Case 98 Breast screening

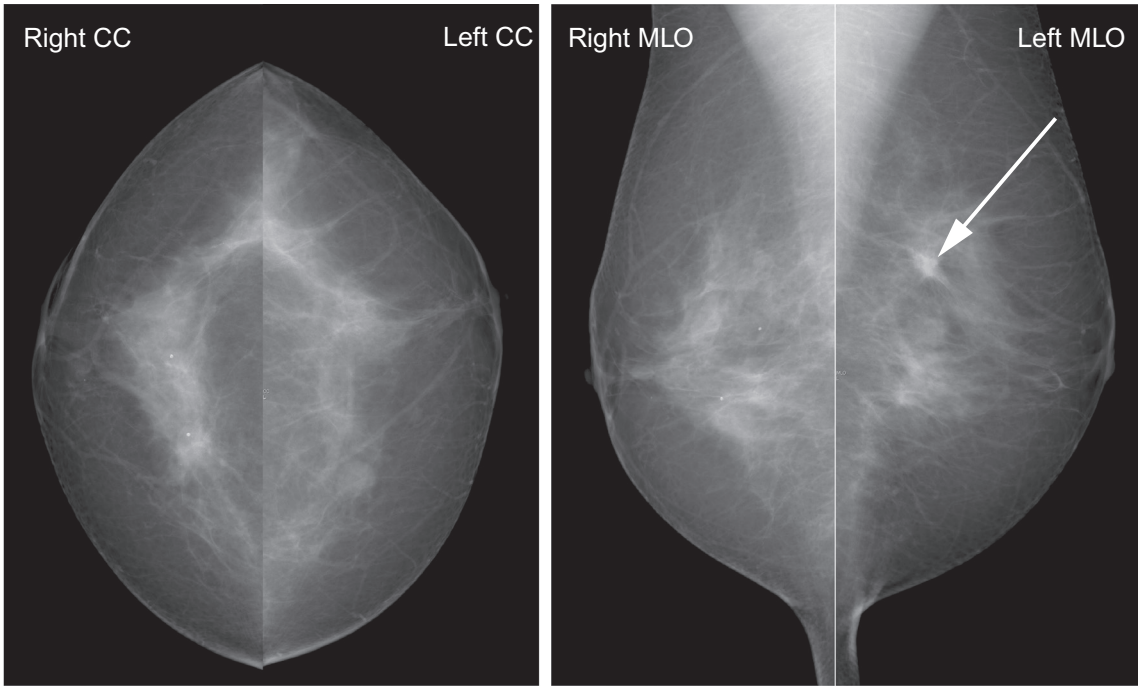

Figure 98.1

A 55-year-old woman who worked as a ward clerk on a surgical ward attended her second routine screening mammogram. She was otherwise asymptomatic, with no family history of breast disease. Her only past history was of a cholecystectomy following an episode of acute cholecystitis 5 years ago.

She was recalled a week later for further investigation, at which time she was told that there was an abnormality in the left breast on the mammogram. The mammogram shows a spiculated lesion with microcalcification in the upper outer quadrant of the left breast best seen on the mediolateral oblique (MLO) view (white arrow) (Fig. 98.1).

The MLO view images the breast obliquely with the pectoralis major visible obliquely from above; the craniocaudal (CC) view images the breast from above.

What further investigation is required to prove the diagnosis?

Any breast lump requires a triple assessment comprising clinical examination, radiological imaging and biopsy. On this occasion there was no palpable lesion and no palpable lymphadenopathy. Needle core biopsy was performed using ultrasound guidance and confirmed carcinoma.

Outline the surgical management

The tumour is excised, either by wide local excision or, if the tumour is large and central, by mastectomy. In this case the tumour was impalpable and a decision was made to perform wide local excision. The tumour position was identified radiologically and a guide wire placed in the centre under ultrasound or mammographic control. Blue dye and radioisotope were injected into the tumour at the same time. A wide excision of the tissue at the tip of the guide wire was then performed with minimal delay. Through a separate axillary incision, the sentinel lymph nodes were identified by virtue of taking up the blue dye and radioisotope, and excised. In this case the axillary nodes were found to be free of tumour; the primary itself was a 1.5 cm diameter, well differentiated, invasive duct carcinoma.

How would you determine what adjuvant therapy is appropriate for this patient?

The tumour needs to be formally staged to exclude distant metastatic spread. This involves excluding lung, liver (CT scans of the chest and abdomen) and bone (isotope bone scan) metastases. A full blood count may indicate marrow involvement and abnormal liver function tests (particularly raised alkaline phosphatase) may indicate early liver involvement.

Staging investigations failed to detect evidence of distant metastases. What is the TNM stage of the tumour and what adjuvant treatment is appropriate?

The tumour was 1.5 cm in diameter (T1), without nodal (N0) or distant metastatic (M0) spread, hence stage T1N0M0. In the absence of distant spread, local radiotherapy is the only adjuvant therapy required, and this will reduce the risk of local recurrence.

What is the prognosis of such a screen-detected tumour?

Tumours that are asymptomatic when detected by screening generally have a better prognosis than tumours that present with symptoms, possibly because they represent a slower growing lesion. In addition small tumours, well differentiated tumours and tumours without axillary or distant spread all have better prognosis. This woman has a 95% 10-year survival likelihood.

Breast cancer, like cervical cancer, is the subject of a national screening programme. What are the requirements for an effective screening programme for a given condition?

Effective screening for a condition like breast cancer using a specific test, such as mammography, has the following prerequisites:

- The condition, if untreated, is sufficiently serious to warrant its prevention.
- The natural history of the condition should be understood.
- The condition has a recognizable early stage.
- Effective treatment is available.
- Treatment at an early stage could improve the prognosis, and is of more benefit than treatment started later in the disease.
- The screening test is simple, reliable and acceptable to the patient.
- The screening test should have minimal false-positive and false-negative outcomes (i.e. it should be both sensitive and specific).