Mammary Chondrolipoma: A Rare benign mimicker of Phyllodes tumor

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Introduction

Benign mesenchymal tumors of the breast are infrequent, with lipomas constituting the majority [1]. Variants such as spindle cell lipoma and fibrolipoma are relatively more common, whereas those containing cartilage are exceedingly rare. Chondrolipoma is characterized by the admixture of mature adipose tissue and well-formed hyaline cartilage. Only a handful of cases involving the breast have been documented in literature. We report a case of mammary chondrolipoma in a middle-aged woman, highlighting its diagnostic challenges and differential considerations.

Case Report

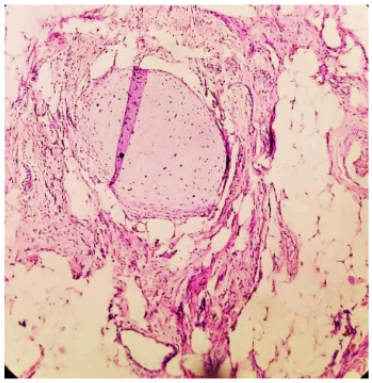
A 40-year-old woman presented with a gradually enlarging, painless swelling in the right breast, first noticed in adolescence. On examination, there was a firm, mobile, non-tender mass measuring approximately 15 × 10x 6 cm. The overlying skin was pinchable and unremarkable. Magnetic resonance imaging (MRI) revealed a well-defined, lobulated lesion measuring 16 × 12 × 8 cm, appearing hypointense on T1 and hyperintense on T2 SPAIR sequences (Fig. 1). Repeated fine-needle aspiration yielded only hemorrhagic material. Based on clinical and radiological findings, a phyllodes tumor was suspected, and a simple mastectomy was performed.

Fig.1 shows MRI mammography of a heterodense mass in right breast

Grossly, the mastectomy specimen measured 17 × 13 × 10 cm with nipple-areola complex attached. The external surface was bosselated. The cut surface showed predominant yellow, fatty areas with scattered grey-white, glistening regions (Fig. 2).

FIG.2 showing cutsurface of neoplasm with predominantly yellow areas and focal greywhite glistening areas (arrow).

Microscopy demonstrated a lobulated tumor composed of mature adipocytes separated by fibrous septa. Multiple foci contained mature hyaline cartilage islands (Figs. 3 & 4). Smooth muscle bundles were identified, highlighted by desmin immunohistochemistry (Fig. 5). No atypia, mitoses, or malignant features were observed. A final diagnosis of chondrolipoma of the breast was rendered.



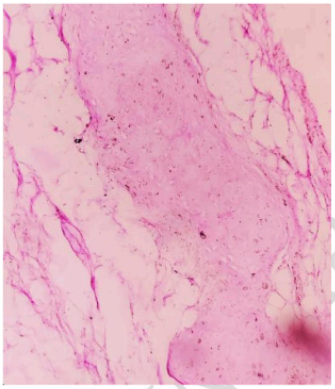


Fig.3 &4 showing a neoplasm composed of lobules of mature adipocytes and islands of cartilage

(10x view, H&E)

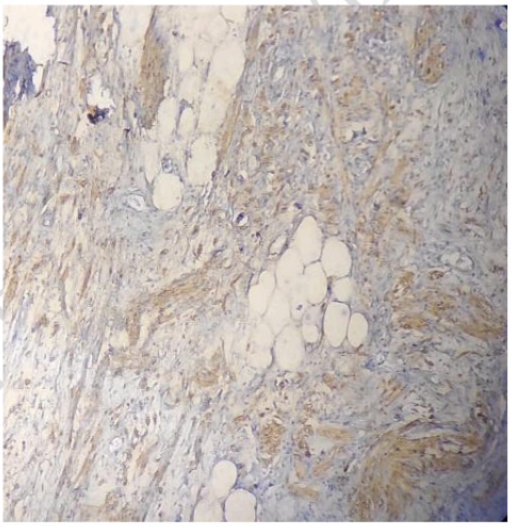


Fig.5 IHC- Desmin to highlight the presence of smooth muscle bundles

(10x view)

Discussion

Chondrolipoma of the breast is an exceptionally rare entity, with very few cases described in medical literature [2,3]. Its recognition is important in the context of women's health, as breast lumps in middle-aged women are more commonly suspected to be fibroadenomas, phyllodes tumors, or carcinomas. In our case, the lesion clinically and radiologically mimicked a phyllodes tumor, which is a far more common differential encountered in gynecology and breast practice [2].

The pathogenesis of chondrolipoma remains debated. Two leading hypotheses have been proposed: (1) stromal metaplasia, in which pre-existing connective tissue undergoes cartilaginous transformation, and (2) differentiation from pluripotent mesenchymal cells [4,5]. Long-standing lipomatous tumors, as in our patient, may provide the environment for such changes to occur [6].

From a histological perspective, the distinguishing feature of chondrolipoma is the presence of well-formed hyaline cartilage within mature adipose tissue [3,6]. This helps differentiate it from chondroid lipoma, which exhibits immature cartilaginous areas in a myxoid stroma, and from malignant mimics such as liposarcoma with chondroid change or extraskeletal chondrosarcoma [7]. The presence of smooth muscle bundles in our case, confirmed by desmin immunohistochemistry, has also been described in some benign mesenchymomas [5].

The clinical significance lies in avoiding misdiagnosis. In the absence of histopathology, patients may undergo unnecessary radical procedures under the suspicion of malignancy. For gynecologists and breast surgeons, awareness of this rare benign tumor ensures that management decisions remain conservative, avoiding overtreatment while still addressing patient anxiety regarding large or long-standing breast masses.

Conclusion

Chondrolipoma of the breast is an unusual benign tumor that can clinically mimic more common neoplasms, particularly phyllodes tumor. Recognition of its characteristic histopathological features ensures accurate diagnosis and prevents overtreatment.

Declarations:

Conflicts of Interest: None declared.

Funding: None.

Ethical Approval: Obtained.

Informed Consent: Written consent was obtained from the patient for publication of clinical details and images.

References

1. Enzinger FM, Weiss SW. Soft Tissue Tumors. 7th ed. Philadelphia: Elsevier; 2020.
2. Banev SG, Filipovski VA. Chondrolipoma of the breast: case report and review of the literature. Breast. 2006;15(3):424–5.

3. Dharkar DD, Kraft JR. Benign chondrolipomatous tumour of the breast. Postgrad Med J. 1981;57(664):129–31.
4. Jenstrom P, Lindberg AL, Meland DN. Osteogenic sarcoma of the mammary gland. Am J Clin Pathol. 1963;40:521.
5. Benisch B, Peison P, Sarno J. Benign mesenchymoma of the breast. Mt Sinai J Med. 1976;43:530.
6. Weiss SW, Goldblum JR. Cartilaginous soft tissue tumors. In: Strauss M, editor. Enzinger and Weiss's Soft Tissue Tumors. 4th ed. St. Louis: Mosby; 2001. p.1361.
7. Pandiaraja J, Viswanathan S. Chondrolipoma breast: an uncommon presentation. J Clin Diagn Res. 2014;2(4):3.

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