urinary pregnancy test is performed a week after surgery. In our series two such cases were found which were properly managed. ETP occurs in .5 – 1% of all pregnancies but the figure rises to 3 - 5% [7] after assisted conception. It has been observed from result analysis of present study that incidence of ectopic pregnancy among all pregnancies in last 5 years was 6.07% which is bit higher than usual incidence quoted in literature. This may be due to increased vigilance for early detection and increased incidence of tubal pathology in infertile women. Peritubal adhesion could be found more in number in unaffected tube (21 out of 68 = 30.8%) than the tube affected by ectopic pregnancy (7 out of 68 = 10.3%). This may be due to lack of tubal motility in Fallopian tubes involved in peritubal adhesion which affects egg pick up and transport. The incidence of recurrent ectopic pregnancies was 10.3% (7 out of 68 cases) which is nearly double that of primary tubal ectopics in women under treatment of infertility. This rise corresponds to usual non infertile population as mentioned in literature[8]. Ampulla is the commonest site for implantation of ETP (70%) which corresponds to available data in literature. The cause of higher incidence of involvement of right ampulla is not very clear as no evidence of its relation to present or past appendicular pathology could be found. The adhesion in the POD were found in 25% (17 out of 68) cases of ectopic pregnancies. As 75% of PODs in affected patients were free and clear adhesions in the POD could not be found to have any relation to the happening of tubal ectopic pregnancies. Patients are advised to restrain from attempt of conception, preferably using contraceptive measures like contraceptive pills (OCP). Contraception will avoid confusion between rising HCG level from newly pregnancy and persistent ETP, if pregnancy occurs in immediate post operative period. The pregnancy outcome is also encouraging. Incidence of non ART pregnancy was found to be more than 50% of which repeat ectopic pregnancy in 10.3% cases. Intrauterine pregnancy rate was 41.2%. Take home baby rate was found to be 33.8%. Miscarriage rate was 7.4%. With attempt of spontaneous pregnancy following an episode of ectopic pregnancy spontaneous pregnancy rate was three times higher than incidence of repeat ectopic pregnancy. This justifies our approach of trying for spontaneous or non ART conception without any further investigation following an episode of ectopic pregnancy. The age distribution found in this study is also interesting. 28 cases of ETP out of 500 pregnant women of age group below 30 years showing an incidence of 5.5%. In above 30 years age group ETP was detected in 40 cases out of 619 pregnancies showing an incidence of 6.5%. This indicates that in infertile women undergoing treatment for conception there is statistically insignificant difference in incidence of ETP in age group below & above thirty years of age.

Conclusion :

Ectopic pregnancy is a life-threatening situation when it is disturbed or ruptured. Early diagnosis allows options for treatment by minimal invasive surgery or medical treatment under care of skilled personnel. Patients should be extensively counseled regarding their risk of recurrent ETP and necessity for early medical attention for subsequent pregnancies. The latter includes serial determination of β HCG levels until an early USG examination can document an IUP or ETP. Unassisted intrauterine pregnancy happening following an episode of ectopic pregnancy even in patients who have conceived following treatment of infertility is about four times higher than repeat ETP which is reasonably high and the take home baby rate is also satisfactory. Risk of repeat tubal ectopic in subsequent pregnancy is there but low and can be managed easily and safely.

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