Ectopic pregnancy: New horizons

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Introduction
Ectopic pregnancy may be defined as implantation of fertilized ovum out side the normal uterine cavity. It may occur in tube (95%), the uterus (intramural, angular, cervical or in rudimentary horn), the ovary, the broad ligament or else where in the peritoneal cavity. The common site in the tube is the ampulla, followed by the isthmus. In the ampulla, the pregnancy is often expelled, whilst in the isthmus, the tube usually ruptures. Multiple ectopic pregnancies may occur including both tubes, as well as a combined intra uterine and extra uterine pregnancy (heterotopic pregnancy). Ectopic pregnancies continue to prove to be quagmire for an average clinician. It has performed implication with regards to future reproductive performance. Many procedures have influxes into the diagnosis and management, some are seems to be obsolete today. It is therefore worth while seeing the new horizons of ectopic pregnancies.

Incidence
Current incidence of ectopic pregnancy has been placed between 0.25 to 1% of all pregnancy. By all pregnancies it is meant as the sum of reported live births, legal induced abortions and ectopic pregnancies (Stabile and Arudzin Kas 1994). Presently ectopic pregnancy is reported to be accounting for 11.5% of all maternal deaths in UK. It is an important cause of maternal mortality in first trimester. (Cacciatore et al1990). The incidence of ectopic pregnancy is rising today. This rise is both real as well as apparent. The real rise seems to be due to increased incidence of PIE), sexually transmitted disease (STD), contraception methods like IUCD and progesterone only pills and modern methods of infertility treatment like assisted reproduction technique. The apparent rise could be because of better diagnostic facilities such as ßhCG estimation and high-resolution ultrasonography.

Etiology
The most likely cause of ectopic pregnancy is salpingitis due to chlamydia, gonococcus, tubercular and other infection. It is seen that promptly and correctly treated salpingitis does not add to the incidence of ectopic pregnancy. Untreated salpingitis usually causes infertility but incomplete treatment causes damage to tube with narrow passage allows smaller sperm but prevent the transport of the large blastocyst which can be trapped in blind pockets formed by adhesion of the endosalpinx leads to ectopic. Other causes includes:-

a) An intrauterine device in situ much increases the frequency of ectopic pregnancy relation to intrauterine gestation and also more implantation in unusual sties such as the ovary.
b) Use of the progesterone only pill.
c) Tubal surgery, whether performed on a tube that is morphologically normal (reversal of tubal ligation) or abnormal (post salpingitis reconstruction surgery).
d) The procedure for embryo transfer could raise the chance of ectopic by the direct extension of embryos through the tubal ostium by hydrostatic forces.
e) Abnormal embryogenesis.

Clinical presentation
The clinical feature of ectopic pregnancy are not similar, 75% with subacute, 25% or less with acute symptoms. The common presenting features are lower abdominal pain, delayed menses followed by vaginal bleeding or brown discharge and syncope. The vaginal bleeding or discharge is due to shedding of the decidua or 'decidual cast' when the pregnancy fails.

The classic symptoms and sign of a ruptured ectopic make the diagnosis obvious.
Symptom and sign before rupture are non specific. The most important criterion for the clinician is to "think of ectopic as urged by Zlantnik (1986). The suspicion is high if patient has history of pelvic inflammatory disease (PID), a previous ectopic, pregnancy, tubal surgery or a IUCD.

Diagnosis
The problem of ectopic pregnancy is essentially a diagnostic one. The emphasis today is on the early diagnosis of a tubal pregnancy before tubal rupture for this would significantly reduce maternal mortality, morbidity and also improve the future fertility. Newer treatment moralities like medical management or expectant management and even conservative surgery can be possible in ectopic pregnancy diagnosed earlier.

Investigations
Human chorionic gonadotrophin- The sensitive enzyme linked immunosorbant assay (ELISA) detects ßhCG more than 90% 01 patient of ectopic pregnancy while radio immunoassay (RIA) detect 100 percent. In the circulation of nearly all patients with an ectopic gestation ßhCG is present but the level is lower. In early normal pregnancy the serum ßhCH level double about every two days (48 hours) while in abnormal pregnancies including ectopics the ßhCG levels don't increase at this rate. It is recommended by Kader and colleague (1981) that if ßhCG increased by less than 66% over 48 hours in given case then other procedure should be performed to rule out ectopic pregnancy. Level of ßhCG in intrauterine pregnancy are described in table 1.

Ultrasonography - Ultrasonography is valuable in the assessment of patients with bleeding in early pregnancy. Its use is more informative if it is combined with serial ßhCG measurements. A intrauterine gestational sac is seen with trans-vaginal sonography (TVS) 12-14 days after biochemical detection of implantation (ßhCG more than 10 I.U/L). This time interval is longer using Trans-abdominal sonography (one week after the missed period). At this time the ßhCG level is approximately 1000 I.U/L. Ultrasonography finding of ectopic pregnancy shown in the table no-2.

Table No 2 : Ultrasound features of ectopic pregnancy

<table>
<thead>
<tr>
<th>Method</th>
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<tbody>
<tr>
<td>Trans abdominal</td>
<td>Live embryo in adnexa (10-12%) Pseudogestational sac in uterus Empty uterus + adnexal sac + fluid in pouch of Douglas</td>
</tr>
<tr>
<td>Trans vaginal</td>
<td>Live ectopic intact tubal ring with heart action (20%) Tubal abortion : poorly defined tubal ring + fluid in pouch of Douglas Ruptured tube : fluid in pouch Douglas</td>
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Colour Doppler- Trans vaginal colour Doppler can help to characterise the nature of the adnexal mass thus permitting preoperative diagnosis when the ectopic embryo and its characteristic heart beat cannot be seen. Ectopic pregnancy in such cases is seen an ectopic colour flow usually very prominent and randomly dispersed in side the solid part of the adnexal mass and clearly separated from ovarian tissue and corpus luteum.

Culdocentesis - Needling of the pouch of douglas and the finding of non-clotting blood will indicate an ectopic pregnancy after rupture.

Dilatation and curettage -The finding of a decidual reaction or the Arias Stella reaction can not always establish the diagnosis of ectopic pregnancy.

Laparoscopy - this is likely to be most valuable aid for the gynaecologist presented with clinical problem of the "suspected
ectopic”.

Treatment
Laparotomy followed by salpingectomy of the affected side has been a standard modality of treatment of ectopic pregnancy for many years. However with the introduction of modern diagnostic means, the vast majority of ectopic pregnancies are detected prior to rupture and thus treatment of ectopic pregnancy is changing very fast.

Surgical management - Surgery still remain the treatment of choice for most cases. However the laparoscopic surgery remains the line of choice for both ruptured and unruptured ectopic pregnancy provided vital signs are stable. Laparotomy is indicated in massive intra abdominal bleeding and extensive intra abdominal adhesion. Laparoscopic treatment of tubal pregnancy offers numerous advantages such as reduced operating time, hospital stay, cost, earlier return to activity, improved cosmetic result and morbidity. Linear salpingostomy is the most widely used procedure when the tube is intact. The term salpingostomy is used when the tube is left open to heal by secondary intention. Radical surgery like salpingectomy is absolutely indicated in irreparable damage tube. However the debate now rests on choice of technique either conservative or radical. It was believed that conservative surgery gives better fertility rates subsequently. Current literature suggested the irrespective of the surgical technique used, the condition of contra lateral tube is the most significant factor in terms of future fertility, besides the women’s own fertility potential (Verrneg M et al 1992). Thus modern concept is for doing a salpingectomy rather than conservative surgery in management of ectopic pregnancy.

Non surgical management -This sorts of management of ectopic pregnancy has been fascinating as it obviates the need of surgical intervention. The key to successful non-surgical management is a proper selection of cases. Non surgical management is divided in to two groups medical and expectant management. Drugs like methotrexate, actinomycin -D, mifepristone etc, alone or in combination are used. Many results has been tried like systemic injection or by local injection of drugs into the gestational sac either laparoscopically, transvaginally or by transcervical cannulation. Patients are chosen on the basis of the size of gestational sac (less than 4 cm), an unruptured tube without active bleeding, serum ßhCG levels of less than 1500 IU/L and sonographically non viable pregnancy. The success rate of medical treatment is about 80-90%. Approximately 2/3 rd cases tube remain patent. After the procedures, conception rate is 80% and recurrent ectopic pregnancy is 11% (Stovall et al 1991).

Expectant management has limited to those sub group of patient who have minimal symptoms have falling βhCG levels and over a period of time shows demising size of sac on TVS. Potential disadvantages of expectant management include continued peritoneal irritation and subsequently adhesion formation, tubal occlusion, infertility and rarely secondary abdominal pregnancy. There is no particular advantage to the expectant approach in term of future fertility, where as prolong hospitalisation and surveillance has distinct disadvantage (ylastato P et al 1992).

Conclusion
Influx of endosonography and endocrinal assays of ßhCG has changes the clinical picture of ectopic pregnancy dramatically in recent years from an emergency and a life threatening condition in most cases to a much more benign condition with milder presentation. Medical management give good results in carefully selected cases. Surgical intervention is now the method of choice but preferable one is laparoscopy.

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