Ectopic pregnancy

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An ectopic pregnancy refers to a pregnancy that grows outside of the uterine cavity , most commonly within the fallopian tube. - To facilitate management of an ectopic pregnancy it is import - - ant to be able to describe the location of the pregnancy as accurately as possible. The newly agreed terminology broadly divides ectopic pregnancies into uterine (defined by evidence of trophoblast invasion be yond the endometrial–myometrial - junction, but not outside the uterine visceral/broad ligament peritoneum) and extrauterine ectopic pregnancies (Table 87.1). They are further described as being complete (solely confined to the myometrium) or partial (involving both the myometrium and the uterine cavity). Additional variations include rudimentary horn pregnan - cies. These are rare, with a reported incidence of 1 in 75 /uni00A0 000– 150 /uni00A0 000 pregnancies. They are able to develop into the second trimester if not diagnosed early through the identification of a single interstitial portion of the fallopian tube attached to the main unicornuate uterine body , with products of concep - - tion completely surrounded by myometrium, presenting with - severe pain and uterine rupture. A residual ectopic pregnancy refers to an ectopic preg - nancy that remains visible on ultrasound scan 3 months after a negative urinar y pregnancy test and serum beta-human chori - onic gonadotropin (β HCG) level of <20 /uni00A0 IU/L. As the ectopic pregnancy grows , the placental tissue can infiltrate the blood vessels surrounding the fallopian tube, leading to bleeding within the tube and into the peritoneal cavity . Further growth of the ectopic pregnancy can rupture the fallopian tube, causing significant intraperitoneal blood /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF loss. This constitutes a gynaecological emergency . An ectopic pregnancy occurs in 11 per 1000 pregnancies, and there is a maternal mortality rate of 0.2 per 1000 estimated ectopic pregnancies. The major risk factors for an ectopic pregnancy are shown in Summary box 87.1 . Summary box 87.1 Risk factors for an ectopic pregnancy /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF An ectopic pregnancy may be suspected on clinical grounds, but making the diagnosis can be di ffi cult (Table 87.2). /uni25CF Christian Johann Doppler , 1803–1853, Professor of Experimental Physics, Vienna, Austria, enunciated the ‘Doppler principle’ in 1842.

pregnancies. Uterine ectopic pregnancies Extrauterine ectopic pregnancies Cervical (the

gestational Tubal (Figure 87.4) (further sac is present below the divided into interstitial level of the internal os with [Figure 87.5], isthmic and absence of the ‘sliding sign’ ampullary) and evidence of blood /f_l ow Ovarian (colour Doppler around the gestational sac can help identify an area using colour Doppler) of increased vascularity within the ovary that Caesarean scar (the is representative of gestational sac is located peritrophoblastic blood /f_l ow low in the uterus, close separate from that of the to the

internal os with corpus luteum) (Figure 87.6 trophoblast invading into the anterior myometrium) Abdominal (commonly the (Figure 87.3) broad ligament, pouch of Douglas, uterovesical pouch Intramural (located above and surfaces of the tubes the level of the internal os) and uterus) Previous pelvic in /f_l ammatory disease (PID) Smoking History of infertility Use of an intrauterine contraceptive device (IUCD) Previous ectopic pregnancy Previous abdominal/pelvic surgery, e.g. myomectomy, hysteroscopic

resection Previous tubal surgery, e.g. sterilisation, salpingostomy, tuboplasty Endometriosis TABLE 87.2 Symptoms and signs of an ectopic pregnancy. Symptoms Signs Abdominal or pelvic pain Pelvic, abdominal and/ Amenorrhoea or missed or adnexal tenderness or fullness period Signs of peritonism Vaginal bleeding Pallor Breast tenderness Gastrointestinal symptoms Abdominal distension Dizziness, fainting, syncope Cervical motion tenderness Shoulder tip pain (pain on moving the cervix) Rectal

pressure or pain on Enlarged uterus defecation Tachycardia, hypotension Asymptomatic Shock, collapse Orthostatic hypotension) Figure 87.3 Ultrasound image of a caesarean scar ectopic pregnancy. Figure 87.4 Ultrasound image of a tubal ectopic pregnancy. (a) (b) Figure 87.5 (a, b) Ultrasound images of an interstitial ectopic preg

nancy.

The presentation of an ectopic pregnancy is variable and the di ff erential diagnoses include: /uni25CF miscarriage; /uni25CF urinary tract infection; /uni25CF ovarian cyst accident; /uni25CF appendicitis. A transvaginal ultrasound scan should be performed if the diagnosis is suspected (see Table 87.1 for the defining ultra sound characteristics of uterine and extrauterine ectopic preg nancies). The complete absence of an intrauterine gestational sac with a positive pregnancy test increases the probability of an ectopic pregnancy unless the pregnancy is not su ffi ciently advanced for the sac to be seen on ultrasound scan. An ectopic pregnancy is mor e likely if free fluid is seen in the pouch of Douglas or an adnexal mass is identified on ultrasound scan. In equivocal cases, serial measurements of serum levels, 48 hours apart, can help to establish the diagnosis. A rise in the β HCG level by at least 63% is mor e indicative of a viable intrauterine pregnancy and an ultrasound scan should be o ff ered between 7 and 14 days. Levels that halve when taken 48 hours apart are more suggestive of a failing pregnancy and a urinary pregnancy

test should be repeated after 14 /uni00A0 days. Levels that remain static or show a suboptimal increase or decrease over a 48-hour period are more likely to be repre sentative of an ectopic pregnancy . Furthermore, a single level above approximately 1500 /uni00A0 IU/L, in association with an empty uterus on ultrasound scan, in the absence of a heavy bleed, is suggestive of an ectopic pregnancy . Laparoscopy can also be used as a diagnostic tool (Figure 87.7); occasionally , however, a false-negative diagnosis is obtained when the pregnancy is not su ffi ciently advanced and is, therefore, too small to be seen within the fallopian tube. Management of an ectopic pregnancy can be divided into expectant, medical (methotrexate) or surgical treatment. The choice of treatment is dependent on: the haemodynamic stabil ity of the patient; ultrasound features of the ectopic pregnancy (presence of free fluid, presence or absence of fetal cardiac activity); serum β HCG level; and the patient's understanding of the diagnosis, commitment to follow-up and choice. Expectant management and medical management in the form of methotrexate can be o ff ered to women who are clin ically stable and pain fr ee, who have a serum β HCG level <1500 /uni00A0 IU/L for expectant management and between 1500 and <5000 /uni00A0 IU/L for medical management, who are committed to the follow-up protocol and where the ectopic pregnancy is not alive and measures <35 /uni00A0 mm. In these circumstances, repeat - serum β HCG levels are recommended on days 4 and 7. A - fall of ≥ 15% is considered reassuring and should be repeated weekly thereafter until <20 /uni00A0 IU/L. If the levels deviate from this, then the patient should be reviewed further to plan ongoing management. Women should be advised of the risk of rupture and the need for additional/alternative treatment if the situation should change. Methotrexate is a folic acid antagonist that interferes with β HCG DNA synthesis. Significant side e ff ects include hepatotoxicity . Further pregnancies should be avoided for a minimum of 3 /uni00A0 months following treatment with methotrexate. Careful patient selection is vital. Furthermore, some patients fail to respond to this medication and will require surgical management. Surgical management should be o ff ered to women who prefer to have surgery or those who are unable to commit to - follow-up as well as those with significant pain, those who have a rising serum β HCG lev el of ≥ 5000 /uni00A0 IU/L and/or those in whom the ectopic pregnancy is considered to be live and mea - sures ≥ 35 /uni00A0 mm. Surgical options include a salpingectomy (removal of the fallopian tube) or salpingostomy (opening of the fallopian tube and extraction of the pregnancy tissue) (Figure 87.8). This is ideally performed laparoscopically in a stable patient as it - -

Figure 87.6 Ultrasound image of an ovarian ectopic pregnancy. Figure 87.7 Laparoscopic image of a tubal ectopic pregnancy. Figure 87.8 Laparoscopic salpingostomy.

is associated with shorter operative times, less intraoperative blood loss, shorter hospital stays and similar subsequent intra uterine pregnancy rates. A laparotomy may be required if the woman is haemodynamically unstable. A salpingectomy is the preferred technique in the presence of a contralateral healthy fallopian tube. A salpingostomy is associated with an 8% risk of persistent tr ophoblastic tissue, intra-abdominal bleeding and an increased risk of a repeat ectopic pregnancy . These patients are subsequently followed up with serial serum β HCG levels until a negative result is obtained to exclude the presence of residual trophoblastic tissue. If a further ectopic pregnancy occurs within the same fallopian tube, then a salpingectomy is recommended regardless of the condition of the contralateral fallopian tube. The management of non-tubal ectopic pregnancies (e.g. interstitial ectopic pregnancies [Figure 87.9], caesarean sec tion scar ectopic pregnancies) can be complex and associated with more significant complications, such as bleeding, leading to an increased risk of a hysterectomy . These cases ar managed in tertiary centres. The management

plan will be guided by the haemodynamic stability of the patient and the location of the ectopic pregnancy , including the expertise of the clinician managing the case. These patients should be counselled regarding their increased risk of further ectopic pregnancies in subsequent conceptions. In view of this, they are encouraged to present as early as possible in any subsequent pregnancy to establish its location. Anti-D immunog lobin should be administered to non-sensitised rhesus (Rh)-negative women.

Figure 87.9 Laparoscopy of an interstitial ectopic pregnancy.

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