

Mammary fibromatosis: Case report

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Section: Breast imaging

Area of Interest: Breast

Procedure: Imaging sequences

Procedure: Observer performance

Procedure: Biopsy

Imaging Technique: Mammography

Imaging Technique: Ultrasound

Imaging Technique: MR

Imaging Technique: MR-Diffusion/Perfusion

Special Focus: Dysplasias Case Type: Clinical Cases

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Patient: 50 years, female

Clinical History:

A middle-aged patient complaining of a palpable nodule in the upper inner quadrant of the right breast for three months. She denied previous diseases and family history of breast cancer.

Imaging Findings:

Mammography revealed a dense and irregular nodule with indistinct contours in the upper inner quadrant of the right breast, in the posterior third, with measures of 2.9x2.7 cm. It was classified as a BI-RADS 4C.

On ultrasound, it presented as a solid, irregular and heterogeneous nodule, located in the upper inner quadrant of the right breast, seen at 2 o'clock position, measuring 2.8 x 2.0 x 1.2 cm and 5.0 cm distant from the nipple.

Doppler and elastography images were not performed.

A core biopsy guided by ultrasound was performed by removing 10 fragments. The result of the anatomopathological examination was of fusocellular proliferation presenting discrete nuclear atypia with rare mitoses.

The mammary magnetic resonance revealed hypointense nodule in T1 sequence that appeared heterogeneous in T2 due to bleeding after a core-biopsy procedure. The nodule presented restriction to diffusion, and had irregular contours. It was 0.9 cm distant from the pectoralis muscle.

Discussion:

Background:

Mammary desmoid fibromatosis is a very rare locally aggressive benign neoplasm, accounting for about 0.2% of benign breast tumours. It originates from the fibroblasts and myofibroblasts of the breast parenchyma [1]. It was first described in 1832, and the name desmoid comes from the Greek desmos (tendon) [2]. It is derived from muscle-aponeurotic structures.

The aetiology of these lesions remains uncertain, but genetic mutations, trauma and hormonal factors have been

mentioned as a possibility [3]. It has no predilection for age, family history or exposure factors, although certain cases occur after trauma [4].

Clinical Perspective:

It usually appears as a painless mass, always palpable and often mimicking cancer, and may also show retraction of the skin. The growth is slow and progressive and it can become very large. It may be adhered to the chest wall [5]. The lesion usually develops in one of the quadrants of the breast and the retroareolar location is uncommon [2].

Imaging Perspective:

The lesion appears on mammography generally as a spiculated mass, but may appear as an asymmetry, architectural distortion of the parenchyma or well-defined lobulated mass.

CT and MRI are also used to assess tissue infiltration of adjacent soft tissues, especially in patients who have previously been operated on the chest wall [1].

Fine needle aspiration has little diagnostic value because the material is generally insufficient.

Core biopsy or excisional biopsy is preferred for preoperative histologic diagnosis, but is not always diagnosed with mesenchymal tumours [1, 2].

Outcome:

The treatment of fibromatosis remains controversial because of the low incidence. However, the treatment of choice is currently wide local excision, but mastectomy may be required for extensive or locally recurrent disease, keeping in mind that it should be avoided when possible, especially in young women [1, 7].

Despite its benignity, it tends to invade and have local recurrence (21-27%) [6], presenting no potential for metastasis. When the lesion is adherent to fascia, muscle or skin, excision should be extended to include the affected area. There are reports of recurrence up to 11 years after surgery [7].

Conservative therapies (radiotherapy, chemotherapy and hormonal therapy) should be considered when important neurovascular structures are involved or in case of a poor clinical status of the patient [7].

Teaching Points:

- Complaint of palpable mass in the breast should always be investigated.
- Rapidly growing breast nodule may correspond to desmoid fibromatosis.
- The desmoid tumour may invade adjacent soft tissues.

Differential Diagnosis List: Mammary fibromatosis, Invasive ductal carcinoma, Invasive lobular carcinoma, Postoperative scar, Diabetic mastopathy

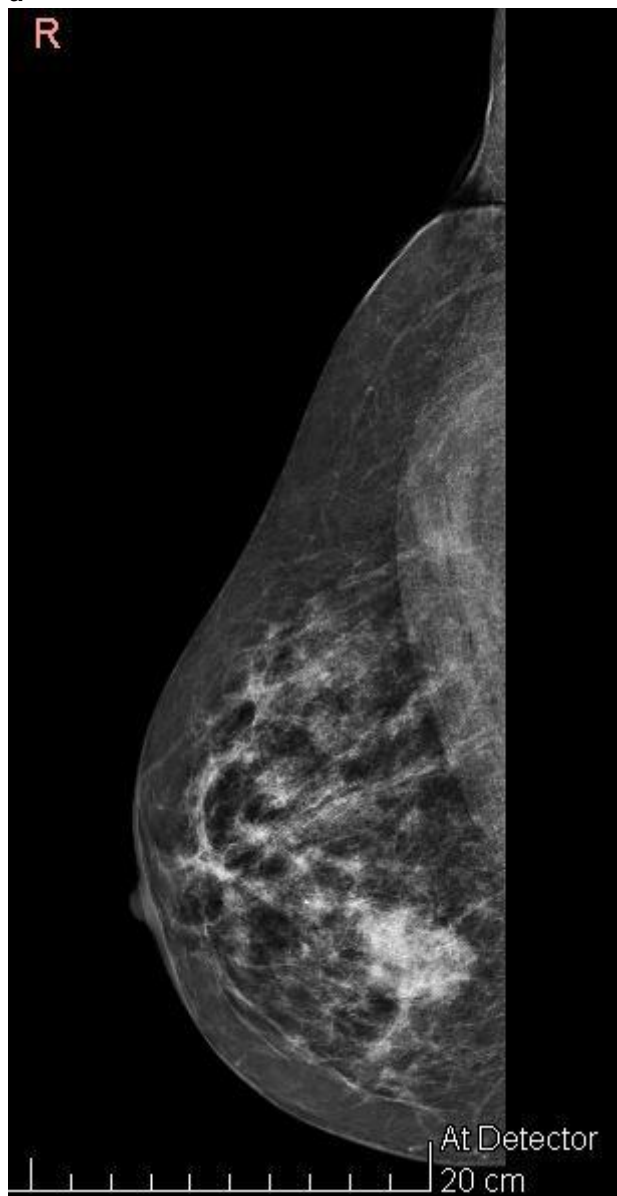
Final Diagnosis: Mammary fibromatosis

References:

- Roman Benj (2017) Desmoid-type fibromatosis of the breast. *Oncology letters* 14: 1433-1438 (PMID: [28789360](#))
- Cristovão Pinheiros Barros (2017) Fibromatose Mamária: Relato de um Caso. *Revista Médica de Minas Gerais* 253: 1-7
- Louise Scheer (2017) Medical Treatment of mammary desmoid-type fibromatosis. *World Journal of Surgical Oncology* 15:86 (PMID: [28420393](#))
- Alexandre Henrique Macchetti (2006) Fibromatosis of the male breast. *Clinics* 61 (4): 351-4 (PMID: [16924328](#))
- Schauertz (1993) arede abdominal, omento, mesente?rio e retroperito?nio. *Princípios de Cirurgia* 6a ed
- Enzinger FM (1995) Enzinger FM, Weiss SVV editors. *Soft tissue tumors* 201-29
- Arwa Ashoor (2017) Fibromatosis, a benign breast disease mimicking carcinoma. A case report. *Int J Surg Case Rep* 41: 392–397 (PMID: [29545999](#))

Figure 1

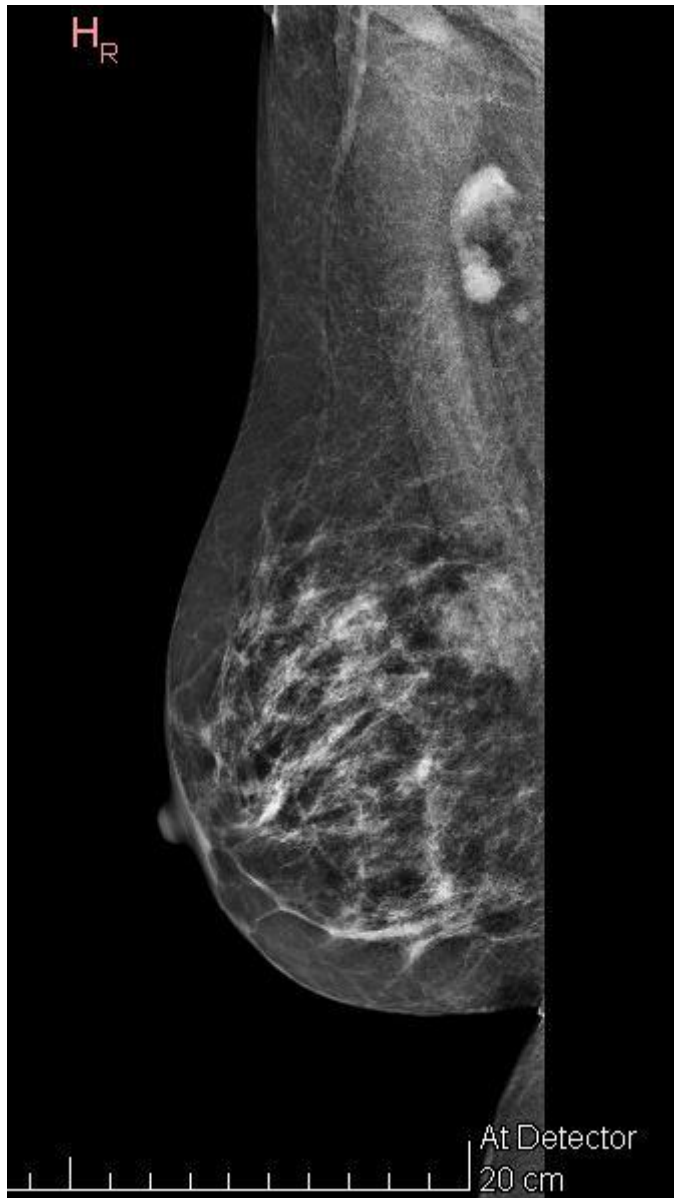
a



Description: Nodule with irregular contours at the inner quadrant of the right breast. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil.

Figure 2

a



Description: Nodule with irregular contours at the upper quadrant of the right breast. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

Figure 3

a



Description: Solid, irregular and heterogeneous nodule seen at 2 o'clock position. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

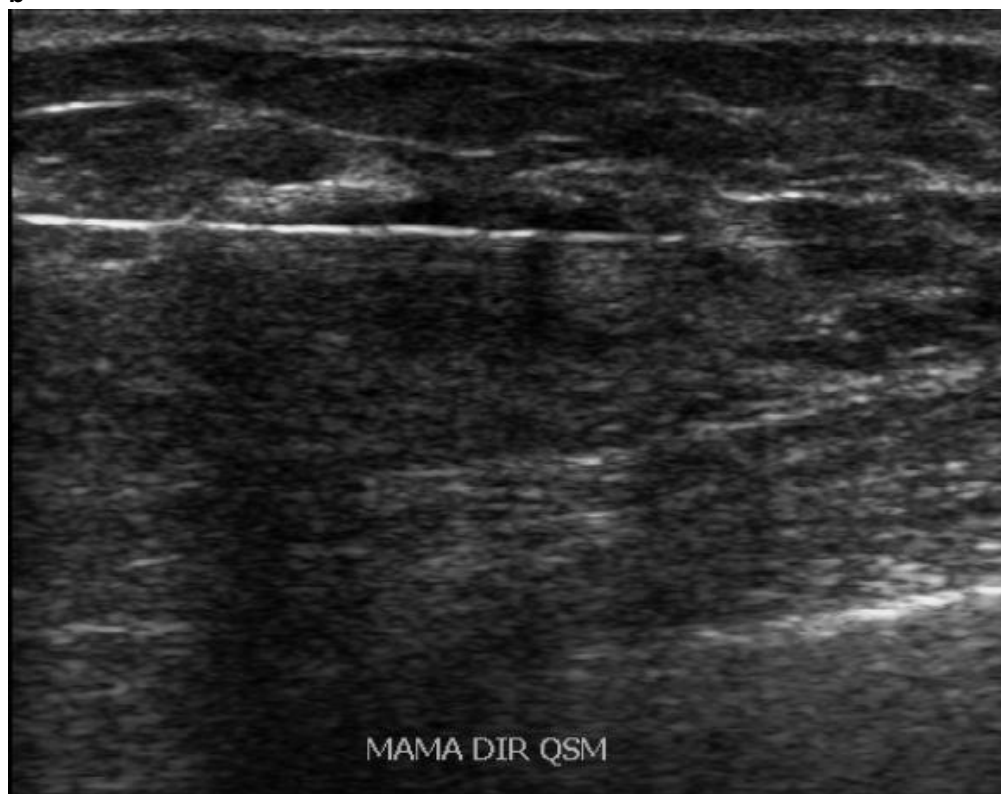
Figure 4

a



Description: Ultrasound-guided breast biopsy removed 10 fragments. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

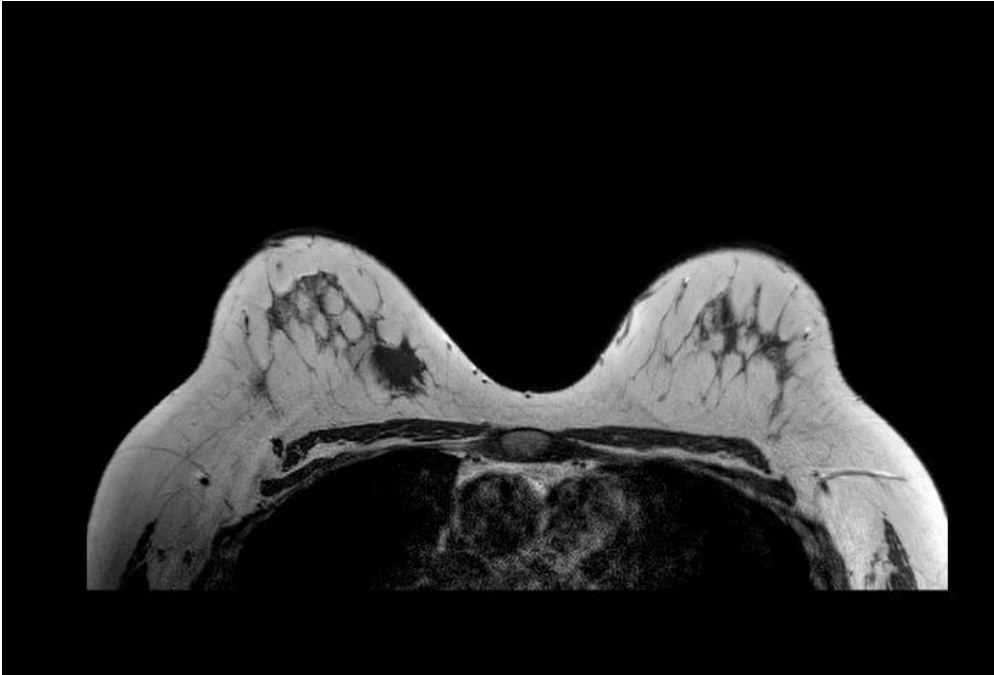
b



Description: Ultrasound-guided breast biopsy removed 10 fragments. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

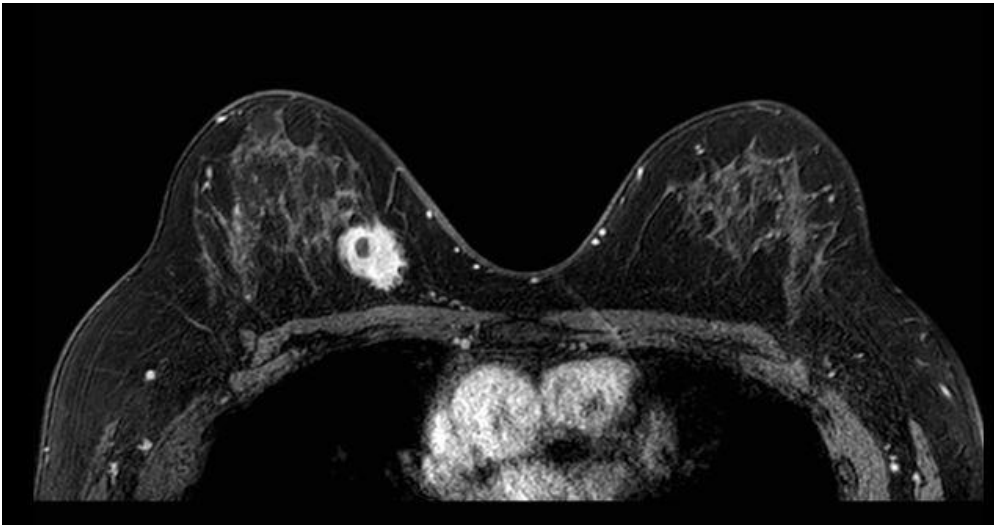
Figure 5

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Description: MRI AXIAL T1: hypointense mass with an irregular shape at the right breast. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

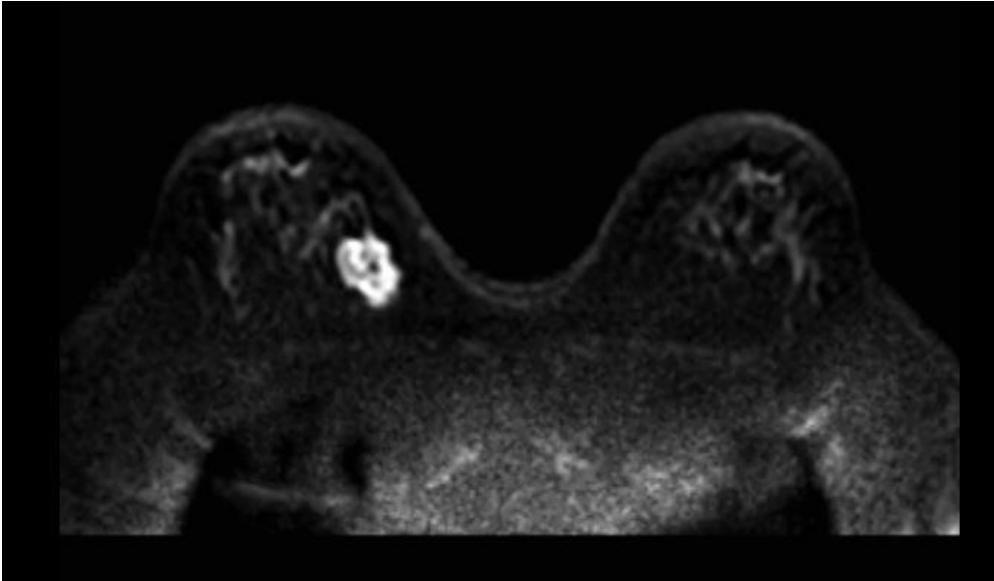
b



Description: MRI AXIAL T2: Heterogeneous nodule, predominantly hyperintense with irregular contours in the right breast, with a small haematoma in between (post core biopsy). **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

Figure 6

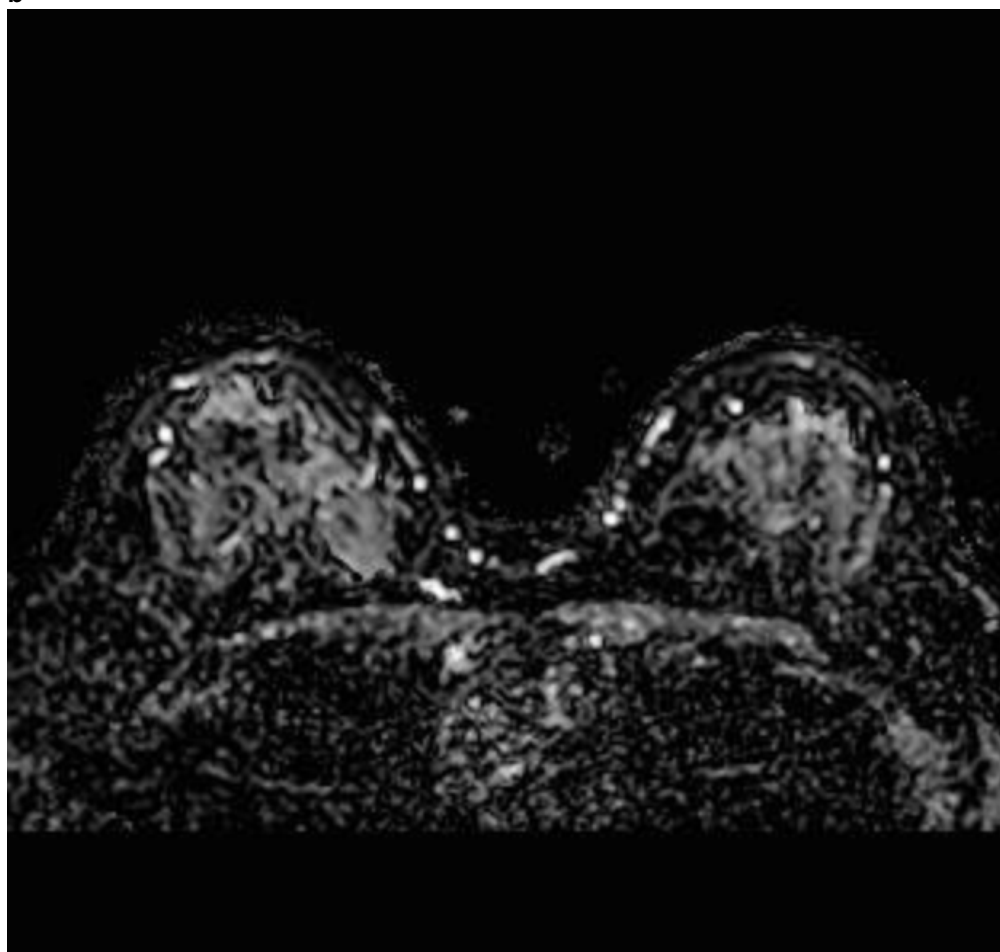
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Description: DIFFUSION sequence:

Heterogeneous nodule with irregular contours and restriction of diffusion for the most part. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

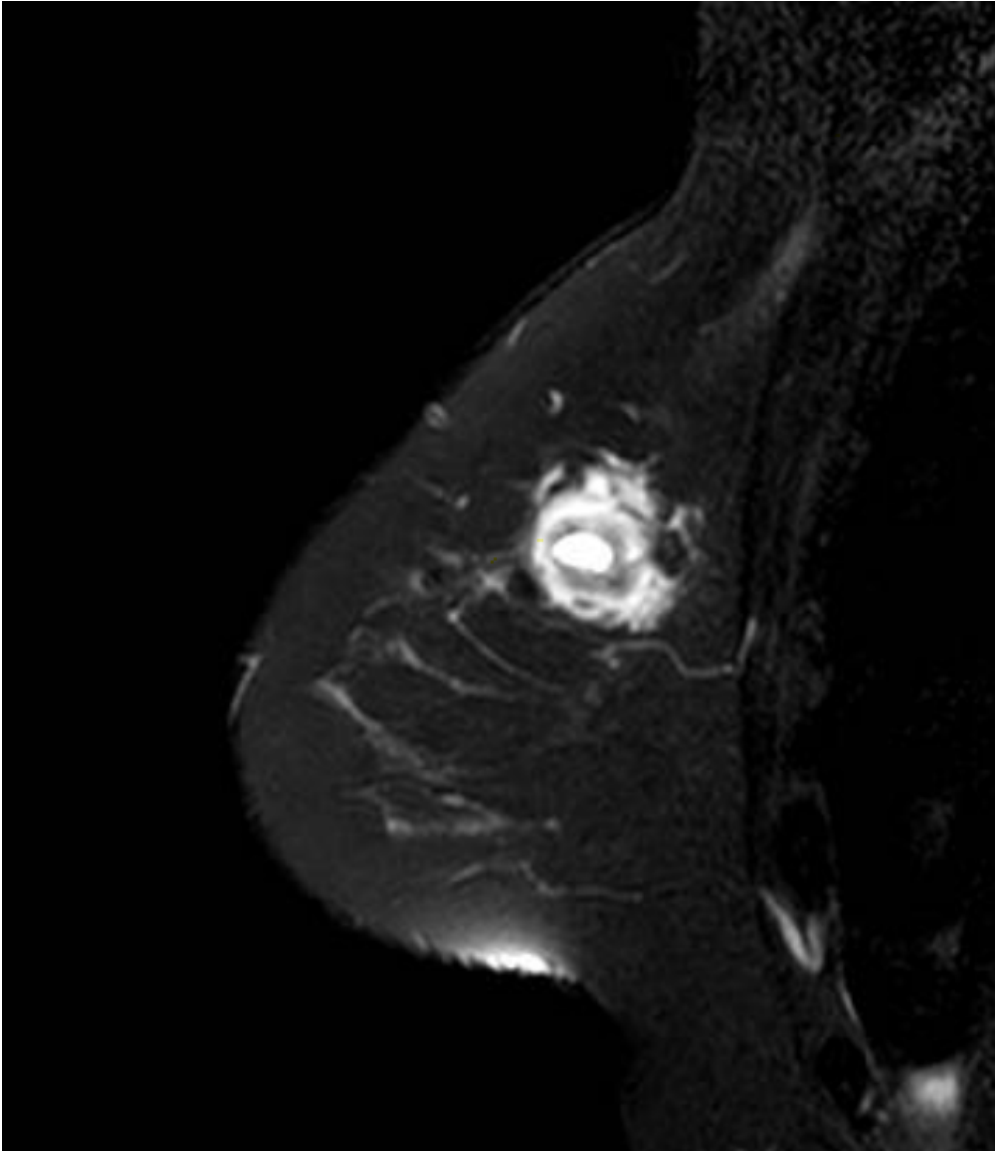
b



Description: dADC sequence: Confirmation of restriction to diffusion by the ADC map **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

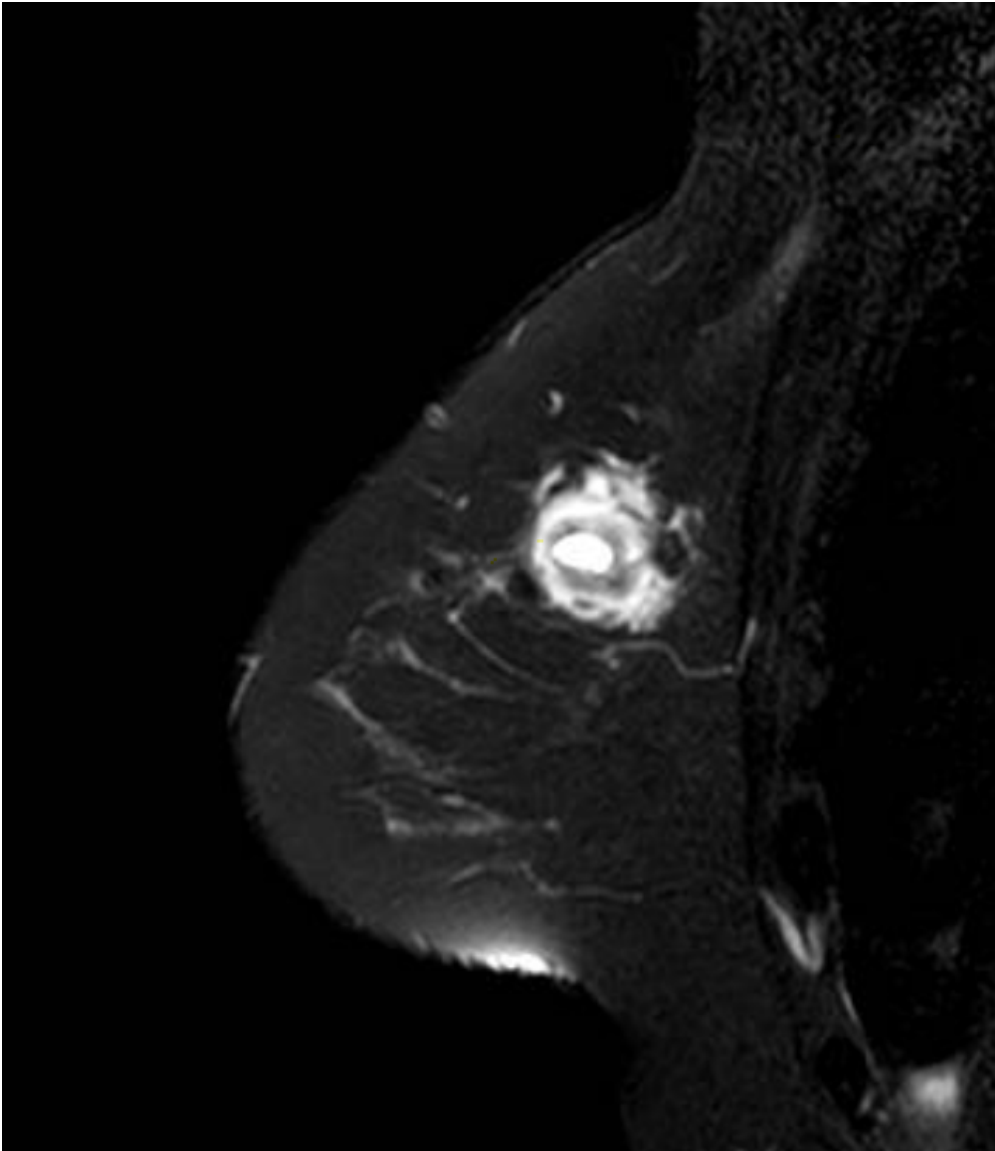
Figure 7

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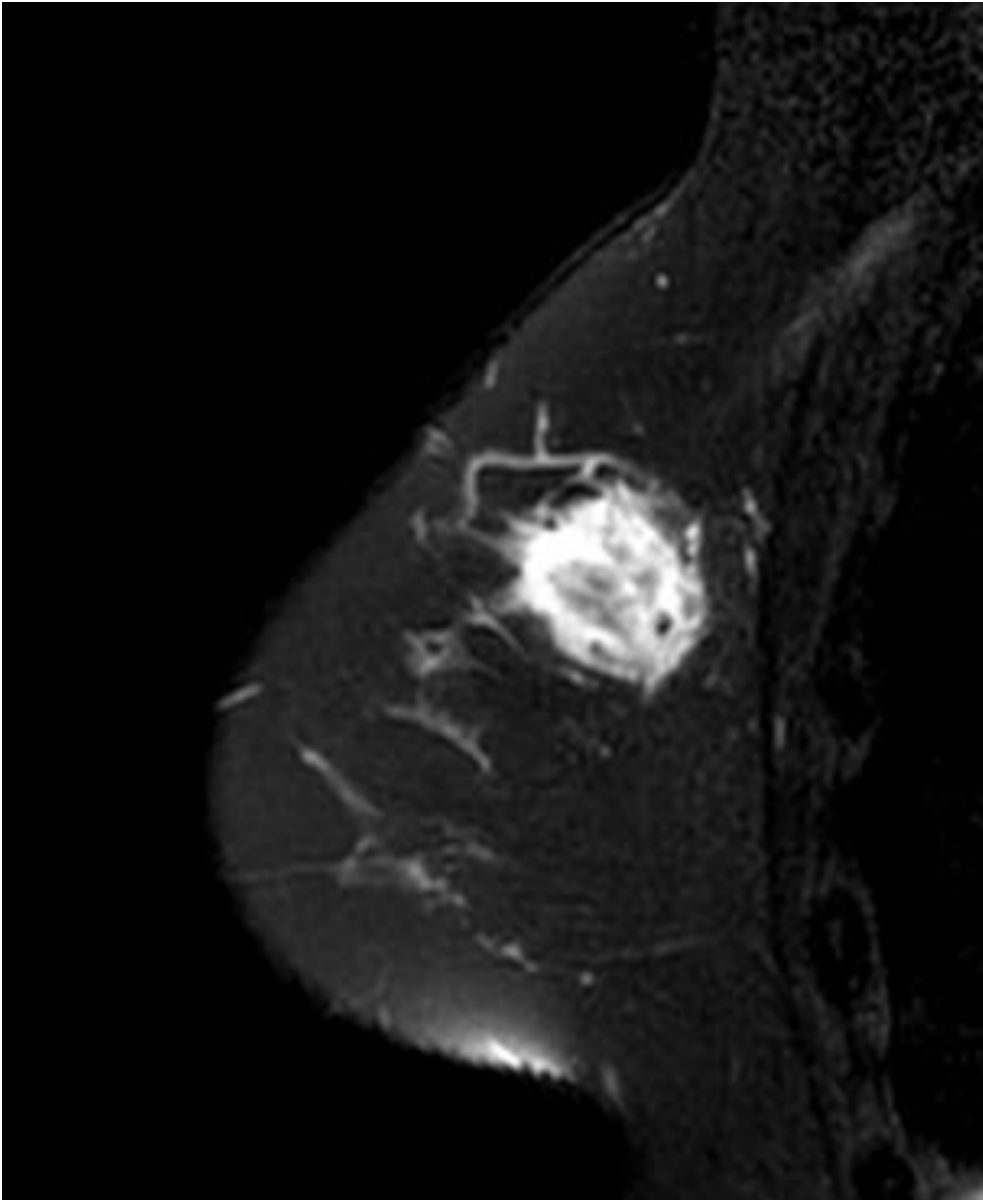
Description: Heterogeneous nodule, predominantly hyperintense with irregular contours in the right breast, with a small haematoma in between (post core biopsy). **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

b



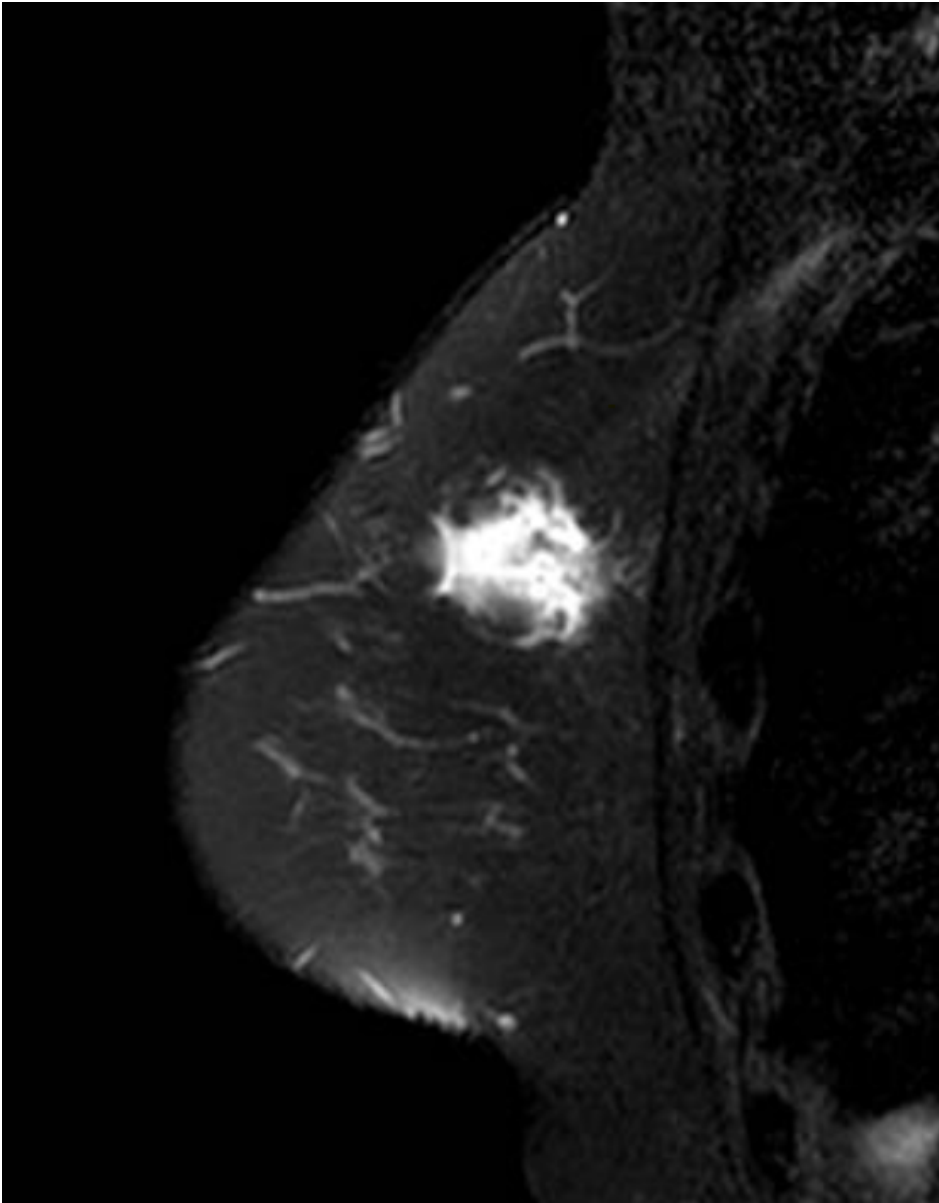
Description: Heterogeneous nodule, predominantly hyperintense with irregular contours in the right breast, with a small haematoma in between (post core biopsy). **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

c



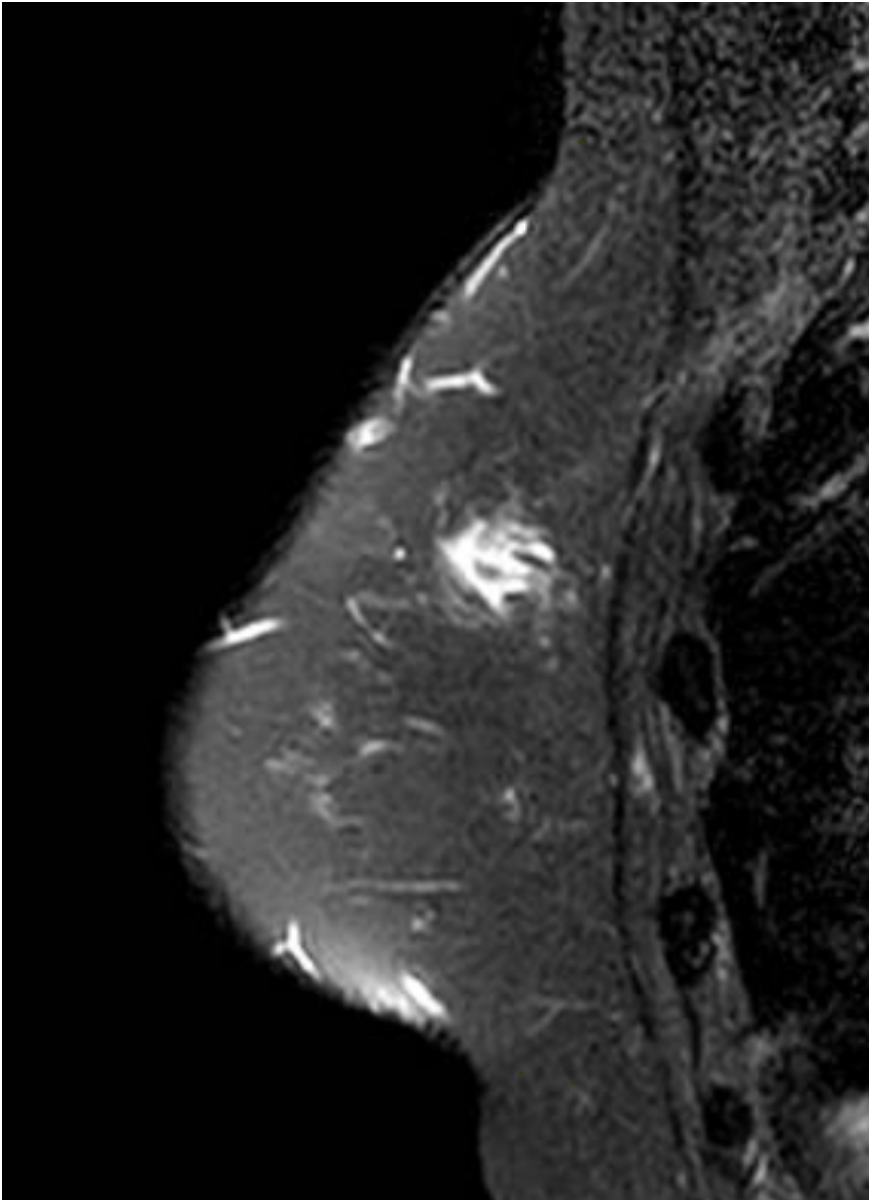
Description: Heterogeneous nodule, predominantly hyperintense with irregular contours in the right breast, with a small haematoma in between (post core biopsy). **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

d



Description: Heterogeneous nodule, predominantly hyperintense with irregular contours in the right breast, with a small haematoma in between (post core biopsy). **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

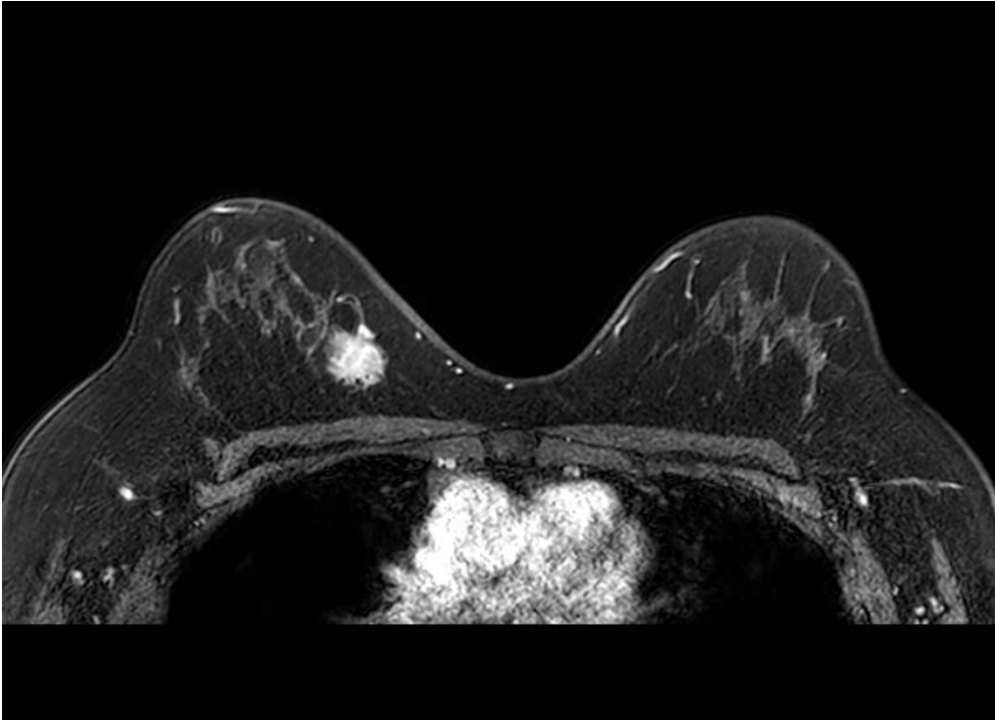
e



Description: Heterogeneous nodule, predominantly hyperintense with irregular contours in the right breast, with a small haematoma in between (post core biopsy). **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

Figure 8

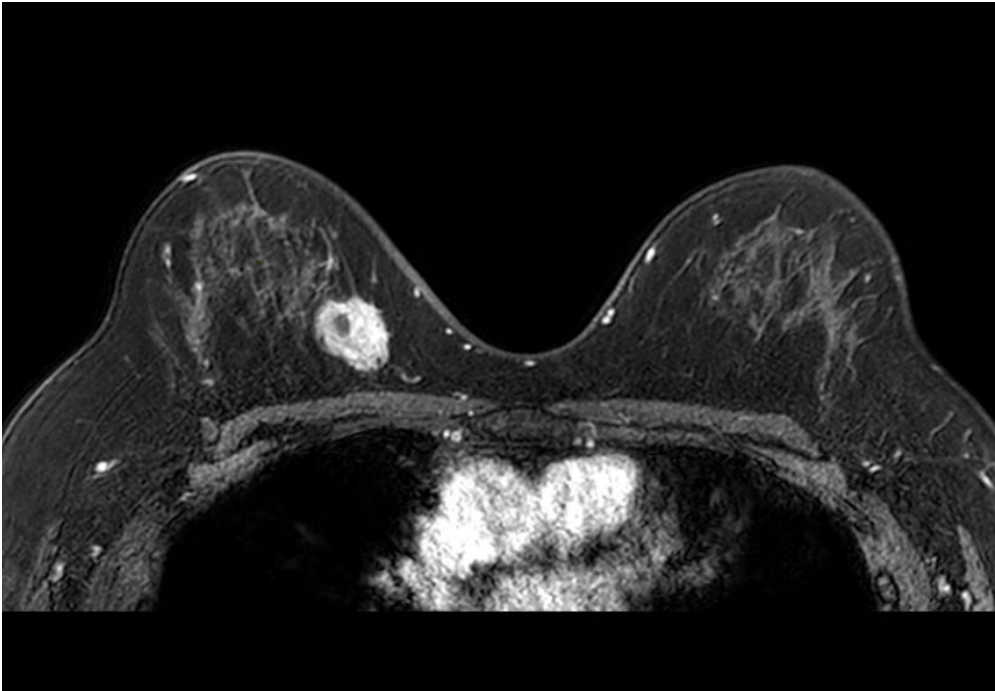
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Description: 2 minute: The image shows an enhancing nodule with irregular shape in the right breast.

Origin: Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

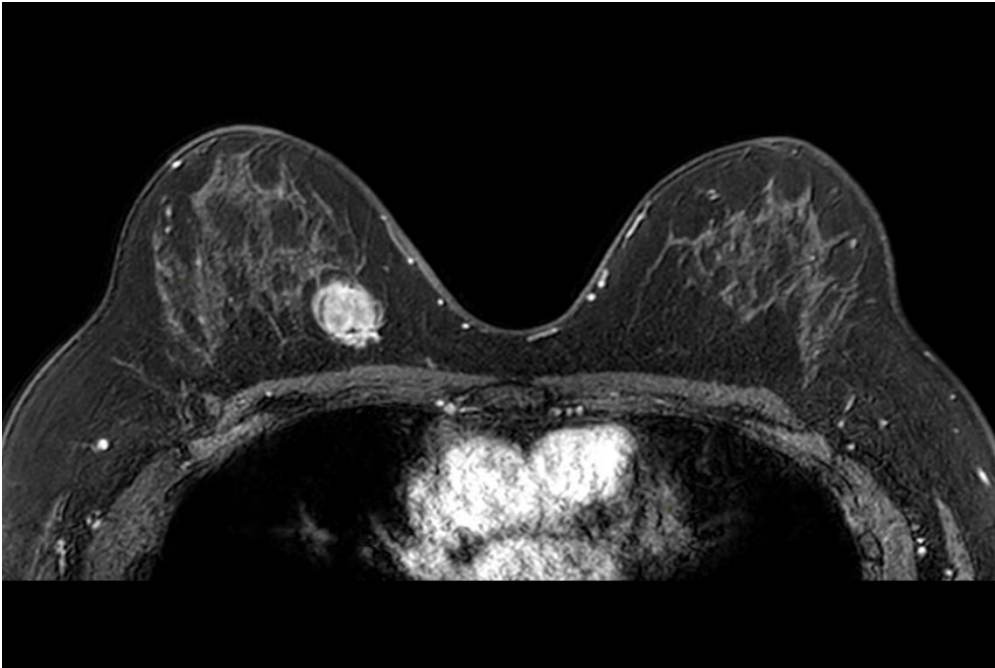
b



Description: 2 minute: The image shows an enhancing nodule with irregular shape in the right breast.

Origin: Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

c

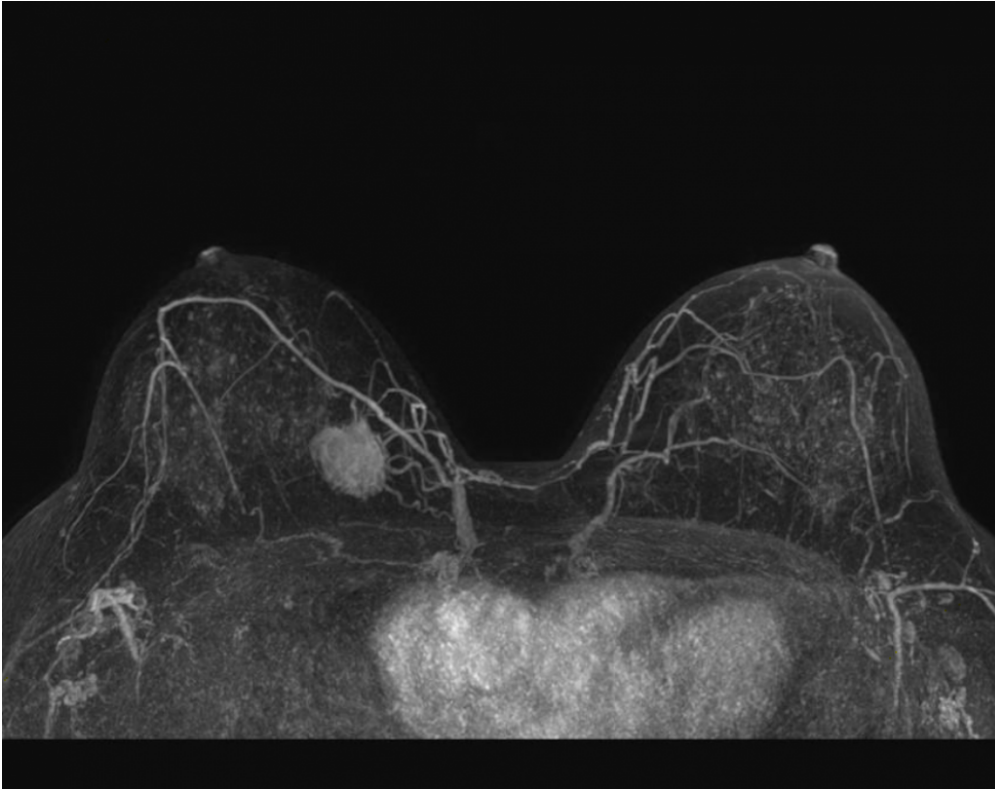


Description: 2 minute: The image shows an enhancing nodule with irregular shape in the right breast.

Origin: Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil

Figure 9

a



Description: MIP sequence showing the irregular nodule and the vascularisation. **Origin:** Clinica Villas Boas, Department of Breast Radiology, Brasilia, Brazil