MANAGEMENT OF TUBAL PREGNANCIES

an audit

Sunando Surray, MRCOG; Veena Sharan, FRCOG

The management of tubal pregnancy has changed since the first descriptions of it by the Victorian surgeon and founder of the Medical Defence Union, John Lawson Tait, but it still presents his successors with a major challenge. Dr Surray and Mrs Sharan report from Furness General Hospital on their audit of this dangerous condition, the incidence of which is rising with the increased prevalence of Chlamydia infection.

INTRODUCTION

The incidence of tubal pregnancies in the United Kingdom is around 1 in 100⁽¹⁾ and is increasing parallel to the increasing incidence of Chlamydia infections.

DIAGNOSIS

The diagnosis of ectopic pregnancy depends upon a history of a short period of amenorrhoea followed by pain in the abdomen and/or bleeding per vaginum, clinical findings and a combination of serum beta human chorionic gonadotrophin (βhCG) and transvaginal ultrasound scan (TVS)⁽²⁾. In most situations the diagnosis of chronic ectopic pregnancy is by method of exclusion of intrauterine pregnancy by TVS. If the serum βhCG level is more than 1500mIU/ml, TVS should be able to diagnose an intrauterine pregnancy (double decidual sign of gestation sac). This needs to be differentiated from the 'pseudosac', which is an intrauterine blood clot seen in association with 20% of tubal pregnancies. Therefore, an empty uterus by TVS with βhCG more than 1500mIU/ml in a symptomatic woman is highly suggestive of ectopic pregnancy. The so-called 'Doughnut/Bagel' sign is a haemorrhage around the sac with fetal heart pulsating in the tube and is found in another 20% of tubal pregnancies.

The βhCG level should be above 1500mIU/ml for diagnosis although multiple pregnancy and uterine fibroids may confuse the picture. The associated scan findings of free fluid in the peritoneal cavity increase the index of suspicion. With good sonographic machines, it is still possible to diagnose ectopic pregnancies without recourse to laparoscopy in these situations.

Where levels are below 1000mIU/ml or a patient is unsure of dates or has minimal symptoms, progesterone estimation may provide useful confirmatory evidence. Progesterone levels of 20-60 nmols/ml are diagnostic of a live pregnancy and it is recommended that repeat βhCG/progesterone estimation is undertaken 48 hours later. Progesterone levels of 60 nmols/ml associated with absence of a gestational sac on ultrasound are suspicious of tubal pregnancy⁽³⁾.

Having mentioned all these tests for the diagnosis of ectopic pregnancy we must admit that laparoscopy is still the gold standard for diagnosis of ectopic pregnancy. A laparoscopy performed too early in pregnancy can miss the diagnosis of ectopic pregnancy.

MANAGEMENT

Management can be expectant, medical or surgical.

Expectant

The rationale behind expectant management is that we are diagnosing ectopic pregnancies much earlier and some of them are tubal abortions. The criteria for expectant management are βhCG < 1000mIU/ml and falling, patient is asymptomatic and size of ectopic is small with no free fluids. Studies have shown that two thirds resolve, but there is a risk of rupture in a quarter. The Royal College of Obstetricians and Gynaecologists (RCOG) has recommended weekly βhCG and scans until βhCG falls below 20mIU/ml⁽⁴⁾.

Medical

Medical treatment is appropriate for a small minority of patients who are considered at too high a risk for laparoscopy, either as a diagnostic or as a surgical procedure⁽⁵⁾.

Single dose methotrexate (MTX) at 50mg/m² (approximately 1mg/kg body weight), intramuscular, is the most widely used regimen and the success rate ranges from 86% to 94%⁽⁶⁾. The criteria for MTX treatment are women with asymptomatic ectopic pregnancy, who have high compliance, serum βhCG < 5000 mIU/ml, size of < 3cm and no fetal cardiac activity on ultrasound^(7,8). The contraindications are abnormal liver function tests and non-compliance, as in two thirds of cases 'separation pain' is expected and it is absolutely important to differentiate this pain from pain of rupture.

Comparative studies between medical and surgical treatment have shown that medical treatment is associated with a higher subsequent intrauterine pregnancy rate and it is cost-effective when βhCG is < 1500mIU/ml. Surgery becomes more cost-effective when βhCG is > 1500mIU/ml. The downside is the side effects of MTX but studies have shown that many women still prefer medical to surgical treatment.

Surgical

Laparoscopic surgery has superseded laparotomy because it has been found to be more cost-effective and has other obvious advantages of minimal access surgery⁽⁸⁾. However, the jury is still out regarding salpingectomy or salpingotomy. There is increased subsequent intrauterine pregnancy rate if we preserve the tube (salpingotomy) compared to salpingectomy. Further studies involving a subset of patients, who had salpingectomy and the contra lateral tube was healthy, showed that the subsequent intrauterine pregnancy rate was still high compared to the subset of women who had the same procedure but the contra lateral tube was damaged⁽⁹⁾. Also, the difficulty of preserving the tube is persistence of trophoblast with risk of bleeding, return to theatre and, in the longterm, increased risk of recurrent ectopic pregnancies. RCOG has therefore recommended that salpingectomy should be performed if the contra lateral tube is healthy.

Open laparotomy remains the surgery of choice in cases of ruptured ectopics with haemodynamic instability.

AUDIT ON MANAGEMENT OF ECTOPIC PREGNANCIES

We undertook an audit to review the current practice in Furness General Hospital, in accordance with RCOG guidelines. We retrospectively analysed all cases of ectopic pregnancies managed in our unit from 1st January 2004 to 31st March 2005. There were 19 cases in that period.

The objectives were:

- to determine the type of treatment (expectant, medical, surgical)
- to ascertain the type of surgery (laparoscopic, laparotomy, salpingectomy, salpingotomy), indications and condition of the contra lateral tube

Audit standards derived from RCOG guidelines

1. A laparoscopic approach is superior to laparotomy.
2. Salpingectomy is to be preferred to salpingotomy when the contra lateral tube is healthy.
3. Salpingotomy is reasonable when contra lateral tube is damaged.
4. In selected cases, methotrexate treatment is an effective alternative to surgical treatment.

The results of the audit are shown in figure 1. Surgery was performed by consultants in 40% of the cases, staff grades in 40% and registrars in 20%.

The conclusion from the audit was that the practice in our unit was quite satisfactory as those undergoing laparotomy had valid reasons documented.

We recommended:

- improved operative note keeping
- more training for junior staff on laparoscopic management
- re-audit in two years' time

REFERENCES

1. Robert F, Richardson J, Sharma A. Early pregnancy assessment. The Obstetrician and Gynaecologist 2000;2(2):7
2. Tulandi T. Current protocol for ectopic pregnancy. Contemp Obstet Gynaecol 1999;44:42-55
3. Mascarenhas LJ. Problems in early pregnancy. IN Luesley DM, Baker PN. Obstetrics and Gynaecology. An evidence-based text for MRCOG. Arnold Publishers. 2004. Pp 606-15
4. RCOG Green-top Guideline. The Management of Tubal Pregnancy (21). May 2004
5. Mol BW, Van der Veen F. Role of transvaginal ultrasonography in the diagnosis of ectopic pregnancy. Fertil Steril 1998;70(3):594-5
6. Yao M, Tulandi T. Current status of surgical and nonsurgical treatment of ectopic pregnancy. Fertil Steril 1997;67(3):421-33
7. Lundorff P, Hahlin M, Sjoblom B, Lindblom B. Persistent trophoblast after conservative management of ectopic pregnancy: prediction and detection. Obstet Gynecol 1991;77(1):129-33
8. Sowter M, Frappel J. The role of laparoscopy in the management of ectopic pregnancy. Rev Gynaecol Practice 2002;2:73-82
9. Dubuisson JB, Morice P, Chapron C, de Gayffier A, Mouelhi H. Salpingectomy – the laparoscopic surgical choice for ectopic pregnancy. Human Reprod 1996;11(6):1199-203