

Year Three Breast Surgery Workbook

University of Leicester Medical School

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Contributors

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Case 1

Aisha Mahmood, a 29-year-old woman, attends the Symptomatic Breast Clinic with a 4-day history of increasing pain in her right breast. She delivered her first child 3 weeks ago and is breastfeeding. She reports feeling generally unwell and has found feeding from the affected breast increasingly painful. She has no significant past medical history, takes no regular medication, and has no known drug allergies.

On examination she appears generally well. Her temperature is 37.7°C, pulse 93/minute, blood pressure 118/74 mmHg, respiratory rate 16/minute, and oxygen saturations 99% on room air.

The patient is anxious about having her breast examined.

a) What steps must be taken before performing a sensitive examination?

Breast examination demonstrates an area of erythema, warmth, and tenderness over the central and lower pole of the right breast. No discrete mass or fluctuance is palpable. The left breast is normal.



b) State the most likely diagnosis?

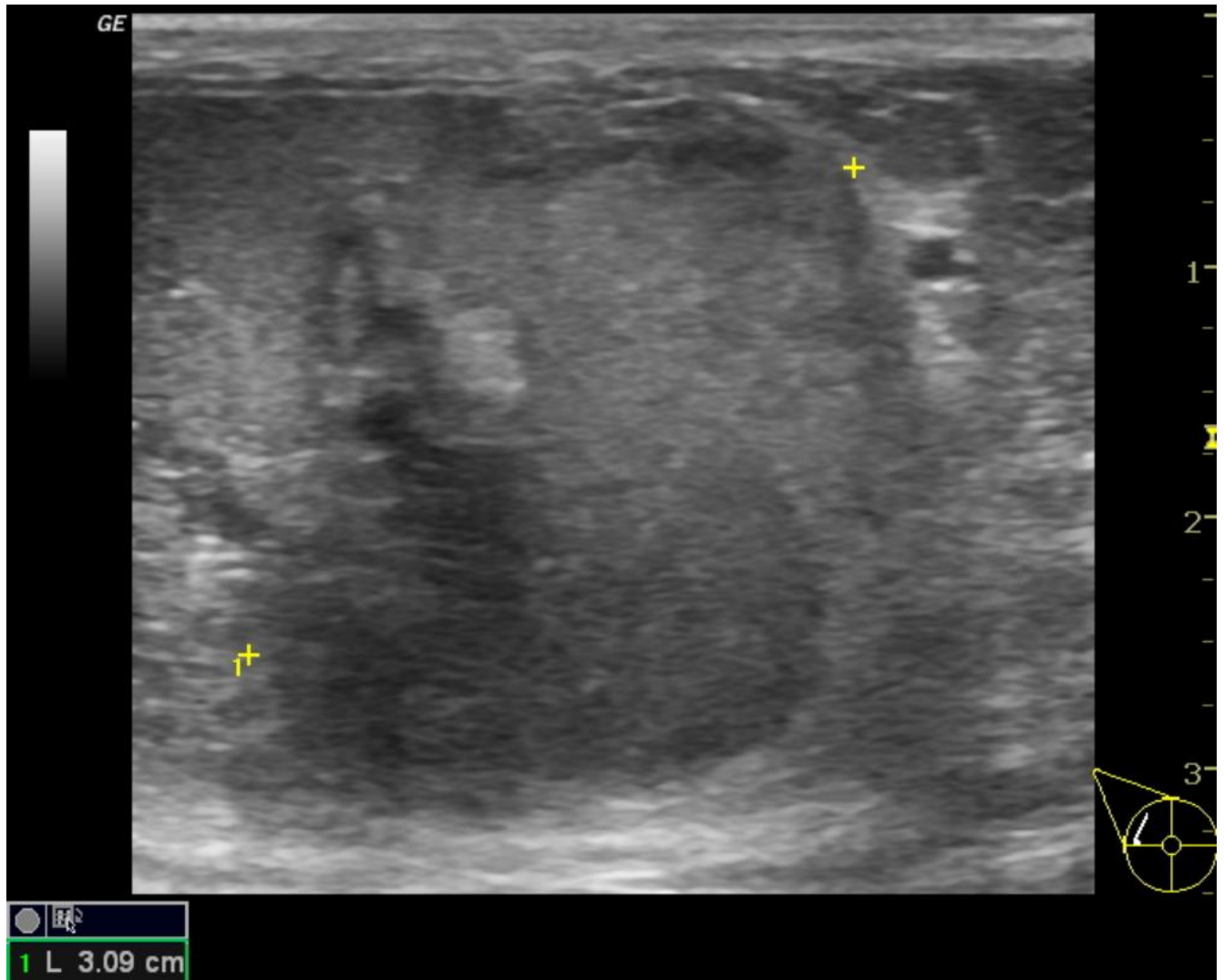
c) State 4 conservative management steps in the management of this patient.

Despite appropriate conservative treatment, over the following 48 hours Aisha's breast pain worsens, and presents to the surgical admissions unit with a tender swelling in the right breast.

d) State two clinical features that distinguish mastitis from a breast abscess?

e) State a definitive investigation to confirm the diagnosis.

Targeted ultrasound of the right breast demonstrates a $4.2 \times 2.8 \times 3.6$ cm thick-walled, irregular hypoechoic collection containing heterogeneous internal echoes and debris, with surrounding inflammatory change. The appearances are consistent with a breast abscess.



f) State three management steps in the treatment of this patient.

g) Aisha is keen to continue breast feeding her baby. What advice should be given to her regarding breastfeeding?

Case 2

Sarah Cook, a 39-year-old woman, attends the breast clinic after noticing a lump in her right breast 3 weeks ago. She first noticed it while showering. The lump is mildly tender, and she thinks it may have become more noticeable in the week before her last menstrual period. She has no previous history of breast disease and is otherwise well.

a) State 5 further points to obtain from the history to develop a differential diagnosis.

b) State 3 differential diagnoses for a breast lump for this patient.

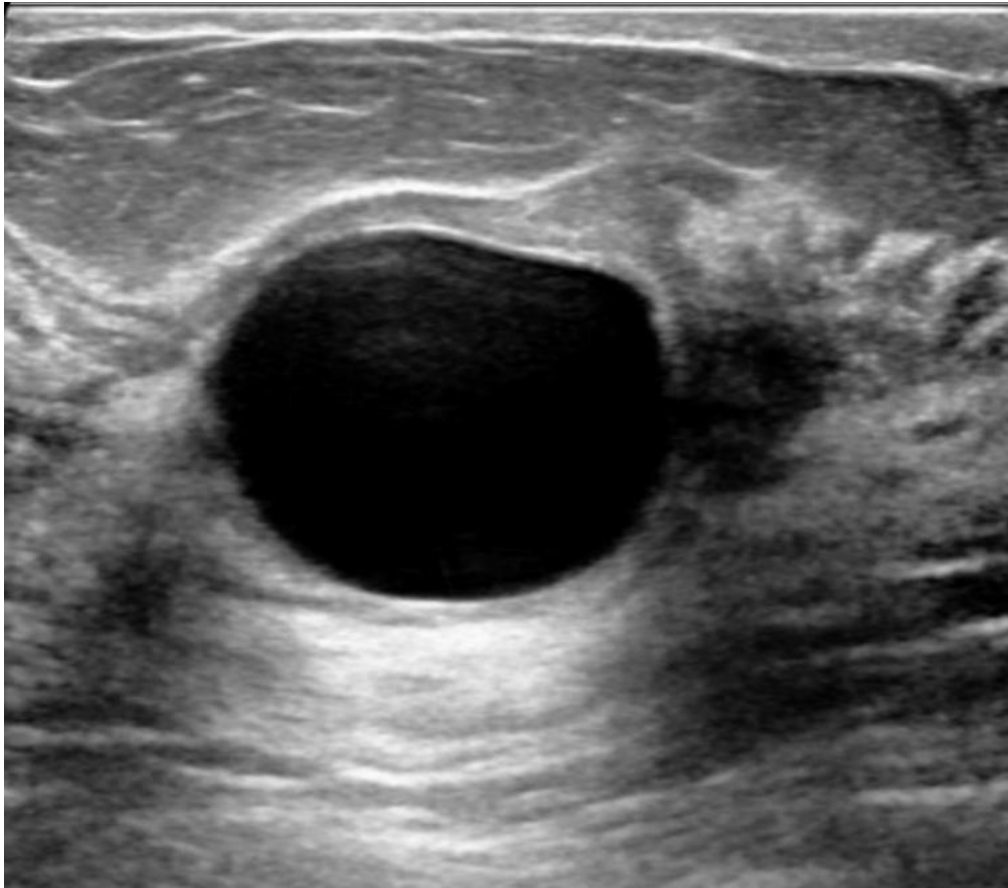
On examination there is a 3 cm, smooth, well-defined and mobile lump in the upper outer quadrant of the right breast. It is mildly tender. There are no overlying skin or nipple changes and no palpable axillary lymphadenopathy.

c) State 6 aspects of the examination that make a benign cause more likely. Justify your answer.

d) State 5 breast examination features (not in this patient) that would be concerning for breast malignancy.

e) State a definitive investigation to confirm the diagnosis **in this patient**.

Sarah undergoes a ultrasound examination of the right breast, demonstrating a 3 cm simple breast cyst.



e) Why has Sarah not undergone a mammogram?

f) State two management steps for this patient.

As the lump is uncomfortable, aspiration is performed. Clear fluid is obtained and the lump completely disappears following aspiration.

g) What has aspiration achieved in this patient?

Case 3

Rachel Collingham, a 43-year-old woman, visits her GP after noticing a lump in her left breast approximately 4 weeks ago. The lump is painless and has persisted throughout her menstrual cycle. She has not noticed any change in the overlying skin and has no previous history of breast disease. She is otherwise well.

On examination there is a 3 cm firm, irregular lump in the upper outer quadrant of the left breast. It is poorly mobile in relation to the surrounding breast tissue. There are no obvious skin or nipple changes and no palpable axillary lymphadenopathy.

Rachel is referred to the suspected cancer pathway (previously known as the 2-week-wait or 2WW pathway) symptomatic breast clinic.

a) State three criteria for referral onto the suspected cancer pathway for breast cancer?

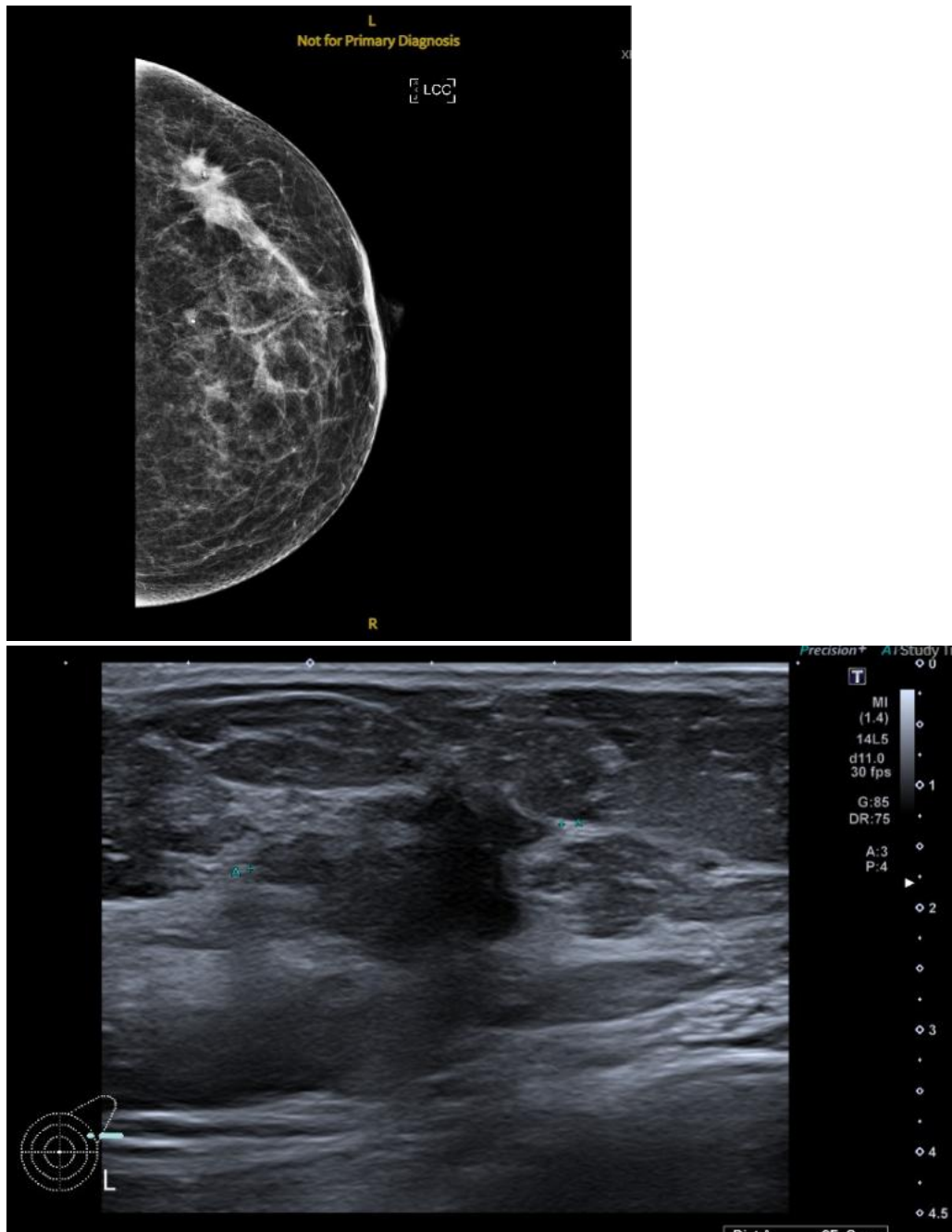
Rachel is assessed in the symptomatic breast clinic and undergoes triple assessment.

b) What is triple assessment?

c) State the first line diagnostic breast imaging for this patient.

d) Why is breast ultrasound not appropriate as a first line investigation in this patient? Justify your answer.

Bilateral mammography demonstrates a 28 mm irregular spiculated mass in the upper outer quadrant of the left breast. Targeted ultrasound demonstrates a corresponding 25 mm irregular solid lesion. The appearances are suspicious for malignancy.



e) Which mode of biopsy is most appropriate to obtain a definitive diagnosis?

An ultrasound-guided core biopsy is performed. Before leaving the clinic, Rachel is informed that the imaging findings are concerning and that the biopsy result is required before a diagnosis can be confirmed. She is given an appointment to return once the results are available.

The biopsy subsequently demonstrates a grade 2 invasive ductal carcinoma, ER positive and HER2 negative. The imaging and pathology results are reviewed at the breast multidisciplinary team (MDT) meeting.

e) What is the role of the breast MDT and which healthcare professionals contribute to it?

f) Invasive ductal carcinoma is the most common type of invasive breast cancer. In order of frequency, state 3 further types of invasive breast cancer.

Rachel returns to the results clinic where she is seen by the breast surgeon with a breast care specialist nurse present. She is informed of the diagnosis and that the MDT has recommended a wide local excision of her breast lump and sentinel lymph node biopsy (SLNB) rather than mastectomy and SLNB.

g) From a patients perspective, state 2 differences between mastectomy and wide local excision.

h) What is a sentinel lymph node biopsy and what is the rationale for its use?

Case 4

Mary Woods, a 56-year-old woman, underwent a wide local excision and sentinel lymph node biopsy for breast cancer 8 days ago. She presents out of hours to the Surgical Assessment Unit with a 2-day history of increasing pain and redness around the breast wound. She has noticed discharge from the wound and reports feeling increasingly unwell.

On examination her temperature is 38.4°C, pulse 88/minute, blood pressure 118/72 mmHg, respiratory rate 18/minute and oxygen saturations 98% on room air. The breast wound is erythematous, warm and tender.



Initial blood tests are taken and are reported as below:

	Result	Reference range
Haemoglobin	128 g/L	115–165 g/L
White cell count	$15.2 \times 10^9/\text{L}$	$4.0\text{--}11.0 \times 10^9/\text{L}$
Neutrophils	$12.8 \times 10^9/\text{L}$	$2.0\text{--}7.5 \times 10^9/\text{L}$
CRP	116 mg/L	<5 mg/L

a) State the most likely diagnosis.

b) State 5 initial management steps for this patient.

Mary is admitted by the on-call surgical team and commenced on intravenous antibiotics.

The breast team reviews her the following morning. She remains pyrexial, and the wound remains erythematous and tender with a small amount of purulent discharge.

c) State a definitive breast investigation. Justify your answer.

Breast ultrasound demonstrates a 5.5 cm complex fluid collection deep to the surgical wound, containing internal echoes and debris. Ultrasound-guided aspiration is attempted, but only a few milliliters of thick fluid can be aspirated. Surgical drainage versus antibiotics is considered.

d) What factors would determine whether this could be managed conservatively with antibiotics, by opening and washing out the wound on the ward, or by formal washout under general anaesthesia?

As the collection is moderate in size and has not been adequately drained by aspiration, the breast team decides that further drainage is required. Part of the existing surgical wound is opened at the bedside, allowing the infected fluid to drain, and the cavity is washed out. This is successfully completed and well tolerated by Mary at the bedside. The wound is left partially open to allow continued drainage and is managed with regular dressings.

Mary's clinical condition improves following drainage and continued antibiotic treatment.

f) Why was drainage important despite Mary already receiving intravenous antibiotics?

Curriculum Mapping

Curriculum requirement	Case(s)	Where addressed
Common breast conditions resulting in lumps, tenderness/pain and nipple discharge	1, 2, 3	Pain/tenderness in Case 1; breast lumps and differentials in Cases 2–3; nipple discharge included within the breast history in Case 2.
Breast abscess	1	Recognition, ultrasound and drainage.
Mastitis	1	Presentation and initial management.
Breast cancer	3	Suspicious lump, tissue diagnosis, MDT and basic surgical management.
Breast cysts	2	Ultrasound diagnosis and aspiration of a symptomatic simple cyst.
Surgical site infection	4	Postoperative infection, admission/IV antibiotics, imaging and source control.
Referral and diagnostic pathways for breast cancer	3	Suspected cancer pathway, triple assessment, imaging, core biopsy and MDT.
Consent for sensitive examinations	1	Considerations before breast examination; applies to subsequent breast examinations.

