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REVIEW

Indeterminate lesions in cancer (I): pelvic adnexal masses

J A Spencer

St James' University Hospital, Leeds, UK

Corresponding address: Dr J A Spencer, Consultant Radiologist, St James' University Hospital, Leeds LS9 7TF, UK

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Ultrasound (US) is the primary imaging study of most women with pelvic symptoms and signs that suggest a gynaecological cause, and for the majority it defines the site and nature of any pelvic mass. The key clinical questions are (a) is there a mass and is it uterine or ovarian; (b) is it likely to account for the clinical presentation; (c) does it need removing and (d) if so, by simple resection or as part of cancer surgery? The principal concern is for ovarian cancer, which typically presents with advanced stage (FIGO III and IV) disease. For these women US confirms the presence of a complex adnexal mass, ascites and/or metastatic deposits in the peritoneum or viscera.

When there are no features of peritoneal dissemination, assessment of the pelvic mass relies upon detailed morphological assessment using US, which is more reliable than Doppler US measurements in defining their nature. The early promise of Doppler US has not been realised[1]. A variety of morphological scoring systems are described[2,3]. Another scoring system combines US and CA-125 data to produce the risk of malignancy index (RMI). There is overlap in the scores of benign lesions such as dermoid tumours, inflammatory masses and endometriomas, which may be managed non-operatively, and malignancy. For these indeterminate masses MR imaging is superior to US in characterisation[4,5]. With MR imaging dermoid tumours or endometriomas can be confidently characterised using fat suppression sequences and by recognition of the appearances of haemorrhage. The importance of MR imaging is in averting unnecessary intervention for complex benign lesions.

At other end of the spectrum, with overt and disseminated malignancy there is little doubt about the nature of the mass, and most women proceed to radical cytoreductive surgery. For women unfit for or beyond the scope of surgery, or with a history of a cancer whose metastases may mimic ovarian cancer (e.g. breast and GI tract), CT-guided biopsy provides a simple alternative to limited surgery or laparoscopy for obtaining a confident histological diagnosis[6]. Biopsy of omental cake, peritoneal or adnexal mass is possible.

After surgery for ovarian cancer CT is widely used for monitoring chemotherapy, but this stems more from its use in clinical trials as a reproducible modality than from any evidence base. Another situation in which indeterminate lesions cause clinical concern is when the baseline post-surgical pre-chemotherapy examination reveals a pelvic mass but the surgeon reports complete resection. Here, resolution of uncertainty should be in the forum of a specialist multidisciplinary team meeting. Imaging has a role when management options would be altered by clarifying the nature of the mass. The distinction to be made is between residual cancer and a treatment complication[7]. The main imaging options for further assessment are MR imaging to distinguish haematoma from solid tumour and transvaginal US, which allows aspiration if infection is a clinical concern.

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