

Case Series

Rare lesions of the breast – Fibrocystic disease with chondroid metaplasia, giant lipoma and fibroadenoma with atypical ductal hyperplasia

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Abstract

This paper focused on 3 rare lesions of breast - an exceedingly rare case of fibrocystic disease of breast with predominantly chondroid metaplasia. Giant lipoma of breast which is infrequently observed because of rarity in size and location, with only very few case reports available in literature and fibroadenoma with atypical ductal hyperplasia (ADH) of breast which is an unusual finding in the adolescent or young adult female.

Key words

Breast, Chondroid metaplasia, Giant lipoma, Atypical ductal hyperplasia (ADH).

Introduction

This paper focused on three rare lesions of the breast – fibrocystic disease of breast with chondroid metaplasia, giant lipoma and fibroadenoma with atypical ductal hyperplasia.

The occurrence of cartilage in benign human mammary tumors is extremely rare. However cartilage is not uncommonly found in malignant mesenchymal and epithelial neoplasms of human breast. We have reported here a fibrocystic

disease of breast with predominantly chondroid metaplasia in a 45 years old woman.

Lipomas are one of the most common adipose tissue tumors having incidence of 16% of all mesenchymal tumors [1]. Lipomas are benign tumors of the breast [2]. They may be single or multiple and they are clinically asymptomatic. They usually developed as well circumscribed, encapsulated masses with a doughy feel that is freely mobile underneath the skin [2]. Giant lipomas are defined as lesions that have a diameter of at least 10 cm [2-4]. The diagnosis may be difficult due to normal adipose tissue of the breast [5]. Lipoma may cause asymmetry of the breast when grown up [5]. We have presented here an unusual case of 80 years old female patient with giant breast lipoma. The case presented was of interest because of age, size, and location.

Fibroadenoma with Atypical Ductal Hyperplasia (ADH) is a neoplastic intra ductal lesion with architectural and cytological features suggestive of but not diagnostic of low grade DCIS. It is also known as atypical intra ductal hyperplasia (AIDH), mammary intraepithelial neoplasias (MIN). We have reported here a case of fibroadenoma with ADH in 25 years young woman which is rare.

Case series

Case - 1

A 45 years old female presented with slow growing painless lump in breast on left side since 6 months. On examination, lump was present in left upper quadrant, non tender and mobile. Patient had undergone surgical excision and biopsy was sent to department of pathology for histopathological examination.

Gross features

Pathology received well circumscribed globular soft tissue mass measuring 6x4x3.5 cm. Cut section revealed multiple cystic spaces, yellowish and grey white areas. (Figure – 1A, 1B)

Figure – 1A, 1B: Gross appearance of well circumscribed tumor with cystic, yellowish and solid areas on cut section.

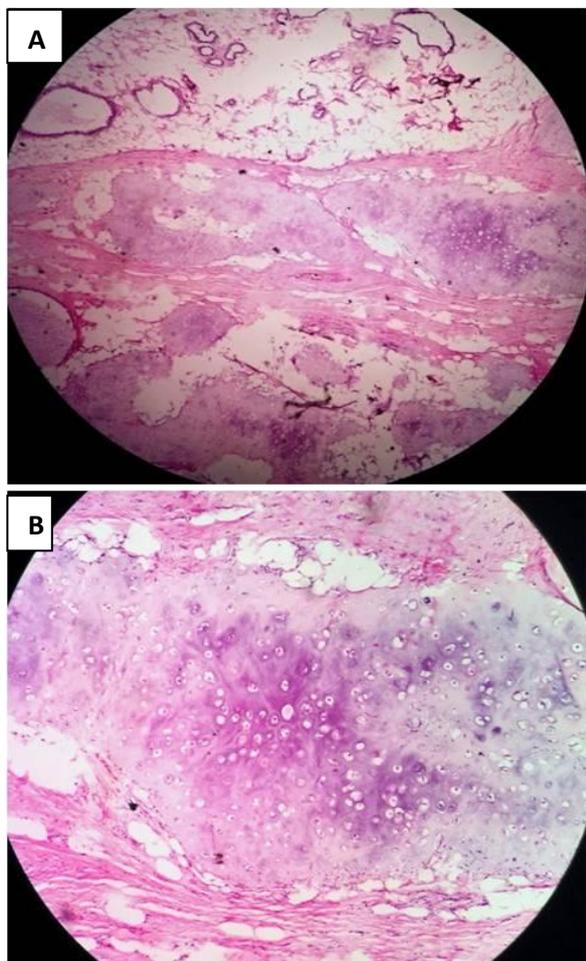


Microscopic appearance

H&E stained sections revealed cystically dilated glandular acini lining epithelium showing apocrine change surrounding stroma shows lobules of mature adipocytes and also extensive cartilaginous change. The lobules of cartilage contained closely arranged chondrocytes in lacunae, lacking in any significant degree of atypia. No mitosis was evident. (Figure – 2A, 2B)

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Figure – 2A, 2B: Micrograph revealed cystically dilated glandular acini surrounding stroma shows lobules of mature adipocytes and also extensive cartilaginous change (H&E stain, 100X and 400X)



Case - 2

A 80 years old female presented with slow growing painless lump in breast on right side since 1 year. On examination, lump was present in right upper and central quadrants, non tender, and mobile. USG was showing well circumscribed radiolucent avascular lesion. On Fine needle aspiration cytology (FNAC) of right breast lesion revealed cellular smears consisting mainly fragments of mature adipose tissue, a few single fat cells suggesting the diagnosis of lipoma.

Gross features

Pathology received well circumscribed skin covered soft tissue mass of dimensions 14x13x7

cm. Skin flap measuring 12x4 cm. Cut section revealed soft, yellow, greasy homogenous tissue separated by fine fibrous trabeculae. (**Figure – 3A, 3B**)

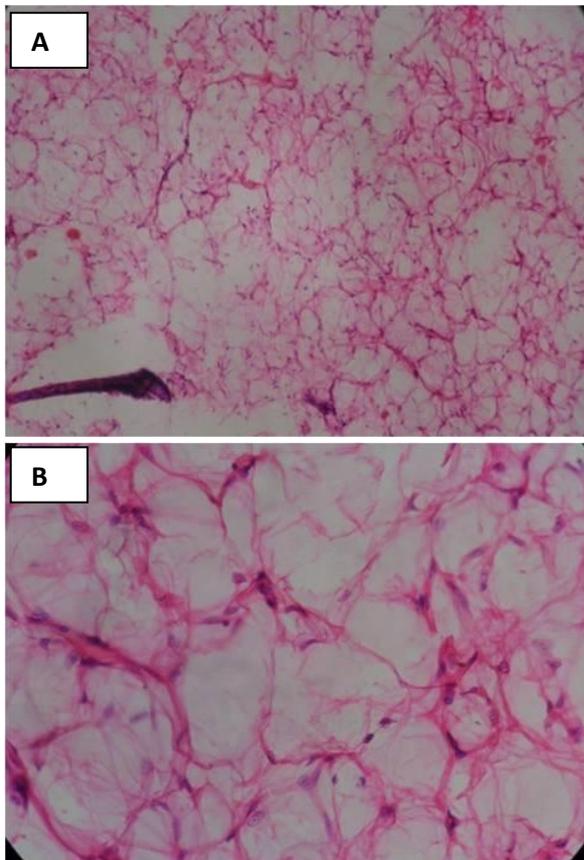
Figure – 3A, 3B: Breast lipoma - yellow, soft, greasy skin covered.



Microscopic features

Microscopy showed tumor composed of mature adipose tissue separated by thin fibrovascular septa. Individual cells were large and have abundant empty cytoplasm and a small eccentric dark nucleus. No evidence of atypia was seen. (**Figure – 4A, 4B**)

Figure – 4A, 4B: Microphotograph showed mature adipocytes in sheets with thin intervening fibrovascular septa (100X and 400X H and E Stain respectively).

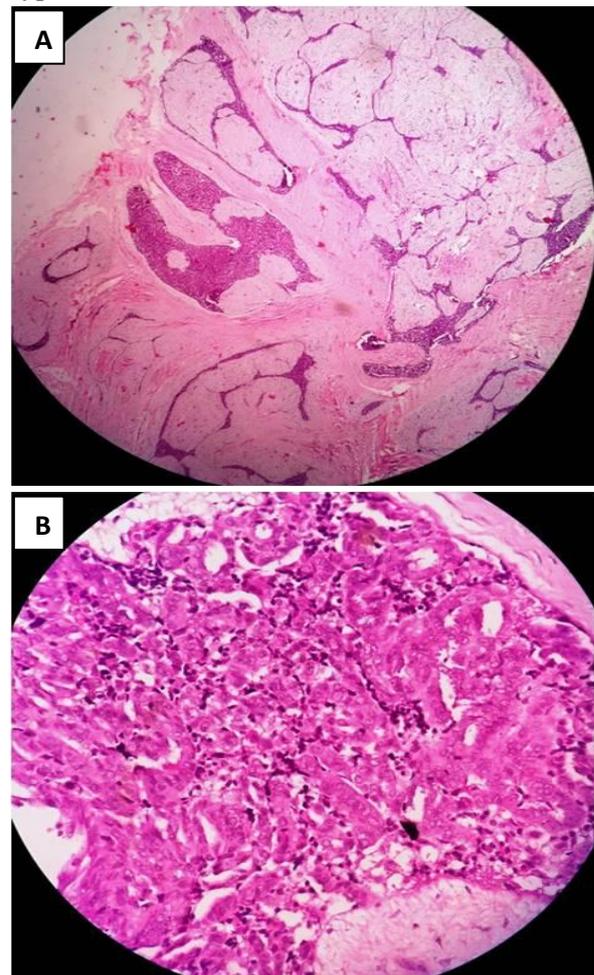


areas of acini showing atypical epithelial cells with moderate amount of cytoplasm with pleomorphic hyperchromatic nucleus. (**Figure – 6A, 6B**)

Figure – 5: Globular mass with homogenous tissue with slit like spaces on cut section.



Figure – 6A, 6B: Micrograph showing compressed and dilated acini surrounded by fibromyxoid stroma (H&E stain, 100X). At areas, acini showing cells with pleomorphic hyperchromatic nucleus (H&E stain, 400X).



Case - 3

A 25 years young female presented with lump in breast on right side since 4 months. On examination, lump was present in right central quadrant, non tender, mobile, not adherent to underlying fascia or muscle, skin above it was free and normal. No axillary lymph node involvement was present. Specimen was excised and was sent for histopathological examination.

Gross features

Pathology Department received globular soft tissue mass measuring 2.5x2x1 cm. Cut section showed capsulated homogenous tissue with slimy slit like spaces. (**Figure – 5**)

Microscopic appearance

Sections revealed capsulated tumor tissue showing compressed and dilated acini surrounded by fibromyxoid stroma. There were

Discussion

Case - 1

Cartilage is rarely seen in benign conditions of human breast like fibrocystic disease. Most often, cartilaginous components are associated with a primary malignancy of the breast [6]. Cartilage is also encountered in the breast as a component of benign chondrolipomatous tumor [6, 7]. The possible origins of cartilage in such tumors were discussed by Lugo, et al. in 1982 [8]. They concluded that chondrolipomatous tumor cannot be a part of hamartoma since it is not a normal component of human breast and neither can be called a choristoma because of presence of normal components like fat and breast ducts. They put forth the possibility of dystrophic chondrification following traumatic fat necrosis. An alternate explanation considered was metaplasia of the proliferating fibrous stroma in fibrocystic breast disease. Smith and Taylor in 1969 reviewed 35 patients with mammary lesions that contained either metaplastic bone and/or cartilage – none were chondrolipomatous [9]. Nobuyuki Uchida, et al. in 2004 presented a case of breast tumor with predominantly chondromatous areas and lacking any fat and muscular tissue [10]. This case was similar to our case where we found predominantly hyaline cartilage surrounded by fibrocollagenous tissue but mammary ducts and adipose tissue was also seen within the tumor mass.

Case - 2

Lipomas are benign fatty tissue tumors [2]. They are usually solitary and may be difficult to diagnose in large or postmenopausal breasts [3]. Giant breast lipomas are usually long-standing and slow-growing, unilateral breast lesions. If large in size, they may give rise to a cosmetic problem or interfere with function as a result of the anatomical position [5].

For a more accurate diagnosis, imaging techniques (ultrasonography, mammography) are helpful particularly in planning the best therapeutic strategy for the individual patient [5].

Breast lipomas may be misdiagnosed as carcinomas, fibroadenomas, phyllodes tumours and duct papillomas. It should be mentioned that “pseudo”-lipomas, hamartomas (adenolipomas), angioliipomas, angiomyoliipomas, atypical lipomatous tumours and liposarcomas can mimic lipomas [12]. Sometimes it is difficult to diagnose and biopsy may be required [11]. Each of these tumors have characteristic histological features which helps to arrive at a correct diagnosis.

The lipomas may present as hard, fixed masses due to the post-traumatic fat necrosis [5]. The definitive diagnosis of these patients is crucial [11]. Thus, a detailed history and imaging techniques are required for these patients [12].

Management of giant breast lipomas often requires surgical intervention for cosmetic reasons or to alleviate the symptoms of discomfort and heaviness [13].

Case - 3

Fibroadenoma with atypical ductal hyperplasia is neoplastic intra ductal lesion with architectural and cytological features suggestive but not diagnostic of low grade DCIS may be present in women as young as 18-26 years [14]. On mammography, lesions may be identified as masses, asymmetrical densities, micro calcifications and architectural distortions. On ultrasound, lesions appear as hypoechoic masses with irregular shape, microlobulated margins, abrupt interface. Underestimation rate of ADH is high (56% by mammograph/ USG and 32% by MRI) [15].

Micrograph shows ducts filled by uniform population of cells with cytological features of low grade DCIS but lack architectural features due to only partial filling of ducts or no uniform sharply punched out spaces, microacini or characteristic micropapillae and have excluded solid low grade DCIS. It should be differentiated from flat epithelial atypia, which shows replacement of epithelial cells by single or stratified layer of cells with low grade

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cytological atypia resembling low grade DCIS, but does not fulfill criteria of ADH or low grade DCIS.

ADH shows positivity for Cytokeratin 8/18 stains and only 10% of ADH express high molecular weight keratins (CD903) which is useful in differentiating it from usual ductal hyperplasia in which there is mix of cell types (luminal, basal, myoepithelial) that express different cytokeratins.

Relative risk of carcinoma is 4-5x, lower risk if 0-2 foci at core biopsy. Estimated 10year cancer risk is 17-26% [16]. Risk for breast cancer is higher for younger women and those with multiple foci of ADH.

Conclusion

In summary, the cases described here and the over view demonstrate the heterogeneity of fibrocystic disease with chondroid metaplasia, giant lipoma and fibroadenoma with atypical ductal hyperplasia in imaging diagnostics and their differential diagnosis.

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