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Fibroadenoma and Phyllodes Tumor in an Adolescent: A Case Report

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Abstract

We present the case of a 17-year-old girl who consulted for a progressively appearing right breast mass discovered by self-palpation. Clinical examination and imaging revealed suspicious bilateral masses, classified as ACR 5 on MRI. However, biopsies showed benign lesions. Bilateral enucleation was performed. Histopathological analysis confirmed a fibroadenoma on the right and a low-grade phyllodes tumor on the left. Postoperative outcomes were favorable, with no recurrence.

Abbreviations: LOQ: Lower Outer Quadrant

Introduction

Breast masses in adolescent girls are most often benign. Fibroadenoma is the most frequently encountered lesion in this age group. Phyllodes tumor, although rarer, may present with misleading clinical and radiological features, warranting careful management. The differential diagnosis between these two entities primarily relies on histopathological examination. We report a case combining a fibroadenoma in the right breast and a low-grade phyllodes tumor in the left breast in a 17-year-old adolescent.

Case Presentation

This is Miss E.L.S., a 17-year-old, single, originally from and residing in Casablanca, with no significant past medical history. She presented after discovering, through self-examination, a nodule in her right breast.

The history of the illness goes back approximately one year, marked by the gradual appearance of a right breast mass that slowly increased in size and caused breast deformation, without inflammatory signs, nipple discharge, or mastalgia.

Clinical examination revealed breast asymmetry with both breasts corresponding to a C cup size. The right breast showed a firm, mobile, painless mass measuring 5 x 4 cm, located in the lower outer quadrant (LOQ). The left breast had a retroareolar nodule measuring 1 x 1 cm, also mobile. The axillary and supraclavicular lymph node areas were clear.

Breast ultrasound revealed dense breasts. In the right LOQ, it showed an oval, well-defined lesion with regular borders and internal septations, with slight posterior enhancement, measuring 63 x 28 mm, classified as BIRADS 3. In the left retroareolar area, an oval, macro-lobulated, hypoechoic, heterogeneous lesion with Doppler vascularization was observed, measuring 37 x 12 mm, classified as BIRADS 4.

Breast MRI revealed a large 58 mm mass at the junction of the outer quadrants of the right breast, associated with ipsilateral multicentric lesions (retroareolar and upper inner

quadrant) and contralateral subareolar lesions. The morphological and kinetic features of these lesions suggested a high suspicion of malignancy. The MRI was classified as bilateral ACR 5.

Breast biopsies showed, in the right breast, parenchyma with non-atypical fibrocystic mastopathy lesions and no signs of malignancy. In the left breast, the fibro-epithelial proliferation suggested either a fibroadenoma or a low-grade phyllodes tumor, without histological criteria of malignancy. Bilateral enucleation was performed. Histopathological examination of the surgical specimens concluded a fibroadenoma in the right breast and a low-grade phyllodes tumor in the left breast.

Figure 1: Asymmetry of both breasts

Figure 2: Lesion of the right QIE and left retro-mammary area

Figure 3: Bilateral enucleation

Figure 4: Surgical specimen

Discussion

Breast tumors in adolescents present a diagnostic and therapeutic challenge due to their rarity and the particular characteristics of the developing breast. Benign lesions, notably fibroadenomas, account for more than 80% of breast masses in this age group **[1,2]**. In contrast, phyllodes tumors, which are much rarer, may mimic malignant lesions both clinically and radiologically, justifying increased vigilance **[3]**.

Clinical Features in Adolescents

In young patients, breast tumors are often discovered incidentally through self-palpation, as was the case here **[2]**. The absence of mastalgia, discharge, or inflammatory signs generally indicates a benign pathology. However, any progressive increase in volume, especially when causing breast deformation, should prompt further investigation, without downplaying the symptoms due to the patient's age.

Value and Limitations of Imaging

Ultrasound is the first-line imaging modality in young patients to avoid radiation exposure. It allows for good characterization of masses in terms of shape, margins, echogenicity, and vascularity **[4]**. The BIRADS classification system standardizes interpretation, though it sometimes fails to distinguish between fibroadenoma and phyllodes tumor **[3]**.

Breast MRI, although more accurate for dynamic lesion characterization, can result in false positives, particularly in dense breasts. In our case, the MRI overestimated the risk, assigning a bilateral ACR 5 classification, whereas histology revealed benign lesions. This discrepancy highlights the necessity of correlating radiologic and histopathological findings, especially in adolescents **[5,3]**.

Histology: The Cornerstone of Diagnosis

Fibroadenomas and phyllodes tumors both belong to the fibro-epithelial tumor family **[6]**. They share many histologic features, particularly the presence of both stroma and epithelium, but are distinguished by:

- Degree of stromal cellularity
- Architecture (presence of clefts and lobulations)
- Mitotic activity
- Margin infiltration **[6,7]**

The diagnosis of a low-grade phyllodes tumor may be suspected in cases of moderate stromal proliferation, but it is difficult to establish on core needle biopsy alone. In many cases, the definitive diagnosis is made only after complete excision **[6,8]**.

Therapeutic Strategy

Treatment is based on surgical excision, with the extent depending on the diagnosis:

- For fibroadenomas, simple enucleation is sufficient **[1,2]**.
- For phyllodes tumors, even benign ones, wide excision with clear margins (>1 cm) is usually recommended to prevent recurrence **[7,9]**.

In our case, bilateral enucleation allowed for effective conservative management, with reassuring histopathologic results.

Follow-up and Prognosis

The prognosis of benign tumors is generally good. However, phyllodes tumors, even of low grade, carry a local recurrence risk estimated at 10–20%, hence the importance of regular clinical and ultrasound follow-up after surgery **[9,10]**. Malignant transformation is rare but must be considered and monitored during postoperative follow-up **[8,10]**.

Conclusion

This case highlights the diagnostic challenges posed by bilateral breast masses in adolescents. The association of a fibroadenoma and a phyllodes tumor, although rare, requires careful histological analysis, a well-coordinated clinical and radiologic evaluation, and a conservative yet effective surgical approach. Prognosis is favorable when the diagnosis is made early and management is appropriate. Continued clinical follow-up is essential, particularly for forms at risk of recurrence

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