



RESEARCH ARTICLE

ECTOPIC PREGNANCY- ART OF DIAGNOSIS AND TREATMENT A SHORT TERM REVIEW

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ARTICLE INFO

Article History:

Received 23rd March, 2017
Received in revised form
15th April, 2017
Accepted 19th May, 2017
Published online 20th June, 2017

Key words:

Ectopic,
Ultrasound,
Pregnancy,
Risk Factors.

ABSTRACT

An ectopic pregnancy, is a complication of pregnancy in which the embryo implants outside the uterine cavity (Page *et al.*, 1976). Generally ectopic pregnancies are not viable. Furthermore, they are dangerous for the mother, since internal haemorrhage is a life-threatening complication. Most of the ectopic pregnancies occur in the fallopian tube, but implantation can also occur in the cervix, ovaries, and abdomen. An ectopic pregnancy is a medical emergency, and, if not treated properly, can lead to death. Ectopic pregnancy causes major maternal morbidity and mortality, with pregnancy loss, and its incidence is increasing worldwide (Why women die, 1998; Storeide *et al.*, 1997; Ectopic pregnancy—united states, 1995). In northern Europe between 1976 and 1993 the incidence increased from 11.2 to 18.8 per 1000 pregnancies, (Storeide *et al.*, 1997) and in 1989 in the united states admissions to hospital for ectopic pregnancy increased from 17 800 in 1970 to 88 400 (Simms *et al.*, 1997). These changes were greatest in women over 35 years of age (Storeide *et al.*, 1997; Ectopic pregnancy—united states, 1995). In the united kingdom there are around 11 000 cases of ectopic pregnancy per year (incidence 11.5 per 1000 pregnancies), with four deaths (a rate of 0.4 per 1000 ectopic pregnancies) (Why women die, 1998).

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Citation: Sruthi Srinivasan, 2017. "Ectopic pregnancy- Art of diagnosis and treatment a short term review", *International Journal of Current Research*, 9, (06), 51896-51898.

INTRODUCTION

Ectopic pregnancy is a major problem in gynaecology as it one of the commonest female surgical emergencies in developing countries (Lawson and Stewart, 1967). It is also associated with increased risk of maternal mortality and impaired fertility. Diagnosis is occasionally very difficult particularly with the chronic type of ectopic pregnancy (Kadar, 1983). There is also a rare case of interstitial ectopic pregnancy. Interstitial ectopic pregnancy is defined as the ectopic gestation developing in the uterine part of the fallopian tube. It is a rare event constituting only 5% of all tubal ectopic pregnancies and is associated with a high rate of complications. (Wood and Hurley, 1992) The condition is difficult to diagnose, both clinically and sonographically. The authors therefore, present a rare case of interstitial ectopic pregnancy that was diagnosed by using 3d ultrasound and managed by laparoscopy.

Risk factors

Although a proportion of women with ectopic pregnancy have no identifiable causative factors, the risk is increased by several factors like previous ectopic pregnancy, (Pisarskamd

et al., 1998) tubal damage from infection or surgery, a history of infertility (Marchbanks *et al.*, 1988) treatment for in vitro fertilisation, (Strandell *et al.*, 1999) increased age, (Storeide *et al.*, 1997; Simms *et al.*, 1997) and smoking (Demouzon *et al.*, 1988). A history of pelvic inflammatory disease is particularly important (Marchbanks *et al.*, 1988; Westrom *et al.*, 1981) and has been implicated in the increased incidence of ectopic pregnancy (Westrom *et al.*, 1981; Velebil *et al.*, 1995) after acute salpingitis, the risk of an ectopic pregnancy is increased (Marchbanks *et al.*, 1988). This is particularly true of *chlamydia trachomatis*, the main cause of pelvic inflammatory disease. Comprehensive programmes to prevent chlamydia not only decrease the incidence of *C. trachomatis* infections but also the rate of ectopic pregnancies. Previous female sterilisation and current use of an intrauterine contraceptive device are only risk factors when patients with ectopic pregnancy are compared with pregnancy controls and not with non-pregnant women. This is because overall the risk of pregnancy in these situations is low, but if pregnancy does occur an ectopic pregnancy is more likely. The incidence of ectopic pregnancy after assisted reproductive techniques is 4%, (Strandell *et al.*, 1999) which is 2-3 times greater than the background incidence. The main risk factor in this group is tubal infertility. The incidence of heterotopic pregnancy (an ectopic pregnancy together with an intrauterine pregnancy) is also increased after assisted reproductive techniques.

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Presentation

Ectopic pregnancies usually present after seven weeks of amenorrhoea. The diagnosis can be difficult unless the condition is suspected and can be confused with miscarriage, an ovarian accident, or pelvic inflammatory disease. The abdominal pain is usually lateral. However, history and physical examination alone do not reliably diagnose or exclude ectopic pregnancy, as up to 9% of women report no pain and 36% lack adnexal tenderness. The presence of known risk factors can increase suspicion, but any sexually active woman presenting with abdominal pain and vaginal bleeding after an interval of amenorrhoea has an ectopic pregnancy until proved otherwise. Women who are present in a collapsed state usually have had prodromal symptoms that have been overlooked. Tubal rupture is rarely sudden since it is due to invasion by the trophoblast. Therefore, if there is any suspicion, hospital referral for investigation is mandatory.

Ectopic pregnancy and ultrasound

First trimester bleeding occurs in up to 30% of all diagnosed pregnancies. Important causes of first trimester bleeding include spontaneous abortion, missed or threatened abortion, ectopic pregnancy, and gestational trophoblastic disease. One of the greatest dilemmas for clinicians is to accurately diagnose the cause of pain or bleeding, and specifically to determine if an ectopic pregnancy exists due to its grave consequences. Ectopic pregnancy occurs in almost two percent of all reported pregnancies in the United States and is the leading cause of pregnancy-related death in first trimester. When an early pregnant patient is identified with bleeding or pain, it is crucial to determine where the pregnancy is located. Ultrasound as a first line diagnostic tool offers an excellent opportunity for pregnancy localization. The use of the beta subunit of human chorionic gonadotropin (beta-hcg) quantification is a valuable adjunct to help determine the course and possible outcome of an early pregnancy. The goal should be to preserve the health and future reproductive capabilities of our patients.

Methods

We review the incidence, causes, diagnosis, and management of ectopic pregnancy. The evidence presented is from a combination of selected published papers identified from Medline and a reflection of clinical practice in our unit. Medline was searched with the term "ectopic pregnancy" and combined with terms such as incidence, risk factors, methotrexate, salpingectomy, salpingostomy, etc.

Treatment

Expectant and medical management are possible, and should be considered in selected cases, but they are not widely practised in the United Kingdom. Surgery remains the mainstay of treatment, possibly overtreating a number of cases.

Medical

Methotrexate, a folic acid antagonist, is used for medical management in patients before rupture who are haemodynamically stable. It can be given intramuscularly or injected into the ectopic pregnancy, a route that delivers high concentrations locally with smaller systemic distribution. However, rates of successful treatment are lower than with

systemic methotrexate, and it requires a laparoscopic or ultrasound guided needle procedure. Methotrexate in a single dose is more convenient than the variable dose regimen but may carry a higher risk of persistent ectopic pregnancy. Close follow up with serial measurements of serum concentrations of human chorionic gonadotrophin is required. A second course of treatment may be necessary, and some patients may require surgical intervention. Methotrexate treatment may produce significant side effects.

Surgical

Surgical treatments may be radical (salpingectomy) or conservative (usually salpingostomy), and they may be performed by laparoscopy or laparotomy. Salpingectomy is the treatment of choice if the fallopian tube is extensively diseased or damaged because the risk of ectopic pregnancy recurring in that tube is high. Generally, hospital stay (1.3 days) and convalescence (2.4 weeks) are shorter after laparoscopy than after laparotomy (3.1 days and 4.6 weeks, respectively). Both techniques produce similar rates of complications and persistent trophoblast. If persistent trophoblast is a risk, follow-up with serial measurements of serum concentrations of hcg is necessary. Because no single postoperative concentration of hcg is predictive, follow-up is necessary until complete resolution. The need for a second laparoscopy should be based on symptoms rather than changes in concentrations of hcg. In a randomized controlled trial, methotrexate and laparoscopic salpingostomy were equally effective.

Conclusion

Because ectopic pregnancy cannot be diagnosed in the community, all sexually active women with a history of lower abdominal pain and vaginal bleeding should be referred to a hospital early for ultrasonography and, if necessary, measurement of serum concentrations of hcg. Women with a history of ectopic pregnancy should have an early ultrasonography to verify viable intrauterine pregnancy in their subsequent pregnancies. Diagnostic laparoscopy is necessary if the clinical condition cannot be clarified. Expectant and medical management of ectopic pregnancy are effective options in selected women as long as adequate facilities for monitoring are available. If surgery is necessary, the laparoscopic route results in a shorter hospital stay, but salpingostomy has no clear advantage over salpingectomy. The decision should, therefore, be made on an individual basis. Methotrexate and laparoscopic salpingostomy are equally successful in treating ectopic pregnancy. Ectopic pregnancy can be prevented by decreasing the incidence of pelvic inflammatory disease and chlamydia infections and improving their treatment.

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