GRAND ROUND

Ruptured ectopic pregnancy after a decline in chorionic gonadotropin

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The advent of automated assays for beta human chorionic gonadotropin (β-hCG) has made expectant management a realistic option in selected cases of suspected ectopic pregnancy.

CASE HISTORY

A woman of 37, a multigravida, was referred because of continuous and increasingly heavy bleeding since her last menstrual period two weeks earlier and worsening left-sided pelvic pain for the past four days. She had been using a progesterone-only pill for contraception. A home urinary pregnancy test had been positive. On examination she was haemodynamically stable; she had lower abdominal tenderness on the left side without peritonism and a left adnexal mass was felt *per vaginam*. The diagnosis was in doubt but she was judged to have an intrauterine pregnancy. A transvaginal scan showed a thickened endometrium and the possibility of a right simple cyst, there was also some free fluid in the pouch of Douglas. Serum β-hCG was 123 iu/mL. She was followed up as an outpatient, and two further β-hCGs two days apart were 62 and 21 iu/mL; she was due to have a repeat scan at one week. Six days after her initial presentation severe lower abdominal pain developed and she was admitted to hospital. At diagnostic laparoscopy she was found to have a leaking left fimbrial ectopic pregnancy; she also had a right simple ovarian cyst. Partial salpingectomy was performed laparoscopically, and the ectopic pregnancy was confirmed histologically.

COMMENT

Ectopic pregnancy remains an important cause of maternal deaths in the UK; there were 11 fatal cases in the last triennial report.[1] This is despite the advent of a rapid qualitative urine β-hCG assay which if negative virtually excludes ectopic pregnancy. Other investigations include a quantitative serum β-hCG assay which can be used with transvaginal scanning as part of an algorithm in suspected ectopic pregnancy. In the present case the low and falling β-hCG suggested the pregnancy was unlikely to be ectopic.[2] Even if a pregnancy is indeed ectopic, a falling β-hCG points to a self-limiting form of pregnancy that requires no intervention.[3]

Review of the published work indicates a consensus that, whatever the site of pregnancy, a falling β-hCG concentration justifies expectant management.[4] Moreover, women whose ectopic pregnancy resolved spontaneously have been found to have lower initial β-hCGs (mean 246 iu/L) than those who required surgery (mean 628 iu/L).[5] Against this must be set rare cases in which a decline in β-hCG was followed by tubal rupture.[6] Possible mechanisms in these cases are blood-vessel erosion by a surviving clump of trophoblastic tissue (Padwick ML, personal communication) or pressure necrosis from an intraluminal clot.[6]

The special feature of the present case is the exceptionally low level at which symptoms of rupture developed (21 iu/L); the lowest previously reported was 97 iu/L. For clinicians the message is that, when expectant management is decided upon, the patient requires regular hospital review and the β-hCG must be followed down to 'non-pregnant' levels.[7]

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