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Adolescent fibroadenoma diagnosis via ultrasound and mammography

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Abstract

Fibroadenomas are quite common benign lesions in the adolescent age group, but it is a cause of concern for the individual and the family. These may remain asymptomatic or may present with pain. Aesthetic distortion of the breast symmetry may lead to psychosocial morbidity in adolescent females. The diagnosis is initially made by ultrasound. Magnetic Resonance Imaging is done in some cases where the underlying pathology is doubtful. A 13-year-old female patient presented to the Radiology department with the complaint of pain in the left breast for the past 10-13 days. The patient had no family history of breast cancer and drug intake. Her unilateral mammography (owing to age) and ultrasound of the breast was performed. After examination and ultrasound Surgical removal of this tumor was decided and the patient was referred to the surgery department for excision. Proper diagnosis and treatment at an early stage are necessary as it can lead to the progression of mass and can be turned into cancer.

Introduction

There are two types of breast masses reported-one is benign masses, and the other is malignant tumors. It can be detected either by pathological testing or by assessing with minimally invasive methods, the latter is preferable as it takes less time and resources than the former one. Regular physical assessment and imaging procedures such as sonography, MRI, and mammography are effective ways of breast mass diagnosis [1,2,3]. Fibroadenoma is a type of benign mass in the breast. The risk of breast cancer in these patients is more relative to normal people of the same age. For early detection and assessment, imagining studies are carried out mostly [4]. It is important to diagnose it in the early stages otherwise it can cause mental illness and can be progressive [5, 6].

Background

Fibroadenomas are benign lesions in the breast and occur in around 2% of adolescent females. This is found in 68% of all breast masses and 10-15% may be multiple [7]. Though these masses remain asymptomatic, these can cause pain as the size increases. 25 to 40 years of age is the peak incidence period of their occurrence but also common in adolescents [8]. It has no reason to occur at this age but could be due to the presence of some unknown antigens. The entity may be associated with Cowden syndrome where multiple hamartomas are present [9]. Conventional diagnosis is based on histopathological features. The diagnosis is specifically difficult when the patients are young [10].

Case presentation

A 13-years old female presented with a palpable mass in the left breast from 10-13 days at King Edward Medical University, Lahore in late 2020. This became slightly painful off and on, and more during monthly cycles. The size of the lump did not increase in this period of 10-13 days. A single lymph node was seen in the left axilla measuring 1cm with intact hilum and cortex.

The patient was having anxiety. There was no family history of this disease. There was no history of any previous interventional procedure. There was no history of trauma, pyorrhea, lactorrhea, burning sensation, fever, fatigue, or weight loss. The examination of the breast revealed a palpable mass on the outer quadrant of the left breast which was slightly tender and measured approximately 9 x 11cm. No skin thickening or nipple retraction was noted. No axillary lymphadenopathy was seen. No suspicious calcification or architectural distortion was seen.

The rest of the systemic examination was within normal limits. The patient belonged to a low-income background. Biochemical parameters including complete blood count, erythrocyte sedimentation rate, RFTs, LFTs, and C-Reactive protein were also within normal limits. Ultrasonography of the left breast revealed a hypoechoic mass in the left breast. These masses did not have any cystic component and there was no evidence of any calcification.

After examination and ultrasound Surgical removal of this tumor was decided. As there was no facility for this surgery available there some other hospitals were recommended to the patient. So, we don't have any further follow-up plan and information regarding the present condition of the patient.

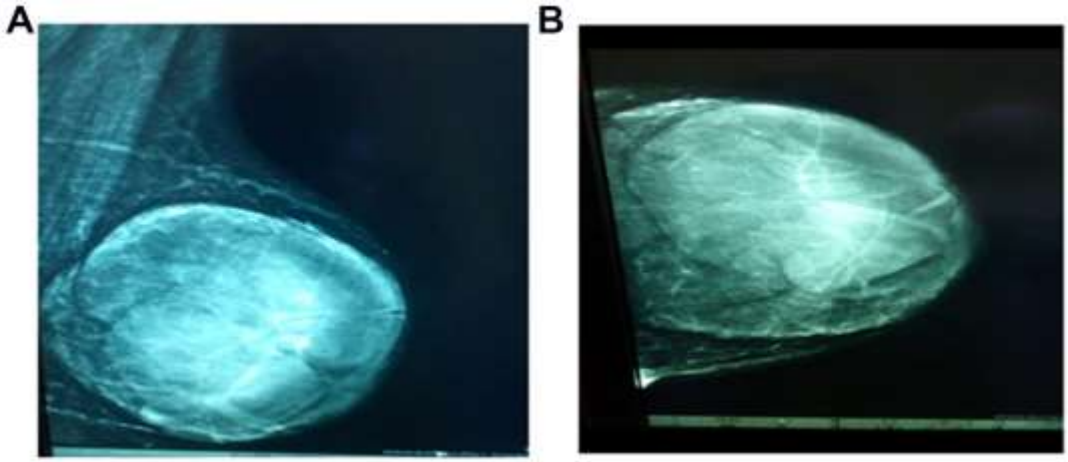

Fig.1: (Right=Ultrasound, Left=Mammogram) There was very less vascularity observed in the lesion. The margins were also well-defined without any abnormal vessels. A single lymph node is seen in the left axilla measuring 1cm with intact hilum and cortex.

Discussion

Fibroadenoma of the breast is an admixture of epithelial and stromal tissues. These tumors are often called breast mice because of their mobility in the breast tissue [11]. This should not be confused with fibro adenosis. The entity must be differentiated from other lumps as the carcinoma can also present similarly. These are divided into two categories as per their stroma and epithelial cell components as peri canalicular and intracanalicular. These have got intact and compressed glandular spaces, respectively. There is the proliferation of the stroma in the latter category. Fibroadenoma masses are easy to be removed as compared to malignant pathologies. These present as solitary firm, mobile, painless, rubbery, and slowly growing mass. Sometimes these can be of large size representing giant fibroadenoma [12]. These occur during the childbearing period and may regress after menopause. It is diagnosed via both ultrasound and mammography, which is not a gold standard for detection and still works just fine for settings like Pakistan. Mammography should be avoided in adolescent patients because the risk of breast cancer is low among them [13].

Conclusion

Solitary or multiple adolescent fibroadenomas are not uncommon but teenage fibroadenoma is rare in Pakistan. The current focus was its diagnosis via both ultrasound and mammography and if coupled it will give very accurate results. Contrast-enhanced dynamic MRI scanning provides a strong tool to differentiate fibroadenoma from the malignant pathologies as was in our present case. If the lesion is noticeably big and painful, then surgical excision is the answer and if not then monitoring and follow-up plan are done.

Authors contribution

SS, GB, BS, and AA have noted the proceeding and collected data, MU is the reporting radiologist, RN and ZA have written the manuscript, RN, UM and MS have supervised the whole study.

Conflict of interest

The authors declare no conflict of interest.

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