Chapter

7

Ectopic Pregnancy

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INTRODUCTION

Fertilization normally occurs in the ampullary portion of the fallopian tube. The fertilized egg is propelled into the uterine cavity by the peristaltic movements of the musculature of the fallopian tube, as well as by the ciliary cells of the endosalpinx. The zygote enters the uterine cavity in 3–4 days following fertilization and is implanted in the decidua by the 7th postfertilization day. However, in pathological conditions, the implantation may occur outside the normal uterine cavity and the abnormal implantation of a blastocyst or a fertilized ovum outside the uterine cavity is termed as ectopic pregnancy. This condition is a major public health concern as there is a rise in its incidence worldwide.

INCIDENCE

An increase in the global incidence of ectopic pregnancy has been reported from its previous record. In the USA, Goldner et al (1993) reported a seven-fold increase and in UK, the incidence has doubled in the decade 1980–1990. In northern Europe between 1976 and 1993, the incidence increased from 11.2 to 18.8 per 1,000 pregnancies. In the USA, admissions to hospital for ectopic pregnancy increased from 17,800 in 1970 to 88,400 in 1989. In 1992, it had increased to 108,000 accounting for 2% of all pregnancies. In the UK, the incidence is 11.5 per 1,000 pregnancies. The rise in its incidence is attributed by the following:

1. Increased incidence of pelvic inflammatory diseases (PID), mainly caused by *Chlamydia trachomatis*.
2. Greater use of various contraceptives.
3. Tubal surgeries for infertility.
4. Assisted reproduction such as in vitro fertilization (IVF).

PATHOPHYSIOLOGY

Normal transport of ovum from the ovary to the uterine cavity takes 3–4 days. The fertilized ovum normally invades the decidua on the 6th or 7th day after conception. Important factors that are involved in its transport include the tubal contractility, ovarian hormones and the ciliary action within the tubes. Estrogens stimulate tubal contractility, but progesterone decreases its activity. Progesterone has been shown to reduce local prostaglandin secretion and relaxes the isthmic portion of the tube. This may allow the fertilized egg to cross into the uterus.

SITES OF IMPLANTATION

Tubal

Almost all (97%) of ectopic pregnancies occur in the fallopian tube. The sites in order of frequency are ampullary, isthmic, fimbrial and interstitial. The thin tubal wall and a poor patchy decidual reaction cause rupture and internal hemorrhage, sooner or later. A tubal abortion occurs when the conceptus passes through the fimbria into the abdominal cavity and this is more likely to occur in cases with implantation around the fimbria and ampulla of the tube. If the implantation is in the isthmus, rupture is the more common outcome. If the site of implantation is on the mesosalpinx, rupture may occur into the broad ligament,

causing a broad ligament hematoma. When the rupture occurs at the antimesenteric border, hemorrhage occurs into the peritoneal cavity. Implantation in the interstitial or the myometrial portion of the tube is also called 'cornual pregnancy', as it is surrounded by the muscle fibers of the uterus, the rupture classically occurs later because of the increased distensibility of the tube. It would be more difficult to diagnose, causes more tissue damage and has a great potential to bleed heavily due to the rich blood supply from the branches of the uterine and ovarian arteries. Rarely, a tubal pregnancy ends in a blighted ovum and gets reabsorbed completely without causing any bleeding and symptoms (Fig. 7.1).

Non-tubal

Ovarian Pregnancy

Ovarian pregnancy (Fig. 7.2) is rare, the incidence is reported as being between 1 in 2,000 and 1 in 8,500 deliveries. If the implantation is directly on the ovary it is called 'primary ovarian ectopic'. To diagnose this, the following criterion laid down by Spiegelberg should be fulfilled:

1. The fallopian tube on the affected side must be normal and intact.
2. The gestational sac (GS) must occupy the site of the ovary.
3. The GS must be connected to the uterus by the ovarian ligament.
4. The GS wall must contain ovarian tissue on histological examination.

A secondary ovarian ectopic pregnancy is the result of a tubal abortion and its reimplantation on the ovary.

Abdominal Pregnancy

Abdominal pregnancy is rare. The incidence rates reported between 1:3,400 and 1:8,000 deliveries. It is usually secondary as a result of a tubal abortion or rupture where the viable fetus is transferred into the peritoneal cavity. In the primary implantation abdominal pregnancy is surrounded with peritoneal tissues and the tubes and ovaries are normal.

The fetus, usually is unable to survive and is retained, there will be spontaneous resorption, suppuration or lithopedion formation. If pregnancy continues, it may even proceed to the III trimester. The clinical features of an abdominal pregnancy may develop causing mainly gastrointestinal symptoms—nausea, vomiting, constipation, diarrhea and

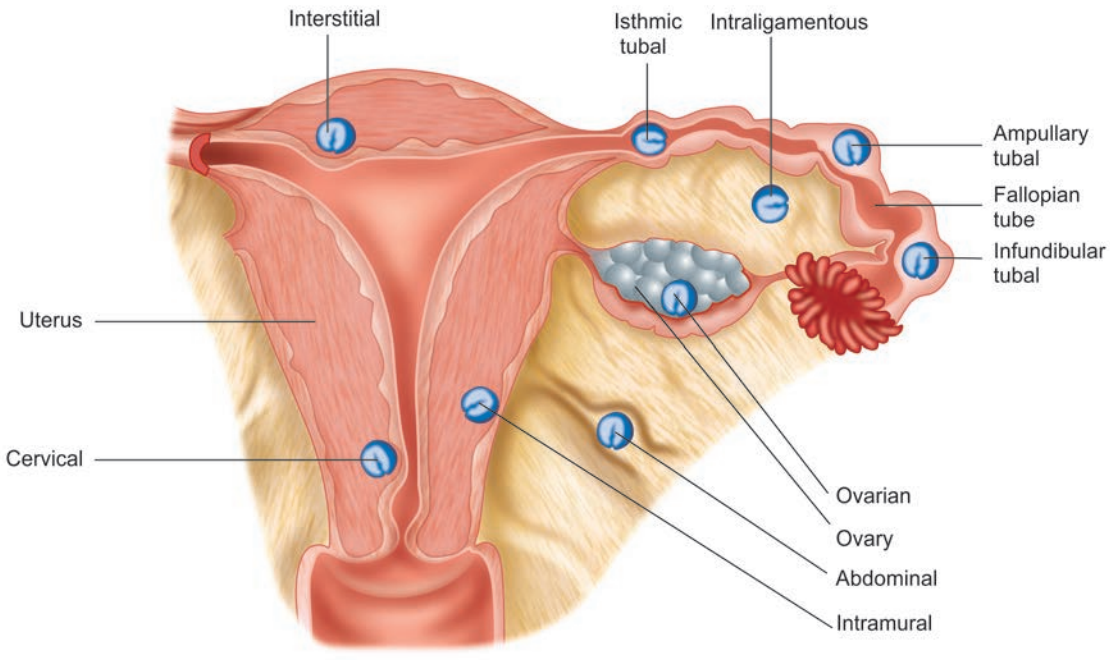

Fig. 7.1: Sites of implantation

pain. Abdominal examination may reveal easy palpation of fetal parts superficially without regular uterine contour and radiological examination of lateral view of the abdomen and pelvis reveal overlapping of fetal bones over the maternal vertebral column. Suspicion should be aroused when uterine contractions do not occur with oxytocin stimulation. Sometimes, the condition becomes apparent only at laparotomy where massive hemorrhage can occur. The maternal mortality is estimated as 10%.

Cervical Pregnancy

The implantation is below the internal cervical orifice of the uterus (os) with the trophoblastic tissue eroding into the endocervical mucosa and eventually into the fibrous substance of the cervix. Its frequency is between 1:10,000 and 1:16,000 deliveries. The cervix will be distended and balloon like, causes painless vaginal bleeding. A balloon tamponade with Foley catheter or occlusion compression sutures of the cervix may help to control bleeding. At times hysterectomy may be necessary as a result of uncontrollable bleeding from the implantation site in the cervix that cannot contract well.

Other Sites

Other uncommon sites include the vagina, intraligament and in a rudimentary horn.

ETIOLOGY AND RISK FACTORS

Pelvic Inflammatory Disease

In about 40% of tubal pregnancies, there is evidence of PID. The sexually transmitted infections like gonorrhea and chlamydia cause extensive tubal damage in the form of luminal narrowing, adhesions and kinking. The chlamydial infection causes minimal symptoms, but produces more extensive damage than that by gonorrhea. In India, puerperal sepsis and septic abortion are not uncommon and cause interstitial salpingitis with narrowing of the tubal lumen and decreases peristaltic movements through damage to its muscle wall. Pelvic tuberculosis is yet another cause of extensive tubal damage. Appendicitis and peritonitis can cause external adhesions, which lead to narrowing and kinking of the fallopian tubes. These tubal changes delay the passage of the fertilized egg, entrap it and encourage tubal implantation.

Fig. 7.2: Ovarian pregnancy

Contraceptive Methods

Intrauterine contraceptive device (IUCD) increases the risk of PID. It prevents uterine pregnancy in 95% cases, but is less effective in preventing tubal and ovarian pregnancy. Therefore if pregnancy occurs with IUCD in situ, one should carefully check for an ectopic pregnancy. Amongst various IUCDs, the progesterone containing IUCD shows a nine-fold increase in the incidence of ectopic pregnancy and the same can be said for minipills. This is attributed to slowing effect on tubal peristalsis by progestogens.

Tubal Surgeries

An ectopic pregnancy result from tubal recanalization and other tubal surgeries for blocked tubes in 15%–20% of cases.

Spontaneous recanalization is reported in 5%–7% of tubectomy operations and this recanalization opens a narrow lumen at the site of tubectomy, entrapping a fertilized egg.

It is believed that 7.4% of tubal pregnancies occur in previously sterilized women, according to Wolf and Thomson. A small fistulous opening sometimes occurs at the uterine end following laparoscopic sterilization by cautery. The sperms reach the ovary through this opening, but a fertilized egg cannot negotiate this narrow passage and gets lodged at this site.

In Vitro Fertilization

In IVF, multiple embryo transfer may cause tubal pregnancy if one of the embryo enters the fallopian tube.

Gamete Intrafallopian Transfer

Gamete intrafallopian transfer (GIFT) is also associated with tubal pregnancy. The risk of ectopic pregnancy is 5%–7% in assisted reproduction.

Congenital Defects

Congenital defects like accessory ostia, fibroid in the broad ligament and transmigration of the fertilized egg from one side to the other side delay entry into the uterine cavity. During this delay trophoblast develops and implants itself at an abnormal site. Transmigration of fertilized egg is seen in 9% of cases, of ectopic pregnancy, as recognized by the presence of the corpus luteum on the opposite side of the tubal pregnancy.

Defective Fertilized Egg

The fertilized egg may be defective. The age of the ovum (older ovum) may be responsible for the slow transfer of fertilized egg in the fallopian tube.

CLINICAL PRESENTATION

The ectopic pregnancy presents with clinical features in a variety of ways depending upon its site, amount and rapidity of blood loss as well as the pathological changes at the gestational site (Box 7.1). Therefore, the correct diagnosis poses a challenge to the obstetrician. A high degree of alertness toward ectopic pregnancy must be maintained to avoid the mortality and morbidity caused by delay in its diagnosis.

Almost all ectopic pregnancies are diagnosed between 5 and 12 weeks of gestation. The most common symptoms are low abdominal back or pelvic pain, which is usually unilateral and vaginal bleeding. The pattern of the bleeding is usually, but not always scanty, dark and intermittent unlike the profuse bleeding that occurs in a miscarriage. The fact that a patient with regular menses is late for a single period or has irregular or abnormal bleeding should suggest potential pregnancy. If there is free blood in the peritoneal cavity the diaphragmatic irritation will be transmitted as shoulder pain. When there is significant hemoperitoneum, the patient will have syncopal attacks or even come in a state of circulatory collapse. The presence of known risk factors can increase suspicion, but sexually active women presenting with abdominal pain and vaginal bleeding after an interval of amenorrhea has an ectopic until proven otherwise. Initial examination should be the vital signs and a general examination to estimate signs of blood loss with hypovolemia. In case of an unruptured ectopic, the patient complains of a localized pain to one iliac fossa. In significant hemoperitoneum, guarding, rebound tenderness and decreased bowel sounds may be present.

The vaginal examination will aid in making a more conclusive diagnosis. During speculum examination, the cervix should be closely examined for signs of a spontaneous abortion. Blood oozing out from the orifice of the uterus (OS), with presence of fetal and placental tissue, points to an inevitable abortion. In an ectopic, the cervical os is closed. On bimanual examination, the uterus will be somewhat smaller than the expected date. A pathognomonic sign of an ectopic is a positive cervical excitation test. This is done by gentle motion of the cervix to both sides of the lateral fornix. There is frequently marked tenderness due to the stretching of the involved site. Sometimes posterior fornix will be very tender as the heavier affected tube lies in the pouch of Douglas. The examination should be carried out as gently as possible to avoid rupture of an unruptured ectopic. Rupture will lead to severe intraperitoneal bleed and collapse. When there are obvious signs of hemoperitoneum, a digital vaginal examination is of little value and may enhance further intraperitoneal bleeding.

Box 7.1: Features indicative of ectopic pregnancy

Amenorrhea
Acute abdominal pain
Slight vaginal bleeding or no bleeding
Fainting, hypotension, pallor
Abdominal tenderness
Pelvic tenderness
Ultrasound

INVESTIGATIONS

The major advances that have helped in making an early diagnosis of extrauterine pregnancy are highly sensitive rapid assays for β-human chorionic gonadotropin (β-hCG) levels, use of ultrasound to evaluate the pelvis and application of laparoscopy as a diagnostic and therapeutic tool.

Beta-human Chorionic Gonadotropin Measurement

The easiest assessment of pregnancy in any women in the reproductive age group with abdominal pain and abnormal vaginal bleeding will be a urine pregnancy test. It is highly sensitive being able to positively identify a positive hCG threshold level of 50 IU/L.

In instances, where expectant management is feasible or in very early pregnancy around 5 weeks where the GS might not yet be visualized, the serial serum β-hCG monitoring, becomes an essential tool. In normal pregnancy, the serum concentrations increase exponentially, doubling every 2–3.5 days in 4–8 weeks of gestation and reaches a peak around the 8th–12th week. A 2-day sampling interval is helpful. If the doubling is less than 85% or the level starts reaching a plateau or decreasing, it is most likely to be an ectopic pregnancy.

Ultrasound

Imaging with a transvaginal probe has improved visualization of the GS in early pregnancy. At about 5 weeks, a GS can be seen in the uterine lumen. This sac is surrounded by two layers of deciduas, the capsularis and the parietalis, giving an ultrasonographic appearance of a 'halo'. The presence made by these two concentric layers is strongly indicative of an intrauterine pregnancy and can be used to differentiate it from an ectopic pregnancy, where there is only one decidual layer. In an intrauterine pregnancy, a fetal pole will be visualized at around the 6th or 7th week. By 9 weeks, the human fetus may be seen. After the death of an ectopic fetus, the central part of the deciduas will undergo necrosis with some amount of fluid and this can be mistaken for an intrauterine sac and is termed pseudogestational sac. Other ultrasound findings include fluid in the pelvis, which would indicate a collection of blood from either by leaking or by ruptured ectopic and presence of dilated fallopian tube with the GS, for sometimes this would appear as a complex mass in the adnexa or free fluid in the pouch of Douglas (Fig. 7.3).

Discriminatory Zone

Kadar et al proposed this, where the hCG levels are correlated to the ultrasound features of an early intrauterine pregnancy. This is especially important in a woman with irregular vaginal bleeding in early pregnancy, where the exact age of gestation is not known. An intrauterine sac where the hCG concentration was above the discriminatory zone almost always predicted an intrauterine pregnancy. When no sac is present above this level, an ectopic pregnancy must be considered. The recent recommended level is 1,500 IU/L in the presence of a mass or fluid in the pouch of Douglas, but in the absence of these, a higher concentration of 2,000 IU/L is advised.

Ultrasound examination done in a patient with an hCG below the discriminatory zone is not useful. The sensitivity of detecting an intrauterine pregnancy, spontaneous miscarriage or ectopic pregnancy when the hCG is below this level is 30%–40%. The positive predictive value of ultrasound in making a diagnosis of intrauterine pregnancy is 80% and in an ectopic pregnancy is 60%. This means that if the diagnosis of an ectopic pregnancy is made just based on the ultrasound features without considering the discriminatory zone, 4 out of 10 women would undergo surgical intervention unnecessarily and jeopardizing a desired intrauterine pregnancy.

Laparoscopy

Once the diagnosis has been established, a diagnostic laparoscopy is performed for the definitive diagnosis and management. Since laparoscopy has become a routine procedure, the diagnosis of an ectopic can be made earlier thus reducing its morbidity and mortality.

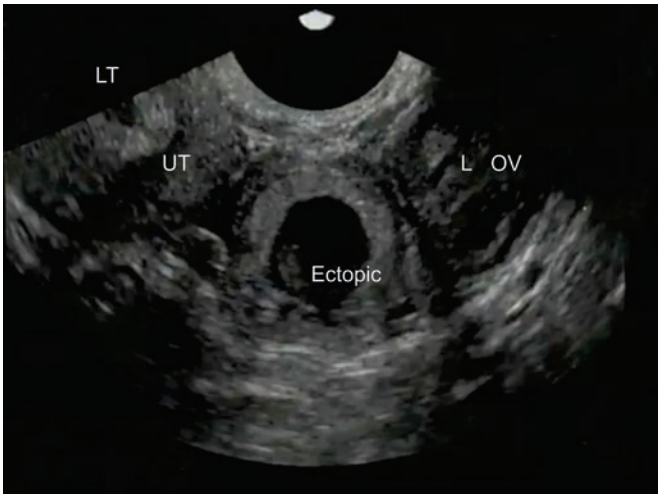

Fig. 7.3: Ultrasound (LT, left tube; L OV, left ovary; UT, uterus)

RUPTURED ECTOPIC PREGNANCY BASED ON SEVERITY

Acute Ectopic Pregnancy

Acute ectopic pregnancy occurs when the tube ruptures and causes internal hemorrhage. A woman presents with a short period of amenorrhea and severe lower abdominal pain, with or without vaginal bleeding. Pain is initially colicky due to tubal distension and peristaltic action. With the tubal rupture, pain becomes severe and continuous and spreads upward with increasing hemoperitoneum. The woman complains of referred pain in the shoulder, when the diaphragm is irritated due to blood. Vaginal bleeding, if present, is very slight and occurs in the form of a trickle from the fallopian tube. The patient may develop fainting attacks. Occasionally, woman may be brought in a collapsed state.

Tachycardia, pallor and hypotension are observed if internal hemorrhage is severe. The abdomen is distended and tender, the cervix is firm and the cervical movements cause pain. The uterus is normal size and firm. The pelvic examination is very painful and the woman does not allow a detailed bimanual examination. No definitive mass is therefore, palpable.

Differential Diagnosis

Rupture of a corpus luteal cyst and hematoma simulates the clinical features of an ectopic pregnancy. It is difficult to differentiate it from an ectopic pregnancy even by ultrasound, but the treatment remains the same.

Splenic rupture may be mistaken for an ectopic pregnancy, but amenorrhea helps in the diagnosis.

Gastric perforation and appendicitis produce acute abdominal pain, but the signs of internal hemorrhage are absent. The woman with an ectopic pregnancy develops epigastric pain if the blood trickles up the diaphragm, when it may be mistaken for myocardial infarction. Normal electrocardiogram (ECG) and ultrasound demonstration of fluid in the abdominal cavity helps in diagnosing ectopic pregnancy.

Treatment

Acute ectopic pregnancy mandates immediate laparotomy and no time should be wasted in any investigation apart from hemoglobin and blood grouping and crossmatching. Ultrasound may be undertaken if the woman's condition is stable. Salpingectomy or salpingo-oophorectomy will control the bleeding.

The free blood in the peritoneal cavity, if fresh and unclotted, can be used for autotransfusion. The advantages of autotransfusion include availability of blood immediately on opening the abdominal cavity, no crossmatching and grouping is required and no need to check on serum hepatitis or HIV virus. The blood is collected and filtered through 4–5 layers of sterile gauze over a sterile tunnel into a sterile bottle containing one part of 3.8% solution to five parts of blood. The Rh-negative woman should receive anti-D gamma globulin (100 µg IM). Even if the blood is not available immediately laparotomy should be undertaken at the earliest using crystalloids and hemaccel to replace the blood loss and correct hypotension. Blood may be transfused later to correct anemia.

Subacute Ectopic Pregnancy

The woman with subacute ectopic pregnancy presents with amenorrhea, abdominal pain and vaginal bleeding. The vaginal bleeding is slight and dark with altered blood, continuous or intermittent. This bleeding comes from the decidual shedding as well as some trickle from the fallopian tube. The pain initially starts in the lower abdomen, but may spread upwards if the bleeding progresses. Formation of a hematocele in the pouch of Douglas can lead to retention of urine. The patient also develops slight pyrexia if the blood in the peritoneal cavity gets infected.

The general condition of the woman is stable, but pallor may be noticed. The lower abdomen is tender and a tender mass may be palpable. The cervix is firm and pushed against the symphysis pubis. The uterus is firm and normal in size. An irregular tender mass is felt in one of the fornices. A pelvic hematocele is felt in the posterior fornix as an irregular, tender mass with varying consistency, feeling firm at some places and soft at others.

The problem with subacute ectopic pregnancy is that it does not always present in the classical manner. Pain before bleeding is more likely due to an ectopic pregnancy.

Differential Diagnosis

Septic abortion: If the patient is febrile, the condition may be mistaken for septic abortion. Posterior culdocentesis aspirates old blood in ectopic pregnancy and pus in septic abortion.

Pelvic abscess: Culdocentesis is helpful in the diagnosis of pelvic abscess.

Pyosalpinx: In PID, amenorrhea is absent and the woman suffers from high fever. The pregnancy test is negative, ultrasound may not be conclusive and laparoscopy may be needed to diagnose and treat.

Tubercular salpingitis: Amenorrhea, abdominal pain, vaginal bleeding and mild pyrexia are common both to tubercular salpingitis and ectopic pregnancy. Pregnancy test, ultrasound and laparoscopy will establish the diagnosis.

Uterine fibroid: A hematosalpinx adherent to the uterus gives an impression of a fibroid. The clinical features and ultrasound confirm the diagnosis.

Retroverted gravid uterus: This with retention of urine may at times simulate the clinical features of an ectopic pregnancy. The uterus is felt as a well-defined soft mass in the posterior fornix and the cervix points forward. Ultrasound confirms the diagnosis.

Investigation

The diagnosis may not always be straight forward and the following investigations may be needed.

Blood test: Hemoglobin (Hb%), blood group and Rh typing.

Pregnancy test: It may be positive or negative. If positive, the β-hCG level may be subnormal for the period of gestation. The level does not rise as with a normal pregnancy.

Culdocentesis: It is done with 18 number lumbar puncture needles by piercing the pouch of Douglas. Where as a positive finding with aspiration of old blood with microclots is suggestive of intraperitoneal hemorrhage, a negative-culdocentesis does not rule out an ectopic pregnancy. With the availability of ultrasound scanning, the application of culdocentesis is becoming rare.

Ultrasound: It shows an empty uterus and an adnexal mass. Free fluid in the pouch of Douglas may be present. Transvaginal scanning gives better imaging and shows uterine pregnancy at least one week earlier (5th week) in comparison to transabdominal scan. In an ectopic pregnancy, a tubal ring (pseudosac of decidual lining) is seen (doughnut or Bogel sign). The diagnostic accuracy with ultrasound is 90%. Doppler ultrasound is useful in identifying and differentiating an ectopic pregnancy from other adnexal masses.

Laparoscopy: It confirms the nature of adnexal mass and differentiates tubercular and inflammatory mass from an ectopic pregnancy.

Serum progesterone level: Ectopic pregnancy can be ruled out and a viable intrauterine pregnancy diagnosed with 98% sensitivity if serum progesterone level is more than 25 ng/mL. Serum progesterone level less than 5 ng/mL confirms a non-viable pregnancy in 100% of cases. A level between 5 and 25 ng/mL requires additional ultrasound scanning.

Beta-hCG level: If β-hCG is greater than 1,500 mIU/mL, transvaginal ultrasound should be able to detect a uterine pregnancy. An abdominal scan can pick up a uterine pregnancy, when β-hCG level rises to 6,000 mIU/mL. Absence of GS at β-hCG level over 1,500 mIU/mL strongly suggests an ectopic pregnancy.

Treatment

Treatment is surgical and similar to that of acute ectopic pregnancy, but the blood collected in the peritoneal cavity however, cannot be used in autotransfusion, because it is often clotted and potentially infected.

Chronic Ectopic Pregnancy

The symptoms are similar to those of subacute ectopic pregnancy, but are milder and of longer duration and resemble those of chronic PID and tubercular pyosalpinx. The treatment is laparotomy or laparoscopic removal of the adnexal mass.

UNRUPTURED ECTOPIC PREGNANCY

With the practice of routine ultrasound scanning in early pregnancy, more cases of early, unruptured ectopic pregnancies are being diagnosed. There will be no other symptoms apart from amenorrhea. Treatment mainly comprises of surgery, surgically administered medication and medical management (Fig. 7.4).

Surgical Methods

An unruptured ectopic pregnancy is removed either by laparotomy or by laparoscopy. If the GS is less than 5 cm in length and located in the ampullary region, linear salpingostomy and removal of the sac can be done. The opening is left unsutured. Hemostasis is secured by cautery.

Excision of the sac by partial salpingectomy is done for isthmic tubal pregnancy. Reanastomosis can be performed at a later date.

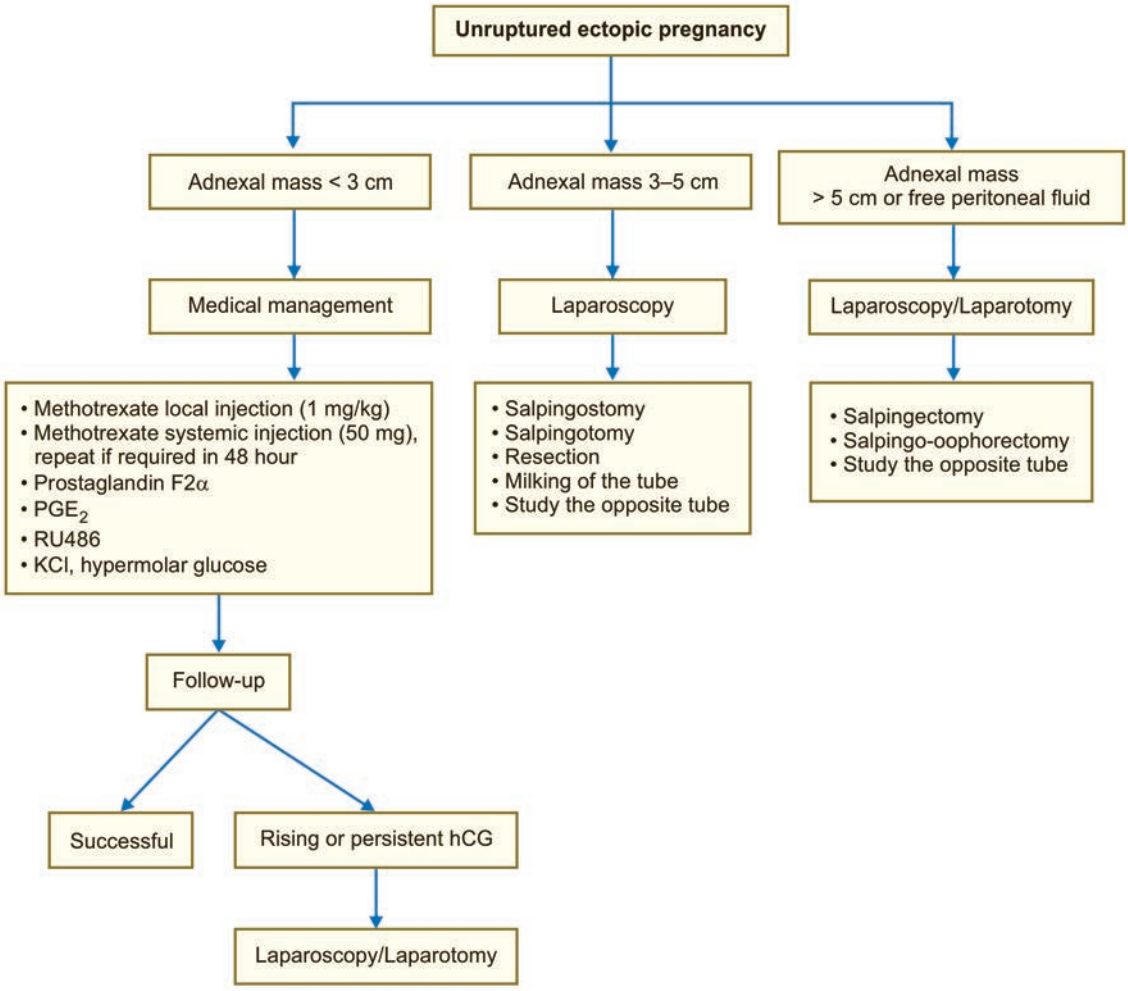

Fig. 7.4: Management of unruptured ectopic pregnancy (hCG, human chorionic gonadotropin; KCl, potassium chloride; PGE_2, prostaglandin E_2; RU486, mifepristone)

Milking of the products of conception is not an ideal method, because bleeding can continue to occur. It is feasible only in the ampullary tubal pregnancy.

The conservative surgery is desirable in a young woman and in a woman whose contralateral tube is damaged or removed on account of previous ectopic pregnancy.

Salpingectomy is done if the sac is more than 5 cm and in a multiparous woman.

Surgically Administered Medications

Methotrexate 50 mg, prostaglandin E_2 or potassium chloride is injected into the GS via laparoscopy or under ultrasound guidance. A prolonged follow-up with serum β-hCG will be required for 4 weeks. In 5%–10% cases, the treatment fails or the bleeding starts in which case definitive surgery will be needed. The advantages of surgically administered medication (SAM) are a short hospital stay, quicker recovery and conservation of the fallopian tube.

Medical Treatment

Tanaka et al in 1982 were the first to use methotrexate in an early ectopic pregnancy. Methotrexate 50 mg intramuscular (IM) in a single dose resolves the ectopic sac in 90%–92% of cases, the dose may be repeated after 48 hours. The following is done with serial β-hCG estimation and ultrasound. In 5% of cases surgery may be required when this treatment fails. The follow-up study reveals patent tube in 80%–90% cases. The criterions for conservative medical therapy are:

1. Serum β-hCG level less than 2,000 mIU/mL.
2. Gestational sac less than 3 cm with no fetal cardiac activity. The woman may develop cramp-like abdominal pain during the first 2–3 days and β-hCG level may rise in the first week. She should be closely monitored in the hospital.
3. The patient's hepatic and renal functions should be normal. Serial serum β-hCG estimations are required in the follow-up. A fall in the level to 15% or below the initial level indicates complete resolution of the ectopic pregnancy. The fall in the level to 30%–40% level suggests persistent trophoblastic tissue and incomplete resolution.

Prognosis

Prior infertility is the most significant determinant for fertility potential after the surgery in an ectopic pregnancy. Choice of surgery does not influence the post-treatment fertility potential. There is no difference in the reproductive outcome, whether laparotomy or laparoscopy is resorted to. While 50%–60% of cases have subsequent full term pregnancy, 15%–20% of cases have a repeated ectopic pregnancy and the rest remain infertile. Mortality has been reduced to 1.8/1,000 pregnancies, but morbidity in the form of repeated ectopic pregnancy and infertility remains.

BASED ON MOST COMMON SITES OF ECTOPIC PREGNANCY

Rudimentary Horn Pregnancy and Interstitial Pregnancy

Rudimentary horn and interstitial pregnancies cause rupture and bleeding in late I or early II trimester of pregnancy. The bleeding is often profuse and needs immediate surgery. The surgery comprises excision of the horn or hysterectomy. Resection of the interstitial portion should be carefully done in a young woman, bearing in mind the possibility of uterine rupture in the subsequent pregnancy. Elective cesarean delivery is recommended in such a case.

Cornual Pregnancy

Cornual pregnancy behaves like an ectopic pregnancy. The woman develops severe abdominal pain during early pregnancy and may bleed vaginally. Hysteroscopic guided suction evacuation or injection of methotrexate will avoid a laparotomy.

BASED ON OTHER SITES OF ECTOPIC PREGNANCY

Cervical Pregnancy

A cervical pregnancy is a very rare, but a formidable complication because of life-threatening bleeding. The woman presents with a short period of amenorrhea, a sudden profuse bleeding with no or minimal abdominal pain. The external os is patulous and the products of conception are felt in the cervical canal. The internal os is closed. The cervix is ballooned out and the uterus is normal in size. The clinical diagnosis of inevitable abortion is often made. The ultrasound scanning shows a normal sized empty uterine and the entire GS lying in the cervical canal. The treatment is hysterectomy in a multiparous woman. In a young woman, conservative management consists of ligating the cervical branch of the uterine artery on either side, evacuating the products by suction evacuation and leaving an inflated Foley catheter in the cervical canal as a hemostat for 24 hours. The products of conception should be examined histologically for choriocarcinoma. Cervical pregnancy is commonly reported in Japan.

Abdominal Pregnancy

A woman with abdominal pregnancy may carry the pregnancy up to term. The early symptoms of abdominal pain and vaginal bleeding may not be recalled by the patient. She may suffer vague abdominal pain throughout pregnancy. At or near term, she goes into spurious labor, but fails to deliver with syntocinon drip. X-ray of the abdomen or ultrasound examination reveals a dead, malformed and rarely a live fetus lying high up in the abdominal cavity. Lateral view of the abdomen shows a fetus in an abnormal site and fetus overlying the maternal vertebral column. Absence of uterine wall around the abnormally placed fetus, abnormal location of the placenta, absent amniotic fluid and empty uterus in the pelvis indicate abdominal pregnancy. The management of this case is by laparotomy. The fetus and the placenta should be gently removed and the abdomen closed without drainage. If the placenta is attached to the intestine or a vascular organ, it is prudent to leave it in situ

and cut the umbilical cord close to the placenta. Postoperative methotrexate will resolve the placental tissue in a few weeks to a few months.

Heterotopic Pregnancy

Heterotopic pregnancy is very rare and is reported in 1:30,000 pregnancies. It involves one tubal and one uterine pregnancy and very rarely bilateral tubal pregnancy. Heterotopic pregnancies occur with in vitro fertilization reproduction technology. Medical management of tubal pregnancy with drugs adversely affects intrauterine pregnancy and therefore, is contraindicated.

A heterotopic pregnancy is an intrauterine pregnancy coexisting with an ectopic, which is usually tubal. The incidence varies from 1:10,000 to 1:30,000 deliveries. The rise in the incidence may be attributed to the assisted reproductive therapy (ART) in vitro fertilization and multiple embryo transfers.

CONCLUSION

The incidence of ectopic pregnancy is on the rise because of the increase in the etiological factors. The high risk factors include PID, use of IUCDs, previous tubal surgery and ARTs. The clinical presentations vary and are related to gestational age, site of ectopic pregnancy and the amount of internal bleeding. Routine ultrasound in early pregnancy detects unruptured ectopic pregnancies. Minimal invasive or medical management retains the potential for future reproduction in young women. Prognosis for subsequent fertility is improved with early diagnosis of this condition; mortality is also reduced to 1.8 per 1,000 pregnancies.