

Atypical benign lesion of the breast

Published on 17.04.2017

DOI: 10.1594/EURORAD/CASE.14579

ISSN: 1563-4086

Section: Breast imaging

Area of Interest: Breast

Procedure: Diagnostic procedure

Imaging Technique: Mammography

Imaging Technique: Ultrasound

Special Focus: Neoplasia Case Type: Clinical Cases

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Patient: 43 years, female

Clinical History:

The patient presented with a growing mass in the right breast. It was a biopsy-proven fibroadenoma diagnosed 8 months ago elsewhere. Core biopsy was repeated because of a marked increase in volume and demonstrated a fibroadenoma. At that moment surgery was contra-indicated because of infectious problems.

Imaging Findings:

Ultrasound revealed a well-defined, heterogeneous, hyporeflective solid mass with horizontal orientation at 9 o'clock in the right breast (measurements 38 x 45 x 19 mm). 4 months later, ultrasound was repeated and revealed significant volume increase of the biopsy-proven fibro-adenoma (measurements 65 x 55 x 29 mm) with slit-like hypoechoic areas inside the mass suggestive of phyllodes tumour.

On mammography the lesion appeared to be a large, sharply defined mass in the right breast with dimensions of 7.5 x 5.2 cm.

Surgical excision was performed. Histopathology revealed a phyllodes tumour, most likely originated from an adjacent fibroadenoma, without features of malignancy.

Discussion:

A phyllodes tumour is a fibro-epithelial tumour with cyst-like spaces and a leaf-like appearance. It is also known as cystosarcoma phyllodes (Johannes Muller – 1838). [1] The name originates from Phyllon (Gr), which means "leaf". Clinically, patients complain of a large mass that shows a painless rapid growth within weeks. Clinical breast examination shows a freely movable and sharply demarcated mass. The aetiology is unknown. It represents 0.3-1% of all breast neoplasms, almost exclusively in women between 40 and 60 years of age. [2] It presents with a large, heterogeneous, sharply demarcated solid mass with round or cleft-like cystic spaces. This is not specific and is often indistinguishable of a fibroadenoma. If there is an interval enlargement, then a core biopsy is indicated.

There are three subtypes, depending on four histological parameters; degree of stromal cellularity, cellular atypia, mitotic count/activity and the nature of the tumour borders. [3] The benign subtype (85-90%) has mildly increased stromal cellularity, minimal nuclear atypia, mitoses of $\leq 4/10$ high-power fields (HPFs) and pushing borders. The borderline subtype has moderate stromal cellularity, moderate degree of cellular atypia, mitoses of 5/10-10/10 high-power fields (HPFs) and irregular margins. The malignant subtype (10-15%) has marked stromal cellularity, high degree of cellular atypia, mitoses of $>10/10$ high-power fields (HPFs) and permeative margins. [3] However, it's

often very difficult to differentiate benign and malignant tumours from core biopsy specimens. Mammography and ultrasound are certainly unreliable in differentiation.

The treatment is a wide local excision or a mastectomy if the lesion is very large. In contrast to the benign subtype, the prognosis of the malignant subtype is poorly defined. There is a local recurrence in 10-40% and up to 20% of the patients have haematogenous metastasis (bone, brain, lungs and lymph nodes). [4] The efficacy of adjuvant chemotherapy, hormonal and radiation therapy is still not clear. [2]

In conclusion, phyllodes tumours can be misdiagnosed as fibroadenomas on core biopsies. Phyllodes tumours should be considered when there are large masses or rapidly enlarging masses. Moreover, if there is a diagnosis of phyllodes tumour on core biopsy, it is still very difficult to differentiate between benign and malignant tumours. Therefore an excision is indicated if breast masses grows persistently regardless of the biopsy results.

Differential Diagnosis List: Benign phyllodes tumour, most likely originating from an adjacent fibroadenoma., Juvenile fibroadenoma, Giant fibroadenoma

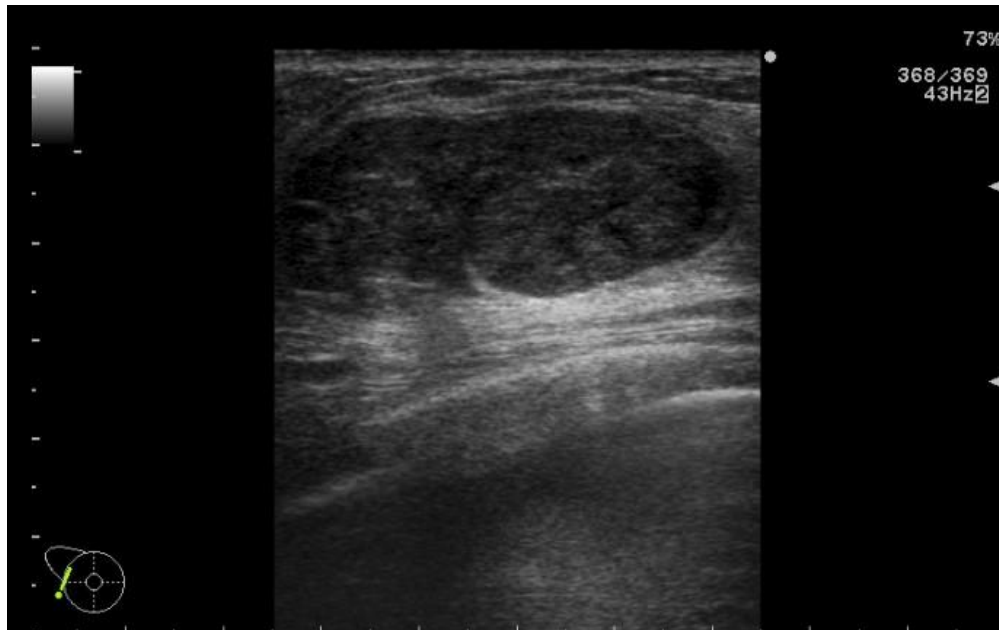
Final Diagnosis: Benign phyllodes tumour, most likely originating from an adjacent fibroadenoma.

References:

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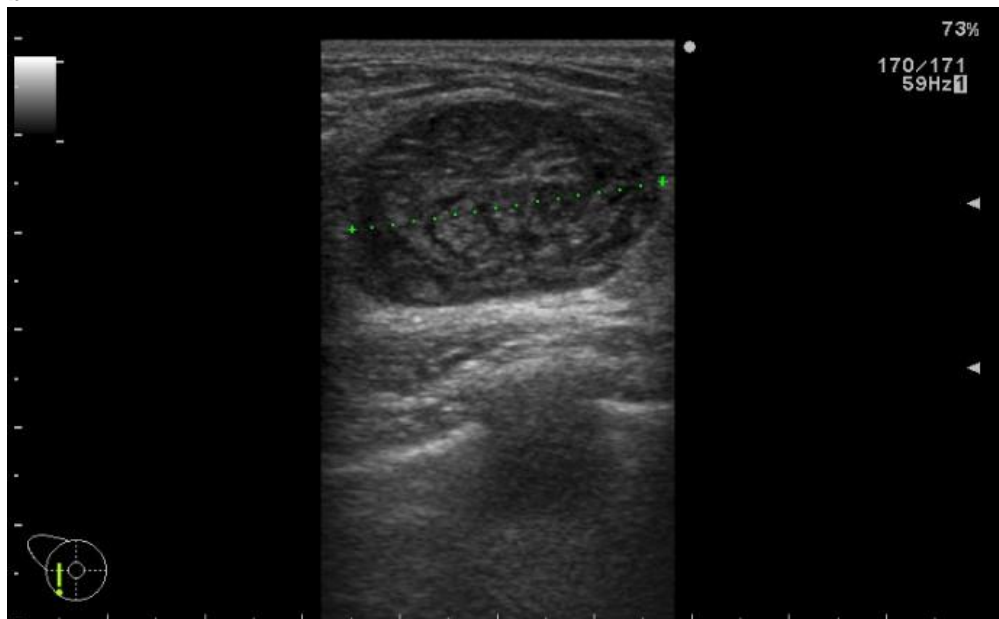
Figure 1

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Description: Well-defined, heterogeneous, hyporeflective solid mass with horizontal orientation at 9 o'clock in the right breast (measurements 38 x 45 x 19 mm). **Origin:** University Hospitals Leuven, Belgium

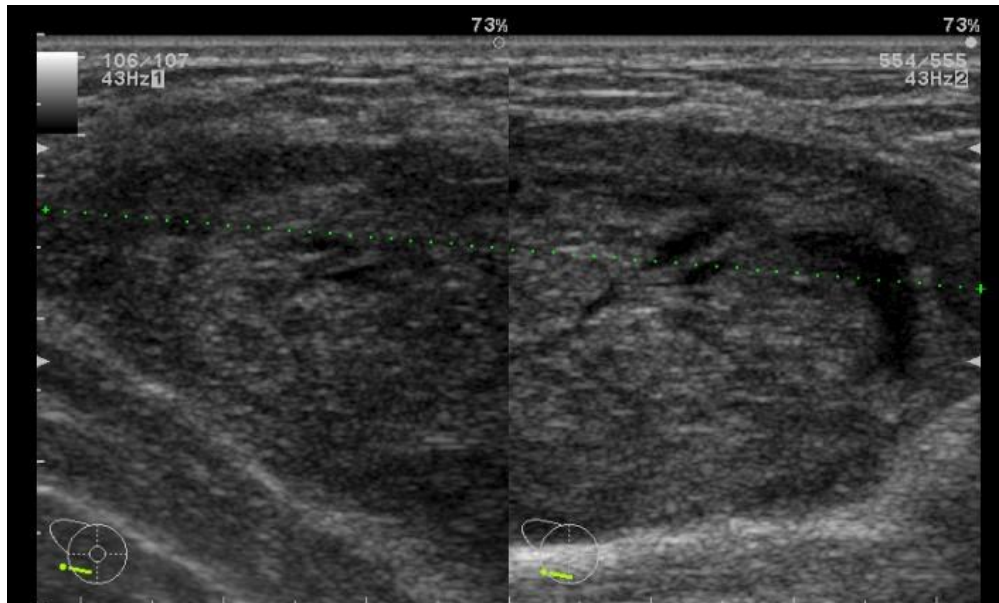
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Description: Well-defined, heterogeneous, hyporeflective solid mass with horizontal orientation at 9 o'clock in the right breast (measurements 38 x 45 x 19 mm). **Origin:** University Hospitals Leuven, Belgium

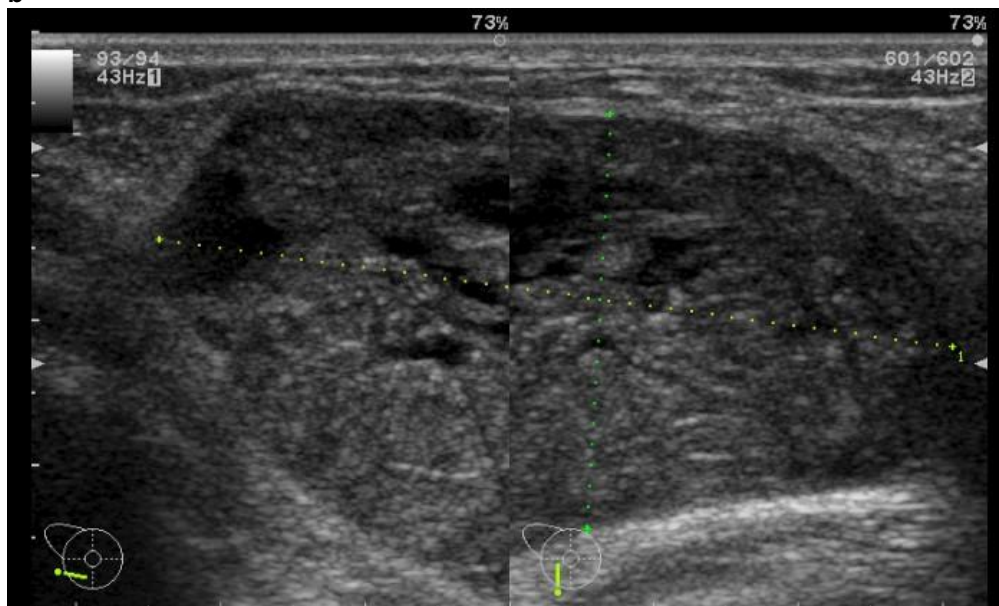
Figure 2

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Description: Significant volume increase of the biopsy-proven fibro-adenoma (measurements 65 x 55 x 29 mm) with slit-like hypoechoic areas inside the mass suggestive of phyllodes tumour. **Origin:** University Hospitals Leuven, Belgium

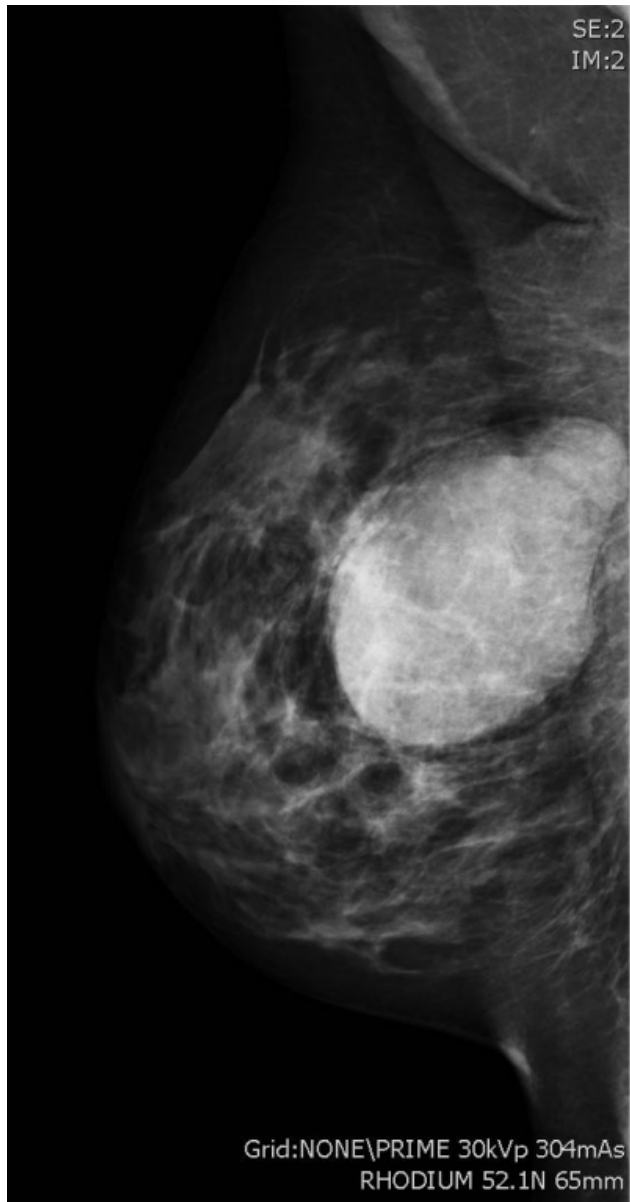
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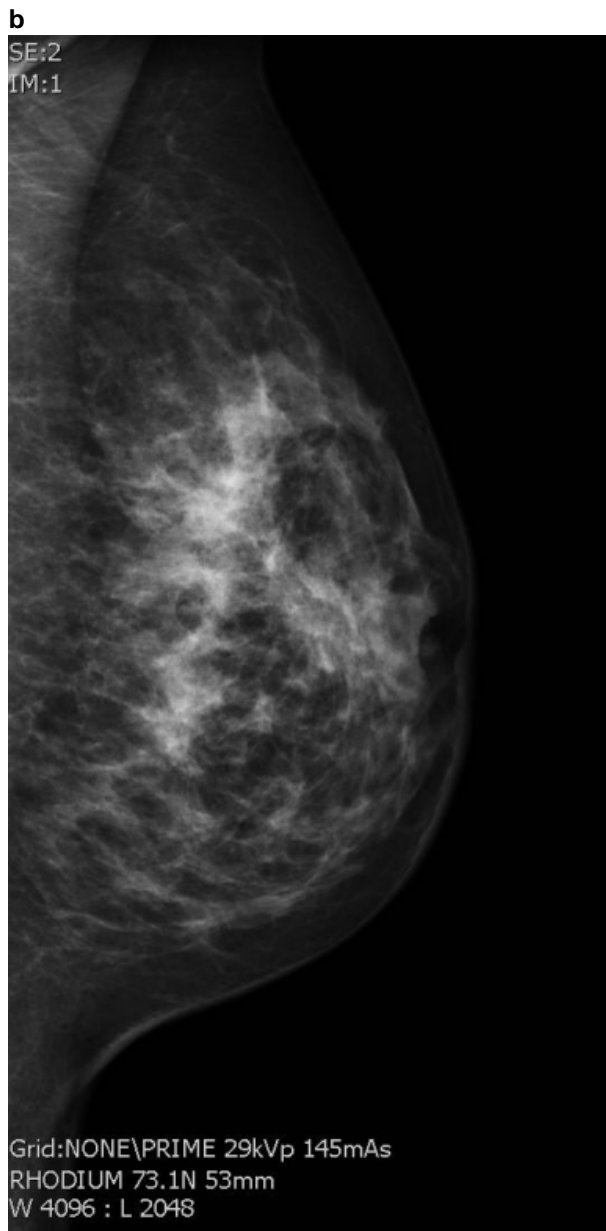
Description: Significant volume increase of the biopsy-proven fibro-adenoma (measurements 65 x 55 x 29 mm) with slit-like hypoechoic areas inside the mass suggestive of phyllodes tumour. **Origin:** University Hospitals Leuven, Belgium

Figure 3

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Description: Large, sharply defined mass in the right breast with dimensions of 7.5 x 5.2 cm. **Origin:** University Hospitals Leuven, Belgium



Description: Normal left breast. **Origin:** University Hospitals Leuven, Belgium