Case Report

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A Rare Case of Chondrolipoma of the Breast

Pathology Section

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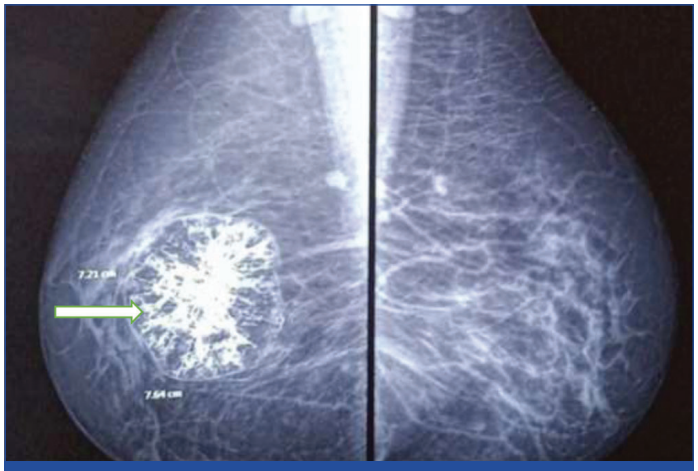
ABSTRACT

In 1971, Arrigoni MG et al., used the term "hamartoma" for breast lesions in 10 patients who presented with encapsulated breast tumours clinically and grossly resembling fibroadenomas. Hamartomas in breast lesions are very uncommon and include adenolipoma and chondrolipoma. Despite the availability of imaging modalities, it is often difficult to distinguish fibroadenoma from breast carcinoma. Chondrolipoma of the breast is a rare benign mesenchymal tumour composed of adipose and mature cartilaginous tissue, which is often mistaken for malignant lesions in preoperative studies, leading to overdiagnosis and overtreatment. Hence, a proper histopathological examination is required for a correct diagnosis. Only eight cases have been reported in the literature. This report presents one such rare case of lump in a 67-year-old female, which was suspected to be a fibroadenoma clinically and radiologically, but was diagnosed as chondrolipoma on histopathological examination. All routine investigations were within normal limits, and a clinical diagnosis of fibroadenoma was made. Mammography was done, comprising fat, soft tissue, and calcific strandings along with coarse calcific specks suggestive of BI-RADS (Breast Imaging-Reporting and Data System) Category 3: high probability of being benign.

Keywords: Cartilage, Hamartoma, Mesenchymal tumour of breast

CASE REPORT

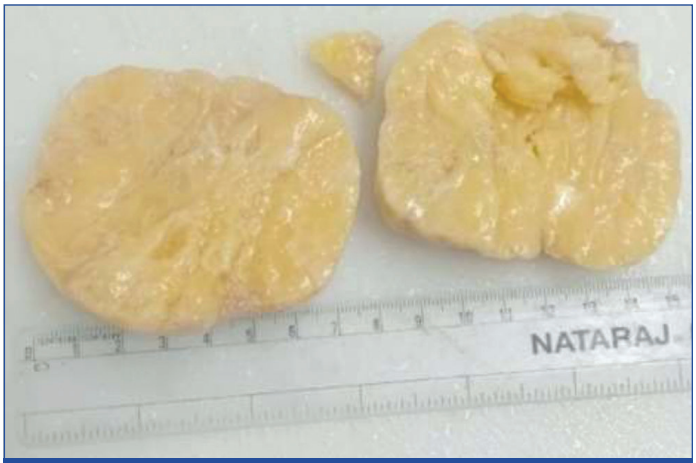
A 67-year-old postmenopausal woman presented with complain of a lump in the right breast. The lump had been present for six months and was gradually increasing in size. There was no history of nipple retraction or nipple discharge. On physical examination, the lump measured 5.4×5.0 cm in the lower outer quadrant of the right breast. It was freely mobile and non tender, not attached to the overlying skin or deeper structures. The skin, nipple, areola, and ipsilateral axilla were unremarkable. Based on these findings, a clinical diagnosis of fibroadenoma was made, and Fine Needle Aspiration Cytology (FNAC) was advised, but the patient refused. Mammography was performed, revealing a well-defined echogenic mass measuring approximately 76 mm×72 mm in the lower outer quadrant of the right breast. The mass was sharply delineated from the surrounding breast tissue and comprised of fat, soft tissue, and calcific strandings along with coarse calcific specks, suggesting BI-RADS Category 3: a high probability of being benign [Table/Fig-1]. The left breast was unremarkable.



[Table/Fig-1]: Mammography of right breast showing a well-defined echogenic mass measuring approx. 76 mm×72 mm seen in lower outer quadrant of right breast (arrow).

Routine investigations, including complete blood count and urine routine examination, were within normal limits. The patient was then advised to undergo surgical resection of the lump. The lump was excised and sent for histopathological examination to the pathology department.

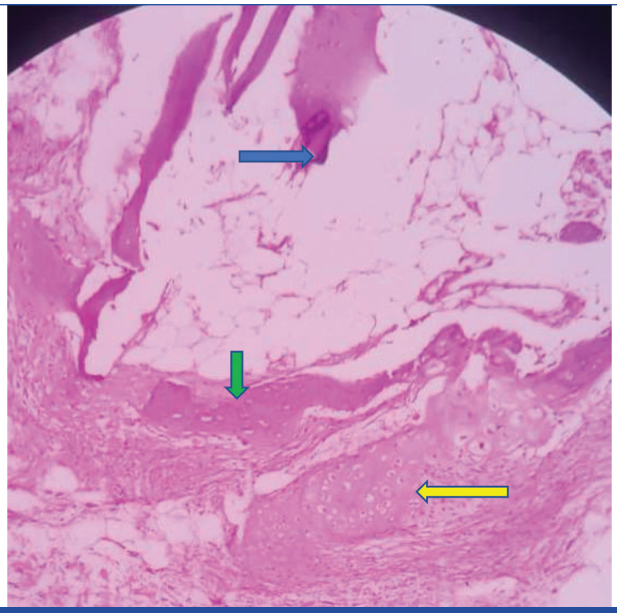
A yellowish fibrofatty mass measuring 5.2×5.0 cm was received. It was firm and well-circumscribed with a smooth outer surface. The cut surface showed yellow soft areas and small white gritty areas [Table/Fig-2]. The sections were processed after decalcification, and routine H&E staining was performed. Microscopic examination revealed a tumour composed of mature adipose tissue intermingled with lobules of hyaline cartilage. Few areas of calcification and osseous metaplasia were also noted [Table/Fig-3-5a,b]. Mammary tissue was not seen in the tumour. Based on these findings, a diagnosis of chondrolipoma was made. Postoperative follow-up was conducted for three months and was uneventful.



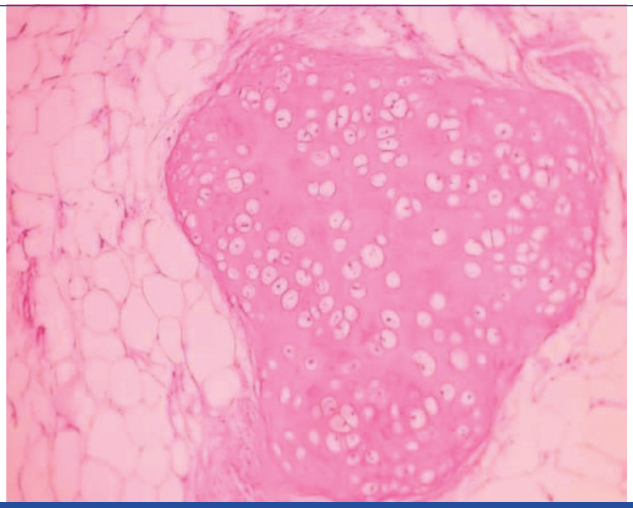
[Table/Fig-2]: Gross photograph of the chondroid lipoma showing yellow soft areas and small white gritty areas.

DISCUSSION

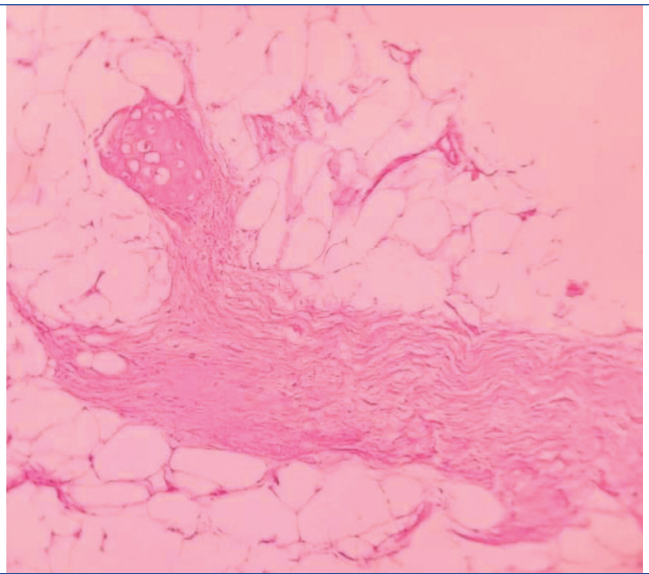
Arrigoni MG et al., in 1971 used the term "hamartoma" for the breast lesions in 10 patients who presented with encapsulated breast tumours clinically and grossly resembling fibroadenomas. Hamartomas of the breast are very uncommon and include adenolipoma and chondrolipoma. Despite the availability of imaging



[Table/Fig-3]: Showing tumour composed of mature adipose tissue intermingled with lobules of hyaline cartilage (yellow arrow). Area of calcification and osseous metaplasia were also seen (blue and green arrow), (H&E, X40).

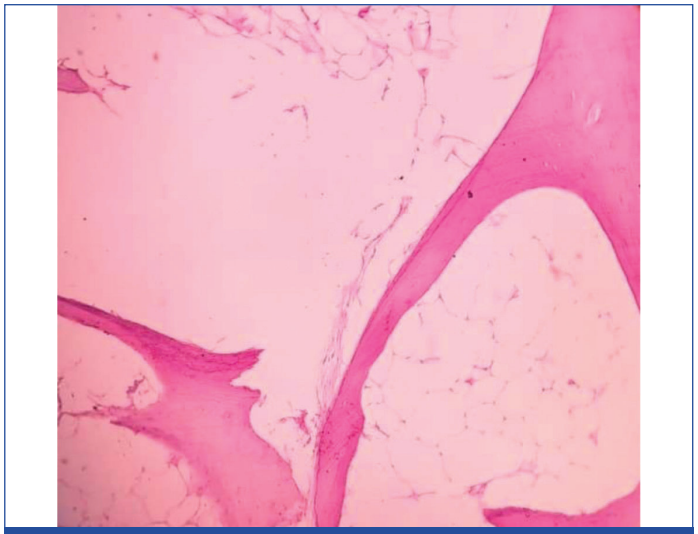


[Table/Fig-4]: Showing tumour composed of mature adipose tissue intermingled with lobules of hyaline cartilage, (H&E, X100).



[Table/Fig-5a]: Showing tumour composed of mature adipose tissue intermingled with fibrocollageous tissue and osseous metaplasia, (H&E, X100).

modalities, it is often difficult to distinguish chondrolipoma and fibroadenoma from breast carcinoma [1]. Meis JM and Enzinger FM initially described the rare entity of chondrolipoma originating from soft tissue in 1993 [2]. The presence of mesenchymal elements



[Table/Fig-5b]: Showing tumour composed of mature adipose tissue intermingled with bony tissue, (H&E, X100).

modifies the structure of breast lipoma leading to the development of fibrolipoma, angiolipoma, osteolipoma, myxolipoma, or chondrolipoma. Chondrolipoma is considered a cartilaginous metaplasia encountered in lipomas of large size and long duration [2,3]. They are predominantly seen in women across a wide age range from 14 to 70 years, with a median age of 35 years [4]. Chondrolipomas are delimited, asymptomatic lesions that develop in the subcutaneous tissues or at the level of the skeletal muscles, more commonly on the chest wall, back extremity, breast, tongue, buccal mucosa, etc [5,6]. Benign tumours like fibroadenoma, intraductal papilloma, phyllodes tumour, and mammary tissue also show cartilage on microscopy. Cartilaginous tissue is usually associated with malignancies such as metaplastic carcinoma and sarcoma. However, calcification was an unusual finding seen in present case and was only reported in three cases earlier [3]. Only eight cases have been reported in the literature, and present report is one such rare case of lump in the right breast in a 67-year-old female, suspected to be fibroadenoma clinically and radiologically. Theories associated with the histogenesis of chondrolipoma include: a) Glandular components found inside the tumour act like a choristoma; b) Immature mesenchymal cells differentiate towards both adipocytes and chondrocytes; and c) These tumours originate from cartilaginous metaplasia of the adipose tissue in lipomas [2].

On mammography, it usually presents as a radiolucent mass due to the increased amount of fatty tissue in the absence of mammary stroma or ducts, along with focal opacities induced by the presence of islets of cartilaginous structures [2,3]. The differential diagnosis is broad and includes giant fibroadenoma and malignant lesions such as myxoid liposarcoma, extraskeletal myxoid chondrosarcoma, soft-tissue chondroma, myoepithelial tumours, and osteosarcoma [4,7,8]. Myxoid liposarcoma shows mildly atypical spindled cells deposited around a delicate, plexiform vascular pattern. Extraskeletal myxoid chondrosarcoma has fibrous septa that give it a distinct lobulated appearance. Soft-tissue chondroma occurs in hands and feet and often contains multinucleated giant cells and true hyaline cartilage. Osteosarcoma displays tumour permeation with bone erosion and cortical bone destruction. Tumour cells exhibit pleomorphism with diverse morphology and hyperchromatic nuclei. Mature adipocytes are intensely immunoreactive to S-100 protein, unlike minimally reactive lipoblasts, and variable focal immune reactivity to CD68 and cytokeratin is observed [4,7,8]. Cytogenetic analysis reveals a balanced translocation t (11;16) (q13;p12-13) involving the fusion of C11orf95 and MKL2 [4].

CONCLUSION(S)

Chondrolipoma is a rare benign tumour of the breast that can be confused with a malignant tumour on mammography. Preoperative

biopsy and histopathological examination are mandatory and usually sufficient for a definitive diagnosis and to demonstrate the absence of malignancy. Therefore, it should be considered in the differential diagnosis when examining a breast lump with adipose tissue on histology.

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