

## Diagnosis and treatment of ectopic pregnancy

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# Diagnosis and treatment of ectopic pregnancy

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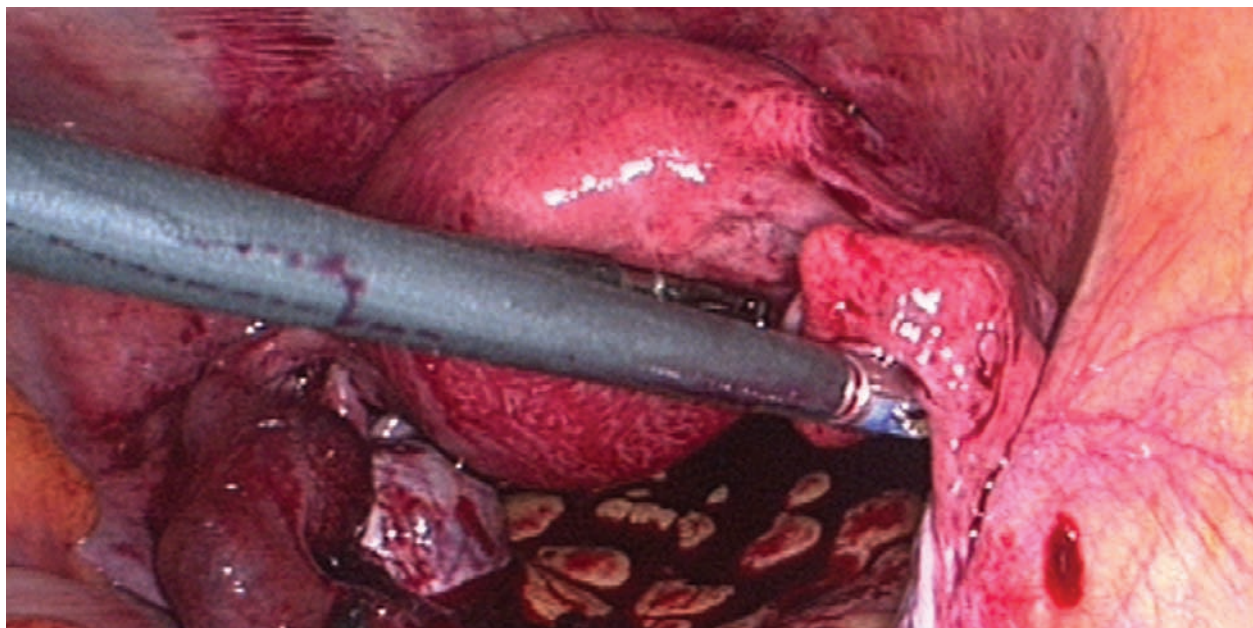
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## FIGURE 1

A ruptured left tubal ectopic pregnancy with blood in the pelvis at laparoscopy



## What are the symptoms and signs?



**AN ECTOPIC PREGNANCY OCCURS WHEN A FERTILISED EGG IS IMPLANTED OUTSIDE THE UTERUS. THE MOST**

common site is the fallopian tube; rarely an ectopic pregnancy can be found in the ovary, a caesarean section scar, the abdomen or the cervix.

The most common risk factors are:

- Previous ectopic pregnancy
- Pelvic inflammatory disease
- Endometriosis
- Previous pelvic surgery
- Presence of a coil
- Infertility

However, a third of women with an ectopic pregnancy have no known risk factors.

Ectopic pregnancy occurs in an average of 1 in 90 pregnancies in the UK. Although most cases are recognised and treated appropriately, women still die as a result of late diagnosis and suboptimal management of ectopic pregnancy. Six women died as a result of ectopic pregnancy between 2006

## How should diagnosis be confirmed?

and 2008 in the UK.<sup>1</sup> The NICE guideline on ectopic pregnancy and miscarriage, published in December 2012, recommends a low threshold for offering a pregnancy test to women of childbearing age when they attend the surgery.<sup>2</sup>

Women should be referred to the most appropriate unit (A&E, gynaecology or early pregnancy assessment (EPA) service) if an ectopic pregnancy is suspected. The guideline also emphasises the need to give practical support and information to patients and their partners.

## SIGNS AND SYMPTOMS

In early pregnancy, all ectopic pregnancies will be asymptomatic; symptoms and signs appear when the tube starts to tear, see table 1, right. When the tube ruptures, the woman will quickly become unwell and haemodynamically unstable because of rapid intra-abdominal blood loss, see figure 1 above. »

## What are the management options?

### Table 1

#### Symptoms of ectopic pregnancy

##### Common symptoms

- Pelvic or abdominal pain
- Amenorrhoea, missed period or abnormal period
- Vaginal bleeding with or without clots

##### Other reported symptoms

- Breast tenderness, nausea (related to pregnancy)
- Diarrhoea and vomiting (related to intraperitoneal irritation)
- Dizziness, fainting or syncope (related to significant haemorrhage)
- Shoulder tip pain, shortness of breath, lower chest pain (related to irritation of the diaphragm)
- Dysuria, urinary frequency (related to bladder irritation)
- Pain on defecation or rectal pressure (related to deposit of blood in the pouch of Douglas)

**Table 2**

### Signs of ectopic pregnancy

- Pelvic tenderness
- Adnexal tenderness
- Cervical motion tenderness
- Abdominal tenderness
- Rebound tenderness or peritoneal signs
- Abdominal distension

Because of the range of symptoms a pregnancy test should be offered to all women of reproductive age. It is important to remember that a positive diagnosis of a urinary tract infection or gastroenteritis does not exclude an ectopic pregnancy.

### EXAMINATION AND ASSESSMENT

A basic examination should include general appearance (to look for pallor, shock, collapse), pulse (for tachycardia > 100 beats/minute) blood pressure (hypotension i.e. < 100/60 mmHg) and orthostatic hypotension.

The signs to look for in a case of suspected ectopic pregnancy are shown in table 2, above.

### REFERRAL

The urgency and location of the referral depends on the clinical situation.

Women who are haemodynamically unstable, or in whom there is significant concern about the degree of pain or bleeding, should be referred directly to A&E, irrespective of the result of the pregnancy test. Women may sometimes be unable to pass urine if they are hypovolaemic.

Stable patients with bleeding who have pain or a pregnancy of six weeks gestation or more or a pregnancy of uncertain gestation should be referred immediately to an EPA service (or out-of-hours gynaecology service if the EPA service is not available) for further assessment. There are more than 200 NHS EPA units throughout the UK with different working hours (see Useful information box on p17).

If the EPA service is closed and you are concerned about the patient, contact the gynaecologist on call, with a view to avoiding delay in further assessment. It is important to explain to the patient, and her partner, why she is being referred and what to expect when they arrive at the hospital.

GPs can use expectant management for women with a

pregnancy of less than six weeks gestation who are bleeding but who are not in pain. They should advise these women to repeat a urine pregnancy test after 7–10 days and to return if it is positive or if their symptoms continue or worsen. The patient and her partner should be given a phone number to call in an emergency. The development of pain should prompt referral. An EPA service or out-of-hours gynaecology service should be contacted immediately when pain develops. If the pain is severe, the patient should be referred to A&E.

### CONFIRMING DIAGNOSIS

After a positive pregnancy test at the surgery, the diagnosis will be confirmed, at the EPA service or out-of-hours gynaecology service, via a transvaginal ultrasound scan to identify the location of the pregnancy.

If a transvaginal ultrasound scan is unacceptable to the woman, she will be offered a transabdominal ultrasound scan, which has visual limitations but has the advantage of being able to detect fibroids, an enlarged uterus and ovarian cysts.

If the ultrasound is inconclusive and the pregnancy cannot be located, human chorionic gonadotrophin (hCG) levels repeated after 48 hours may help to make a diagnosis and assist in planning the repeat scan. hCG is an indicator of trophoblast proliferation but not the location of the pregnancy. It should be noted that hCG can increase, decrease or plateau with an ectopic pregnancy. The ultrasound scan and the woman's symptoms are the key to diagnosis.

If the diagnosis is still unclear and the woman is in significant pain, a laparoscopy may be offered.

### MANAGEMENT

The management options depend on the symptoms, the hCG level, the ultrasound findings, the patient's general health and preferences, and the facilities for follow-up.

#### Medical management

Medical management with methotrexate is offered to women who are able to return for follow-up and who fulfill all the following criteria:

- No significant pain
- An unruptured ectopic pregnancy with an adnexal mass smaller than 35 mm with no visible heartbeat
- A serum hCG < 1,500 IU/L
- No intrauterine pregnancy (as

confirmed on an ultrasound scan).

Methotrexate is an antimetabolite and antifolate drug. It is teratogenic and effective contraception should be used for three months following administration. Patients should avoid alcohol and NSAIDs. Approximately one in six women will experience side effects of nausea, sickness, diarrhoea, mouth ulcers and feelings of fatigue. These symptoms usually only last a few days.

Monitoring is hospital based.

Women are asked to attend regularly for blood tests (including liver and renal function) and hCG follow-up until levels are < 25 IU/L. A Rhesus-negative woman will not need to receive anti D.

An ectopic pregnancy may rupture despite apparently successful treatment and declining hCG levels. Significant pain during medical treatment with methotrexate would indicate a ruptured ectopic pregnancy and should prompt emergency assessment and hospital admission.

## 'An ectopic pregnancy may rupture despite apparently successful treatment and declining hCG levels'

### Surgery

Surgical management usually laparoscopic salpingectomy (unless there is an abnormal contralateral tube or the patient is haemodynamically unstable), will be offered to women who are unable to return for follow-up after methotrexate treatment or who have an ectopic pregnancy plus any of the following:

- Significant pain
- An adnexal mass of 35 mm or larger
- A fetal heartbeat visible on an ultrasound scan
- A serum hCG > 5,000 IU/L

Rhesus-negative women undergoing surgery for ectopic pregnancy should be offered 250 IU anti D.

### Expectant management

This is outside the remit of the NICE guidance, but could be considered for

# key points

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## The most common site of localisation of an ectopic

pregnancy is the fallopian tube. Rarely an ectopic pregnancy can be found in the ovary, a caesarean section scar, the abdomen or the cervix. Risk factors are previous ectopic pregnancy, pelvic inflammatory disease, endometriosis, previous pelvic surgery, the presence of a coil and infertility. However, a third of women with an ectopic pregnancy have no known risk factors.

## NICE recommends a low threshold for offering a

pregnancy test to women of childbearing age when they attend the surgery. Symptoms and signs appear when the tube starts to tear. When the tube ruptures, the woman will quickly become unwell and haemodynamically unstable because of rapid intra-abdominal blood loss. The most common symptoms of ectopic pregnancy are pelvic or abdominal pain, amenorrhoea, missed period or abnormal period and vaginal bleeding. A positive diagnosis of a urinary tract infection or gastroenteritis does not exclude an ectopic pregnancy. Signs of suspected ectopic pregnancy include pelvic, abdominal, adnexal or cervical motion tenderness, rebound tenderness and abdominal distension.

## Women who are haemodynamically unstable, or in

whom there is significant concern about the degree of pain or bleeding, should be referred directly to A&E, irrespective of the result of the pregnancy test. Stable patients with bleeding who have pain or a pregnancy of six weeks gestation or more or a pregnancy of uncertain gestation should be referred immediately to an early pregnancy assessment (EPA) service, or out-of-hours gynaecology service if the EPA service is not available. GPs can use expectant management for women with a pregnancy of less than six weeks gestation who are bleeding but who are not in pain. Diagnosis is confirmed by transvaginal ultrasound scan to identify the location of the pregnancy.

## Medical management with methotrexate is offered

to women who are able to return for follow-up and who have no significant pain, an unruptured ectopic pregnancy smaller than 35 mm with no visible heartbeat, serum hCG less than 1,500 IU/L and no intrauterine pregnancy. Surgical management, usually laparoscopic salpingectomy, will be offered to women (where these conditions are not met). NICE recommends that EPA services should be available seven days a week and that women who have had a previous ectopic pregnancy may self-refer.

a pain-free woman with a small ectopic pregnancy, able to return for follow-up, with low and falling hCG levels. The protocols vary at each hospital. A third of these women will require additional medical or surgical management.

## CONCLUSION

NICE recommends pregnancy testing of women of reproductive age presenting with both common and less common symptoms and signs of ectopic pregnancy and a low threshold for referral to the EPA, out-of-hours gynaecology service or A&E. There is a strong emphasis on communication and support throughout the whole process.

NICE has made a priority recommendation that EPA services should be available seven days a week facilitating access to ultrasound scanning. Women who have had a previous ectopic pregnancy may self-refer to an EPA service.

The guidance also promotes medical management of ectopic pregnancy for suitable patients and laparoscopy (rather than laparotomy) for women who require surgery.

## REFERENCES

- 1 Centre for Maternal and Child Enquiries (CMACE). Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006-08. The Eighth Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. *BJOG* 2011;118 (Suppl. 1):1-203
- 2 National Institute for Health and Clinical Excellence. CG154. Ectopic pregnancy and miscarriage: diagnosis and initial management in early pregnancy of ectopic pregnancy and miscarriage. NICE. London. 2012
- 3 Royal College of Obstetricians and Gynaecologists. The management of tubal pregnancy. RCOG Guideline No 21. RCOG. London. 2010

## Useful information

### Early Pregnancy Assessment Units

To find your local EPA unit go to <http://earlypregnancy.org.uk/FindUsMap.asp>

### NHS choices

[www.nhs.uk/conditions/Ectopic-pregnancy](http://www.nhs.uk/conditions/Ectopic-pregnancy)

### The Ectopic Pregnancy Trust

[www.ectopic.org.uk](http://www.ectopic.org.uk)

## We welcome your feedback

If you would like to comment on this article or have a question for the authors, write to: [editor@thepractitioner.co.uk](mailto:editor@thepractitioner.co.uk)