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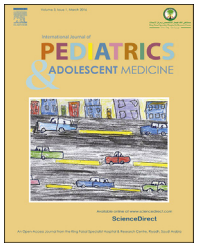

CASE REPORT

# An adolescent with a phyllodes tumor: A case report and review

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**KEYWORDS**
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**Abstract** Phyllodes tumors are rare fibroepithelial tumors that account for less than 0.5% of all breast tumors. Presentation in children is even rarer. In this paper, we describe a case of an adolescent with a phyllodes tumor. The rare presentation at this age, its distinguishing features, the preoperative diagnostic difficulties and the management protocols of this uncommon tumor are highlighted.


## 1. Introduction

Breast lumps are uncommon in children. The most common type of breast mass found in the adolescent population is a fibroadenoma. Phyllodes tumors are rare fibroepithelial tumors that account for 0.3–0.5% of all breast tumors in females. They are rarely observed in adolescents, with only 20 cases reported [1]. Here, we report a case of an adolescent with a lump in her left breast, which the histopathology revealed to be a benign phyllodes tumor.

## 2. Case summary

An 11-year-old pre-menarcheal girl presented with a lump in her left breast that was gradually increasing in size. Local examination revealed a 15 × 15 cm, well-circumscribed, firm and freely mobile lump occupying the entire left breast (Fig. 1). The right breast was normal, and there was no axillary lymphadenopathy. Ultrasound revealed a 9 × 5 × 6 cm homogenous, hypoechoic and encapsulated lesion with minimal vascularity and no calcification (Fig. 2). Cytology was suggestive of a fibroadenoma. The patient underwent an excision biopsy using an inframammary incision. A 9 × 9 cm encapsulated lump weighing 250 gm with smooth surfaces was excised. The histopathologic analysis revealed that it was a benign phyllodes tumor with margins reaching the inked surface(Fig. 3). Q3

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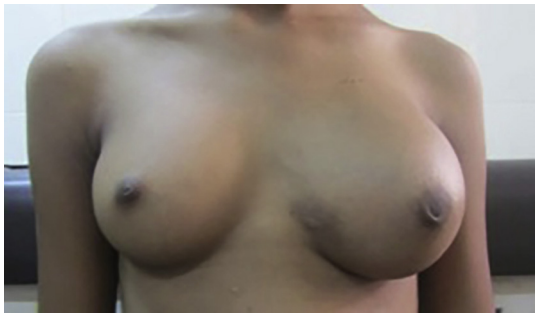

**Figure 1** Clinical photograph of the patient showing the left breast lump.

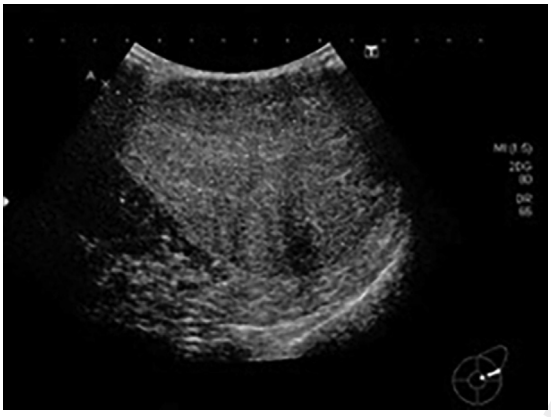

**Figure 2** Ultrasonographic imaging of the left breast lump.

## 3. Discussion

The evaluation of an adolescent presenting with a breast mass differs substantially from that of an adult because of marked differences in breast cancer risk and breast architecture. There is less emphasis on exclusion of malignancy, as pediatric breast masses are typically benign (95% benign fibroadenomas) [2].

Management of pediatric breast masses is primarily conservative. Clinical observation over two to four months is appropriate. Masses that increase by more than 1 cm and those larger than 2 cm warrant ultrasonographic percutaneous biopsies to confirm the benign nature [2].

As per the Stanford School, the following criteria for juvenile fibroadenoma are used: 1] circumscribed and rarely multiple; 2] biphasic stromal and epithelial process lacking a leaf-like growth pattern in a uniformly hypercellular stroma; 3] a lack of atypical features and a stroma-like periductal increase in cellularity, stromal overgrowth and cytologic atypia, as well as a mitotic rate $<3$/hpf; 4] frequent epithelial and myoepithelial hyperplasia; and 5] an age of between 10 and 20 years [3].

Giant fibroadenomas are defined as tumors $>500$ g.

Phyllodes tumors are rare fibroepithelial tumors that account for 0.3—0.5% of female breast tumors, the peak of which occurs in women between the ages of 45 and 49 years [4]. This type of tumor is rarely found in adolescents. Only about 20 cases have been reported in children [1].

A large breast lump with history of rapidly increasing size and ultrasound features suggestive of a fibroadenoma (except a size $>$ 2 cm) should arouse high suspicion of a phyllodes tumor [5]. Axillary node involvement is rare. Another characteristic feature of these tumors is a high rate of local recurrences (5—20%) [6].

Fibroadenomas and phyllodes tumors share many common features. Clinically, both present as rounded, circumscribed, moveable masses. Histologically, both can be grouped as "fibroepithelial lesions". Preoperative diagnosis poses a diagnostic difficulty, as fine needle aspiration cytology and core needle biopsy may not be able to distinguish a phyllodes tumor from a fibroadenoma [5].

Microscopically, phyllodes tumors are characterized by a double-layered epithelial component arrayed in clefts and surrounded by a hypercellular stromal mesenchymal component. The stroma often protrudes into the epithelial lining spaces, forming a slit-like space or a leaf-like pattern; hence, the name phyllodes, which means "leaf-like" in Greek. The morphologic features that have to be accounted for are the following: 1) the degree of stromal hypercellularity, 2) stromal overgrowth, 3) nuclear atypia, 4) number of mitoses, 5) amount of stroma relative to epithelium and 6) infiltrative tumor borders.

However, the natural history of these tumors is often different, and the differences are tabulated in Table 1. Phyllodes tumors tend grow more rapidly and may recur if

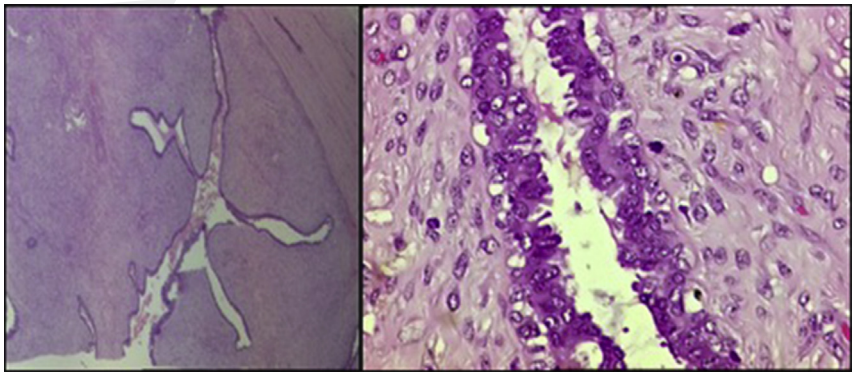

**Figure 3** Histopathological analysis of the specimen —Hematoxylin and Eosin staining showing the biphasic tumor and a magnified histopathological image showing nuclear pleomorphism and mitotic figures.

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