

Intra-thoracic mass on CT in a breast cancer patient

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CASE REPORT

A 67-year-old woman with an irresectable local recurrence of breast cancer received first-line palliative endocrine treatment. Two years previously, her left-sided primary breast tumour (T₄N₀M₀, oestrogen positive, progesterone and Her-2-neu negative) was treated with neoadjuvant chemotherapy, mastectomy, adjuvant radiotherapy, and endocrine therapy (tamoxifen). However, she developed a local recurrence, which proved to be irresectable. The tumour had grown from the thoracic wall towards the mediastinum (*figure 1*). Palliative treatment with exemestane, an aromatase inhibitor, was started. Throughout the first months of treatment with exemestane, the patient complained of progressive left-sided chest pain and necrosis of the tumour (ulcer). No swelling was present, nor were there any other symptoms. During follow-up, three months after starting exemestane, the following mass was seen on CT imaging (*figure 2*).

WHAT IS YOUR DIAGNOSIS?

See page 286 for the answer to this photo quiz

Figure 1. Transversal CT image showing an extensive local recurrence of the breast tumour

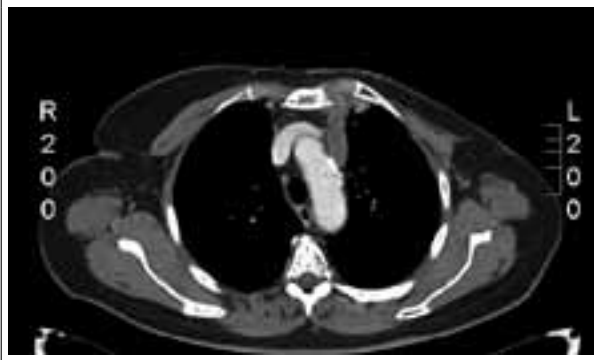
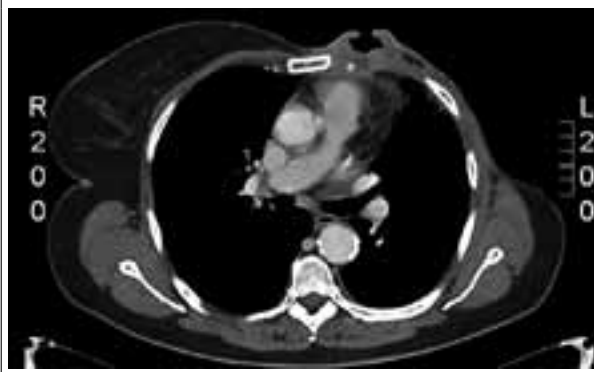


Figure 2. Transversal CT image showing the pseudoaneurysm on the base of the ulcerative recurrence



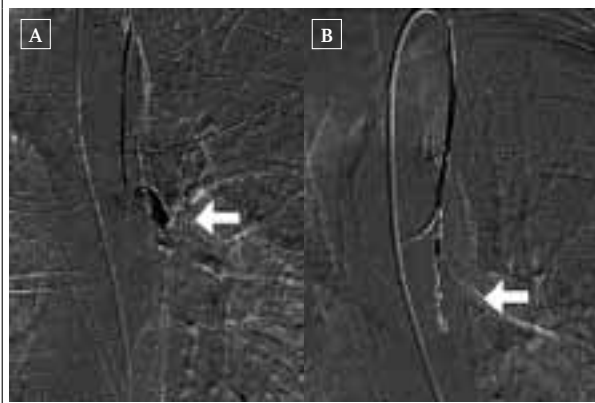
DIAGNOSIS

A contrast-enhanced CT scan, three months after start of exemestane, showed a newly formed pseudoaneurysm of the left internal mammary artery (*figure 2*) and progressive tumour growth. Pseudoaneurysms are vascular anomalies; the continuity of all three layers of the arterial wall is disrupted and blood flows into a confined cavity. The connection with the vessel remains, causing a patent flow in the extravascular space. In this case, the diagnosis was already confirmed with the contrast CT showing contrast enhancement in the pseudoaneurysm, but in general pseudoaneurysms of the breast are diagnosed by Doppler ultrasound. Colour Doppler ultrasound can be used to show blood filling of the cavity in phase with the cardiac cycle.¹ An angiogram shows the internal mammary artery and pseudoaneurysm of the described patient in more detail (*figure 3*).

The majority of pseudoaneurysms occur after iatrogenic trauma of the vessels. In general pseudoaneurysms are rather common. Most occur in the groin, aorta, pulmonary arteries and visceral arteries (coeliac branches, hepatic artery and splenic artery). With the increase of angiographic procedures the incidence is rising.² Pseudoaneurysms of the breast are rare. Most pseudoaneurysms in the breast presented in the literature occurred following ultrasound-guided needle biopsy procedures.³ Incidentally, spontaneous pseudoaneurysm is reported, mostly in women with hypertensive disease or after blunt trauma.¹ However, in our case most likely tumour necrosis adjacent to the mammary artery or tumour growth into the vessel wall caused disruption of the arterial wall.

A pseudoaneurysm may be asymptomatic, but some can present with pain (mass effect) or as a palpable pulsating mass. If untreated serious complications such as enlargement or rupture, pressure on adjacent structures, pressure necrosis of overlying skin and distal thromboembolism may occur. Therefore, pseudoaneurysms are considered a medical emergency and are treated with either percutaneous embolisation or surgical removal.⁴ Some pseudoaneurysms of the breast can successfully be treated by external, ultrasound-guided compression.⁵ This patient was treated with coiling of the left internal mammary artery followed by palliative chest wall irradiation (*figure 3*).

Figure 3. Angiogram before coiling of the pseudoaneurysm (A). The contrast fills both the vessels and the pseudoaneurysm (white arrow). After coiling the artery (B), the pseudoaneurysm is no longer filled with contrast and is no longer visible



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