

Papillomatosis

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Section: Breast imaging

Area of Interest: Breast

Procedure: Contrast agent-intravenous

Procedure: Biopsy

Imaging Technique: Mammography

Imaging Technique: MR-Functional imaging

Imaging Technique: Ultrasound-Colour Doppler

Special Focus: Hyperplasia / Hypertrophy Pathology

Case Type: Clinical Cases

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Patient: 60 years, female

Clinical History:

A 60-year-old female patient presented bilateral nipple discharge. Clinical examination did not reveal masses or breast pain.

Imaging Findings:

The most relevant finding in digital mammography was a bilateral population of small ovals and well-circumscribed nodules (below one centimetre in diameter), without any associated microcalcification or architectural distortion. Ultrasound examination showed bilateral nodules, which suggests focal dilations of the galactophore ducts with echogenic content. Additionally, some of these nodules showed vascularity.

MRI revealed multiple oval-shaped, well-circumscribed small nodules exhibiting homogeneous, moderate and progressive contrast enhancement. The majority of the observed nodules were new findings in comparison to the one of the US imaging.

Following MRI, a percutaneous biopsy (14G) guided by ultrasound was performed.

Discussion:

A papilloma is a mass-like pathologic formation of the papillary ductal epithelial and myoepithelial cell layer supported by a fibrovascular stroma.

In intraductal papillomatosis, papillomas typically involve the distal ducts and often experience morphologic changes in the epithelial component (unlike solitary papillomas). Metaplasia, hyperplasia, atypical intraductal hyperplasia and in situ carcinoma can all originate from the epithelial component [2] [4].

A higher risk of cancer (relative risk of 7) has been reported for patients with multiple papillomas with atypia. While solitary papillomas are most frequently found in perimenopausal women, multiple papillomatosis tends to affect younger women and present a peripheral location [3] [4].

Although most patients are asymptomatic, palpable masses (which may or may not be associated with nipple discharge) are occasionally present [1] [2].

Mammographic findings are nonspecific: round or oval well-circumscribed nodules are the most common

appearance, but an irregular marginal mass may also occur. Microcalcifications can be present but are not common [1] [2].

In US, they typically appear in the form of round or lobulated, circumscribed solid nodules or masses. Small lesions may be invisible to the US, as it was in our case. The association of dilated ducts and nodules is a hallmark of papillomatosis [1].

MRI findings are nonspecific, with several possible typologies: oval nodule, irregular nodule, and solid and cystic mass. Contrast enhancement patterns are not useful in diagnosis, but a rim enhancement, washout or plateau are features suggestive of malignant disease. Therefore, an irregular nodule combined with a suspicious enhancement pattern may be misdiagnosed as a breast carcinoma. Lesions smaller than 1-2 mm in diameter cannot be resolved on MRI [1] [2].

While there is no consensus on the management of multiple papillomatosis, a needle core biopsy is required for diagnosis to identify epithelial atypia [3].

Recurrence after surgical intervention is frequent, and treatment is currently controversial. If the patient opts for a conservative treatment, annual reviews should be performed because of this potential risk to develop Ductal carcinoma in situ (DCIS) or Small invasive carcinoma (even though papillary carcinoma may have a better prognosis). An MRI control every 1-2 years (given its high sensitivity in detecting papillomas and multicentric disease) may be appropriate for these patients. In our case, a control was realised after 6 months without changes [4].

Differential Diagnosis List: Papillomatosis, Fibrocystic breast changes, Multiple fibroadenomas, Breast carcinoma (Ductal carcinoma in situ (DCIS) or small invasive carcinoma)

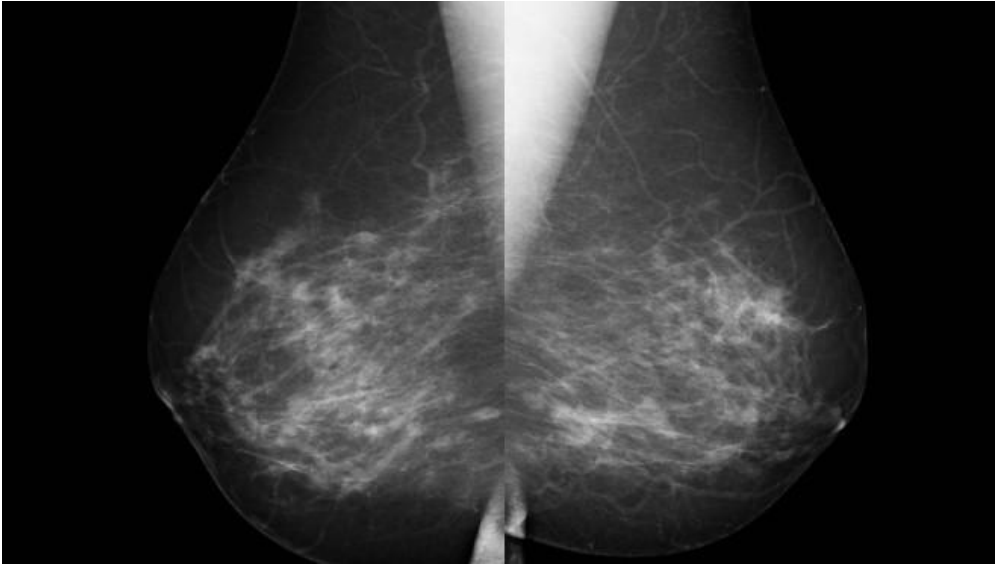
Final Diagnosis: Papillomatosis

References:

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Figure 1

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Description: Small and well-circumscribed nodules. **Origin:** Department of Radiology. Hospital Clínico San Carlos. Madrid. España.

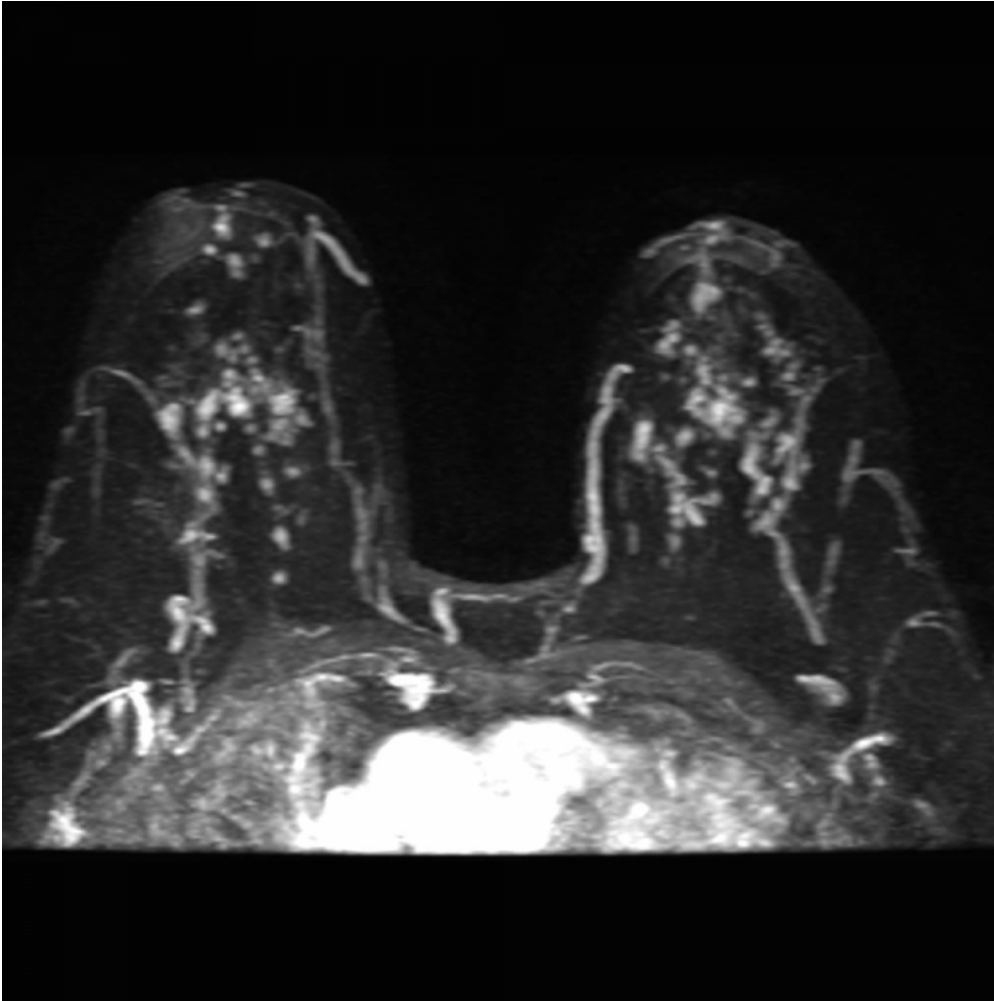
Figure 2



Description: Bilateral solid well-circumscribed nodules with doppler vascularity. **Origin:** Department of Radiology. Hospital Clínico San Carlos. Madrid. España.

Figure 3

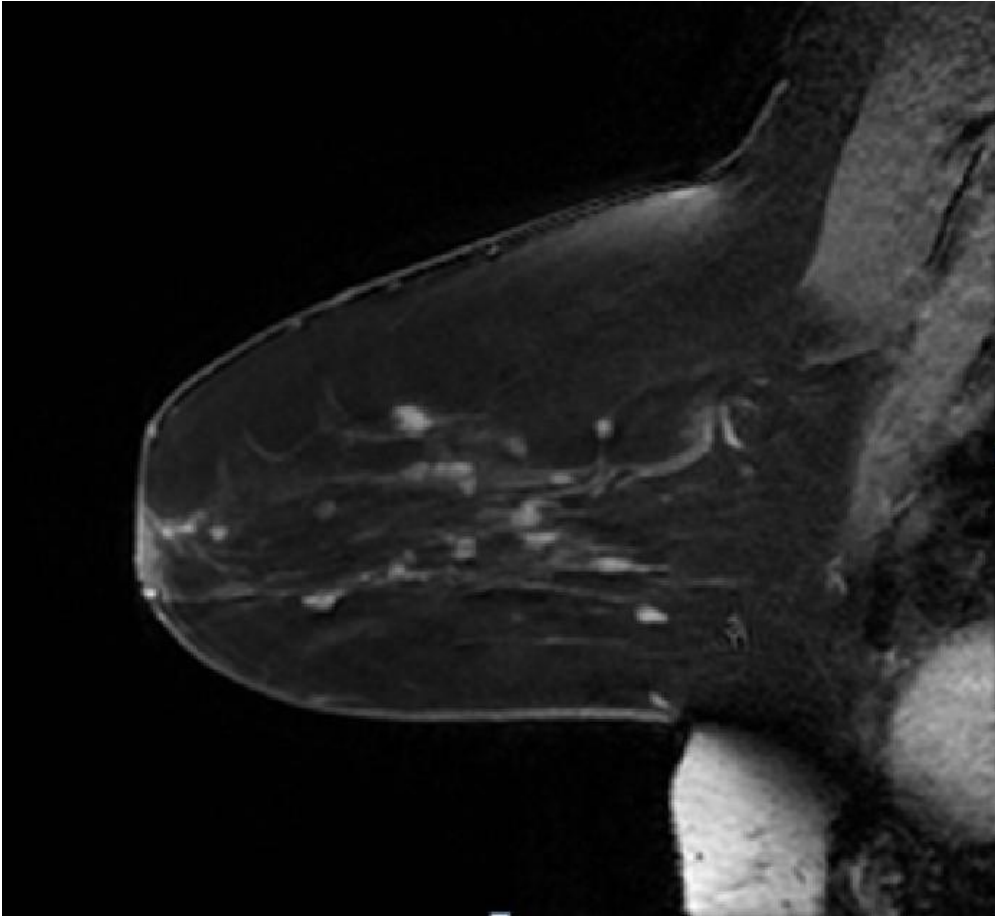
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Description: Multiple oval-shaped, well-circumscribed small nodules exhibiting homogeneous, moderate and progressive contrast enhancement. **Origin:** Department of Radiology. Hospital Clínico San Carlos. Madrid. España.

Figure 4

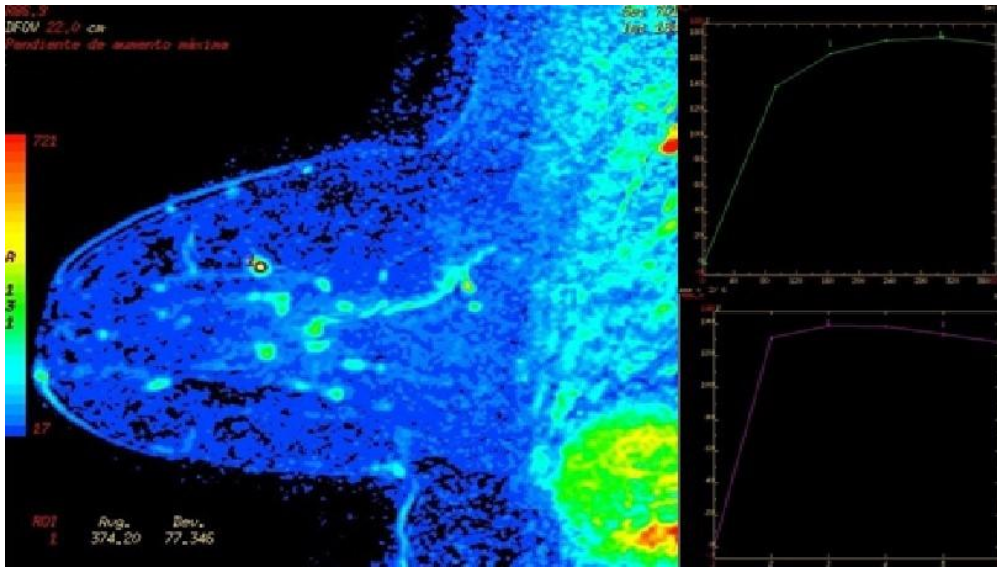
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Description: Multiple oval-shaped, well-circumscribed small nodules exhibiting homogeneous, moderate and progressive contrast enhancement. **Origin:** Department of Radiology. Hospital Clínico San Carlos. Madrid. España.

Figure 5

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Description: Perfusion map shows moderate and progressive contrast enhancement with type I-II curves. **Origin:** Department of Radiology. Hospital Clínico San Carlos. Madrid. España.