CASE REPORT

Breast pseudoaneurysm arising from core needle biopsy should be left well alone

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SUMMARY

A 45-year-old woman previously fit and well, developed a pseudoaneurysm of the breast following core needle biopsy. She was ultimately reassured and discharged without further intervention. Pseudoaneurysm is a rare complication of core needle biopsy which, contrary to previously published cases, can be managed conservatively.

BACKGROUND

Core needle biopsy (CNB) of breast lesions is commonly performed and the number of procedures being carried out is increasing as screening programmes expand. It is now considered the gold standard for obtaining a definitive diagnosis in the symptomatic service. CNB is generally well tolerated; haematoma is an uncommon complication and pseudoaneurysm (PA) is extremely rare. PA occurs when all three layers of the artery wall are disrupted and the resulting haematoma is encased by local structures.¹ Those at greatest risk include those with atherosclerosis, those on anticoagulants, females and the elderly.² PA of the breast can occur spontaneously in hypertensive individuals and occasionally following blunt trauma.³ PA has been associated with both stereotactic and ultrasound guided procedures where both 14G and 18G needles have been used.⁴⁻⁶ Twenty cases of PA have been described in the literature and management varied from case to case. Here, we describe a patient who was diagnosed with a PA following CNB and subsequently reassured and discharged without further intervention.

CASE PRESENTATION

A previously well 45-year-old woman presented to the breast unit of a local district general hospital for routine surveillance mammography. She had

Figure 2 Colour Doppler image illustrating the pseudoaneurysm with no external compression applied.

previously undergone a left-sided wide local excision and radiotherapy for ductal carcinoma in situ of the left breast. She had not noticed any new lumps herself and denied any skin or nipple changes. Clinical examination was unremarkable and no lymphadenopathy was found. She had no other relevant medical history and did not take any regular medications. She worked as a teaching assistant and had no family history of note.

INVESTIGATIONS

Mammography confirmed the presence of two well-defined masses in the right breast (12 mm and 8 mm in diameter). Small cysts were also seen throughout the right breast. The larger lesion, in the lower outer quadrant, was biopsied several times without complication. However, when the smaller lesion, in the upper outer quadrant, was biopsied using a 14G cutting needle, brisk bleeding was encountered after the first core. Firm compression was applied for 10 min until haemostasis was achieved. Histology of the larger lesion confirmed the diagnosis of fibroadenoma. Histology of the smaller lesion was non-diagnostic; only fibro-fatty tissue and vessel wall were seen. The patient represented 2 weeks later for reassessment and repeat biopsy. Repeat biopsies were performed without complication and provided the diagnosis of fibroadenoma. Ultrasound demonstrated a haematoma in the upper outer quadrant of the right breast at the site of the initial biopsy. A repeat scan was carried out 4 days later; the presence of an aneurysmal sac measuring 9 mm by 6 mm was confirmed. While the sac was partially thrombosed, colour Doppler signal was clearly seen within most of the sac (see [figure 1](#), [figure 2](#) and [figure 3](#)).

OUTCOME AND FOLLOW-UP

Although the patient was asymptomatic, the radiology team were unsure how best to proceed

Figure 1 Ultrasound image illustrating the affected vessel.

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Figure 3 Colour Doppler image illustrating the pseudoaneurysm with compression applied.

and so the case was discussed at the next breast multidisciplinary team (MDT) meeting. A number of management options were explored. These included conservative management, follow-up with regular imaging or a definitive surgical or interventional procedure. After a lengthy discussion with the patient, who was a sensible and health-conscious woman, it was agreed that the lesion would be managed conservatively. It was decided further imaging would not be carried out unless the patient was particularly concerned or she presented with pain or bruising (she was educated on the potential complications of a PA). It was felt the risks of a surgical or interventional procedure outweighed the risks of a PA complication (which the breast MDT felt was negligible). We were reassured by the fact that the patient would be returning for repeat imaging in the not too distant future as part of the national screening programme.

DISCUSSION

Management of previously documented cases

- ▶ External compression, both immediate and delayed, has generally not been successful.^{5 6}
- ▶ Percutaneous treatment with alcohol is a reasonable and safe option for patients who wish to avoid more invasive treatment.^{7 8}
- ▶ Endovascular techniques.⁵
- ▶ Surgical excision.^{9 10}

Proposed management

Dixon *et al* suggest the monitoring of PA using ultrasound may negate the need for invasive treatment.³ El Khoury *et al* suggest radiological techniques are more successful than sonographically guided compression and surgery, and that simple monitoring may offer the chance of spontaneous occlusion without the need for invasive intervention.¹¹ To our knowledge, there are

Learning points

- ▶ Breast pseudoaneurysm (PA) is a rare complication of CNB.
- ▶ If a patient experiences brisk bleeding post CNB immediate pressure should be applied until haemostasis is achieved.
- ▶ If PA is suspected colour Doppler ultrasound should be used as a first-line investigation.
- ▶ In the absence of risk factors, we would advise a conservative approach to management.

no formal guidelines for the management of breast PA following CNB. Furthermore, the literature does not list a single case where PA of the breast has resulted in morbidity or mortality. As such, since our patient was not on anticoagulant therapy, we felt it was safe to reassure her and discharge her.

Contributors This case report was written by TR. It was edited following advice from MC-B. There were no further contributors.

Competing interests None declared.

Patient consent Obtained.

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