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Case Report

Juvenile fibroadenoma of the breast

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ABSTRACT

Juvenile fibroadenoma is a rare variant of fibroadenoma and is characterized by rapidly enlarging, painless, and unilateral masses. We presents a case of juvenile fibroadenoma of the breast in a 14 year old girl, presented with rapidly growing mass in the right breast of four months duration. On local examination a solitary, firm, mobile, unilateral, non-tender mass was felt in the upper and lower outer quadrant of the right breast, measuring 6.5 x 4.1 x 3.5cm. The overlying skin was normal. There was no axillary lymphadenopathy. The sonomammography of the right breast showed a single, oval, hypoechoic, well circumscribed mass lesion with cleft like spaces features suggestive of complex fibroadenoma BIRADS IV a. On fine niddle aspiration cytology showed sheets of hyperplastic benign ductal epithelial cells with myoepithelial cells and a background of benign bipolar nuclei and blood, without inflammatory cells. It was suggestive of fibroadenoma. She underwent right lumpectomy with breast conservation. We received right breast lumpectomy specimen. On gross showed a well-circumscribed, grey white, firm mass m 6.3 x 4.1 x 3.2 cm. On histologic features reported as juvenile fibroadenoma right breast. The postoperative period was uneventful and she recovered well and advise regular follow up.

Conclusion: Juvenile fibroadenomas are rare benign breast tumors that should be distinguished from other masses of breast. Herewith we are presenting case of Juvenile fibroadenoma for its clinical, radio imaging, pathological features and management.

1. Introduction

Breast masses in children and adolescents are rare.[1] The fibroadenoma being the most frequent breast tumor in adolescent girls. Fibroadenoma is termed juvenile if it occurs in children and adolescents between the ages of 10–18 years.[2] Juvenile fibroadenoma rapidly grows to a large size and the patient presents with breast enlargement, nipple displacement, overluing skin stretching, pain etc. In few cases they shows a prominent vasculature. On ultrasonography it is usually solitary, homogeneous, and hypoechoic mass. They can result in an esthetic problem due to breast asymmetry or hypertrophy.[3] In the majority of pediatricbreast lesions they are of benign etiology, therefore the management approach should be proper.

2. Case Report

A 14-year-old female patient presented to our surgery department having a rapidly growing mass in the right breast in the upper outer quadrant since last four month. There was no any history of trauma, fever, nipple discharge, anorexia. There was no significant family history. No history of any hormonal intake or irradiation to the chest. She has regular menstruation since last one year.

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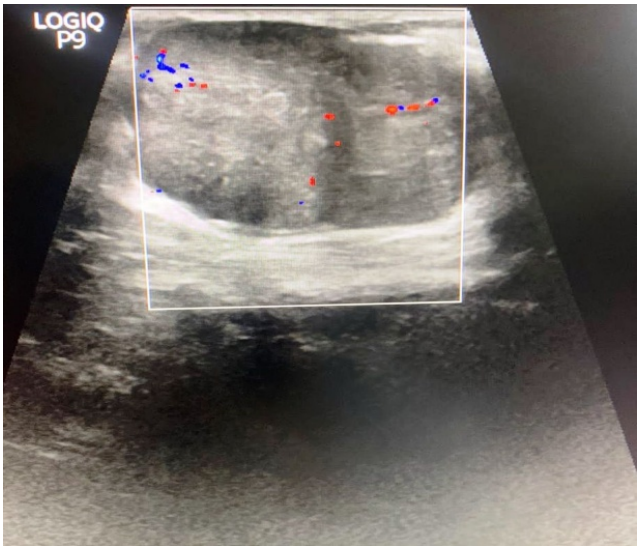

Fig. 1: Sonomammography right breast showed a 6 x 6 x 5cm, oval, hypoechoic, well circumscribed mass lesion with cleft like spaces.

Fig. 2: Cut section right breast mass well circumbscribed, grey white with slit like spaces.

She noted right breast mass associated with pain during menstruation. On local examination, a firm, mobile, solitary and unilateral, non-tender mass was felt in the upper outer quadrant of the right breast, measuring 6.5 x 4.1 x 3.5cm. The overlying skin was normal. There was no axillary lymphadenopathy. The left breast was normal. Routine hematological and biochemical parameters were within normal limits. The sonomammography of the right breast showed a 6 x 6 x 5 cm, oval, hypoechoic, well circumscribed mass lesion with cleft like spaces. Features suggestive of complex fibroadenoma -BIRADS IVa. (Figure 1). On fine niddle aspiration cytology showed sheets of hyperplastic

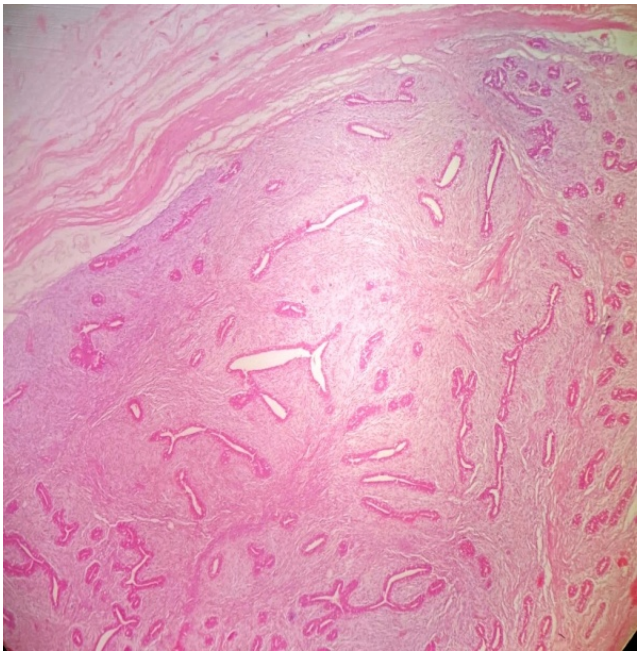

Fig. 3: showing increased epithelial, stromal cellularity with pericanalicular growth pattern.(H& E stain,40x)

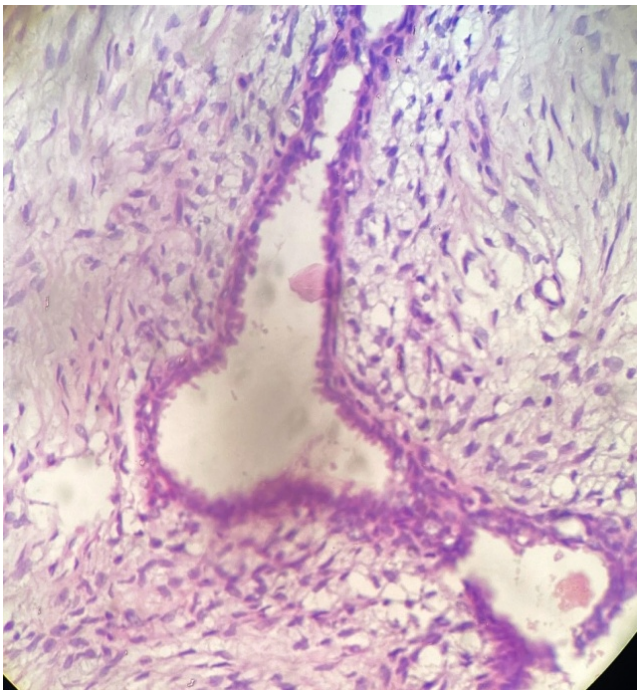

Fig. 4: Breast tissue showing mild epithelial hyperplasia and increased stromal hypercellularity. (H& E stain,100x)

benign ductal epithelial cells with myoepithelial cells and a background of benign bipolar nuclei and blood, without inflammatory cells. It was reported as benign fibroepithelial tumor suggestive of fibroadenoma. She underwent right lumpectomy with breast conservation. The postoperative period was uneventful, and she recovered well and advise regular follow up.

We received right breast lumpectomy specimen. On gross examination a firm, solitary, circumscribed, mass of the right breast measuring 6.3 x 4.1 x 3.5 cm was noted. On cut section grey white, firm, with cleft like spaces was noted (Figure 2). There was no areas of any necrosis or hemorrhages.

On microscopy breast tissue showing well-circumscribed lesion having uniform biphasic stromal and epithelial proliferation with predominantly pericanalicular growth patterns. Glandular elements have intact myoepithelial cell layer. An areas hypercellular stroma was noted, in focal areas epithelial hyperplasia, apocrine change was noted. The leaf-like fronds are not seen. There was no nuclear atypia. On histologic features reported as juvenile fibroadenoma right breast. (Figures 3 and 4).

3. Discussion

In adolescent girls the breast masses are rare and mostly are of benign natures. Juvenile fibroadenomas account for 0.5% and 4% of all fibroadenomas.[4] Juvenile fibroadenoma is a rare variant of fibroadenoma and is characterized by rapidly enlarging, painless, and unilateral masses occurring at ages between 10 and 18 years. Juvenile fibroadenoma shows rapid growth and large size as noted in our case in 14 year girl having the duration was 4 months with large breast mass of size of 6.3 cm.

These are mainly unilateral, but rarely bilateral juvenile fibroadenomas are reported.[5] The etiology of the disease is still not well understood, but hormonal factors have been proposed.

Clinically they are characterized by massive and rapid enlargement of breast. The fibroadenoma of breast have variants like cellular, juvenile, myxoid, complex fibroadenoma etc. The Juvenile fibroadenoma shows increased epithelial hyperplasia rearely with micropapillary projections. There is increased stromal cellularity, namely pericanalicular growth pattern with fascicular arrangement. These all microscopic findings were noted in our case. The incidence of malignant transformation ranges from 0.002% to 0.1% cases.[6]

Giant juvenile fibroadenomas are found in in 0.5% of all fibroadenomas.[7] Giant fibroadenoma tumors are considered when >500 g or disproportionally large compared to rest of breast. Rarely multiple juvenile fibroadenomas are noted.[8]

Fibroadenomas with hypercellular stroma and prominent intracanalicular pattern can show morphologic overlap with benign phyllodes tumors. The diffrential diagnosis are phyllodes tumor, virginal hypertrophy, juvenile papillomatosis, etc.

For the diagnosis on the FNAC breast about 97.4% accuracy in lesion of epithelial proliferative lesion without atypia was noted, however the histopathology is the gold standard for diagnosis.[9] The phyllodes tumor of breast differs from giant fibroadenoma by the presence of leaf-like structures and stromal cell atypia on histopathological evaluation .Prominent mitotic activity ≥ 3/10 high power fields are noted. The tumor may infiltrate surrounding breast. In the virginal hypertrophy the growth is diffuse, not circumscribed and on microcopy it is characterized by abundant connective tissue with duct proliferation and lack of lobule formation. In cases of juvenile papillomatosis stroma is paucicellular, along with many time there are prominent cysts formation is noted.

Management of juvenile fibroadenoma ranges from tumor excision to simply observation, since complete tumor regression may occur in 10-59% of lesions.[10] The treatment is complete excision of the tumor, preservation of the areola and nipple, and achievement of symmetrical breasts. Surgical intervention is indicated for fibroadenomas that are more than 5 cm in diameter, rapidly growing, cause severe pain, distort the breast architecture, or lead to overlying skin changes. Clinical assessment followed by histopathological examination provides an accurate diagnosis of breast fibroadenomas.[11]

4. Conclusion

Juvenile fibroadenomas are rare benign breast tumors that should be distinguished from other breast neoplasms. Herewith we are presenting case of Juvenile fibroadenomas for its clinical, radioimaging, pathological features and management. Juvenile fibroadenomas may be management challenge in adolescent.

5. Conflict of Interest

The authors declare no relevant conflicts of interest.

6. Source of Funding

None.

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