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CASE REPORT

MAMMARY CHONDROLIPOMA: A RARE BENIGN MIMICKER OF PHYLLODES TUMOR

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Abstract

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.

Introduction:-

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, having high signal intensity with focal areas of lower intensity on T1 and heterogenous on T2 SPAIR sequences (fig. 1). Repeated fine-needle aspiration yielded only hemorrhagic material.

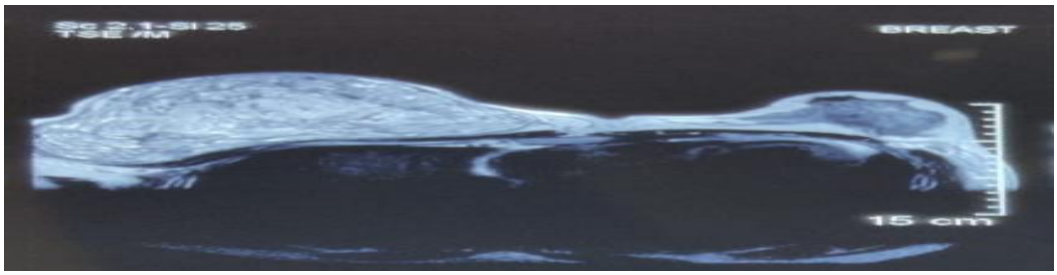

Fig.1 shows MRI image of a mass in breast with heterogenous signal intensity

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Based on clinical and radiological findings, phyllodes tumor was suspected, and a simple mastectomy was performed. Grossly, the mastectomy specimen measured 17 × 13 × 10 cm with nipple-areola complex intact. The external surface was bosselated. The cut surface showed predominant yellow, fatty areas with scattered grey-white, glistening regions (fig. 2).

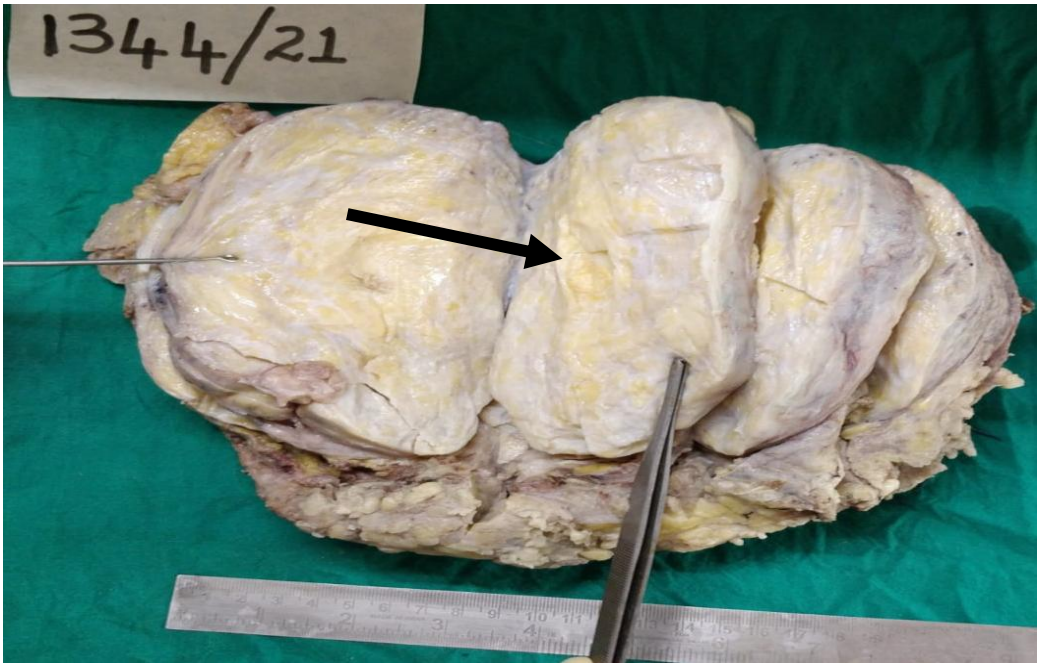

Fig.2 showing gross image of breast mass with predominantly yellow areas and focal greywhite glistening areas (arrow).

Microscopy demonstrated a well defined 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.

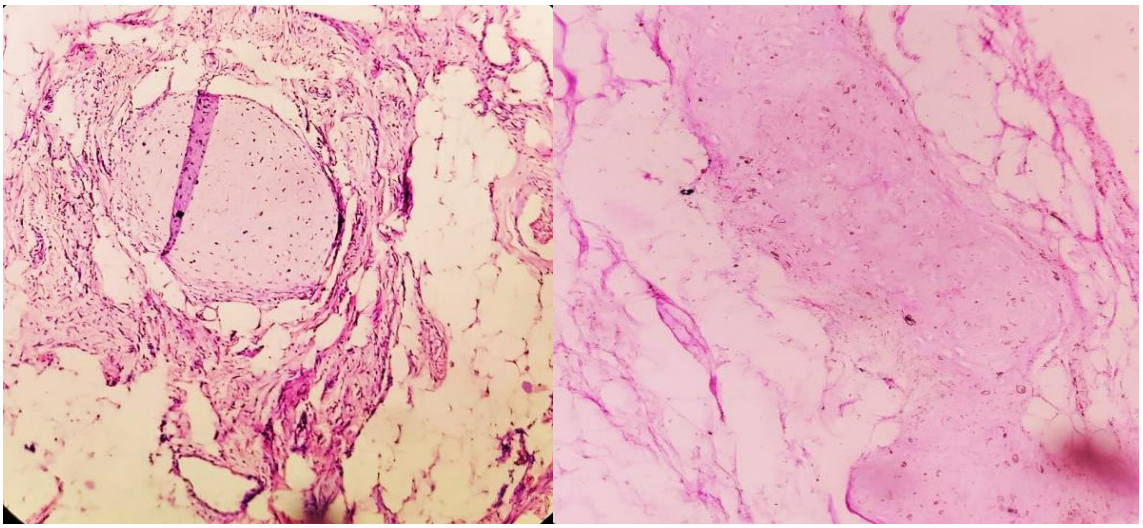

Fig.3&4 showing a benign neoplasm composed of lobules of mature adipocytes interspersed with islands of benign cartilage (10x view, H&E)

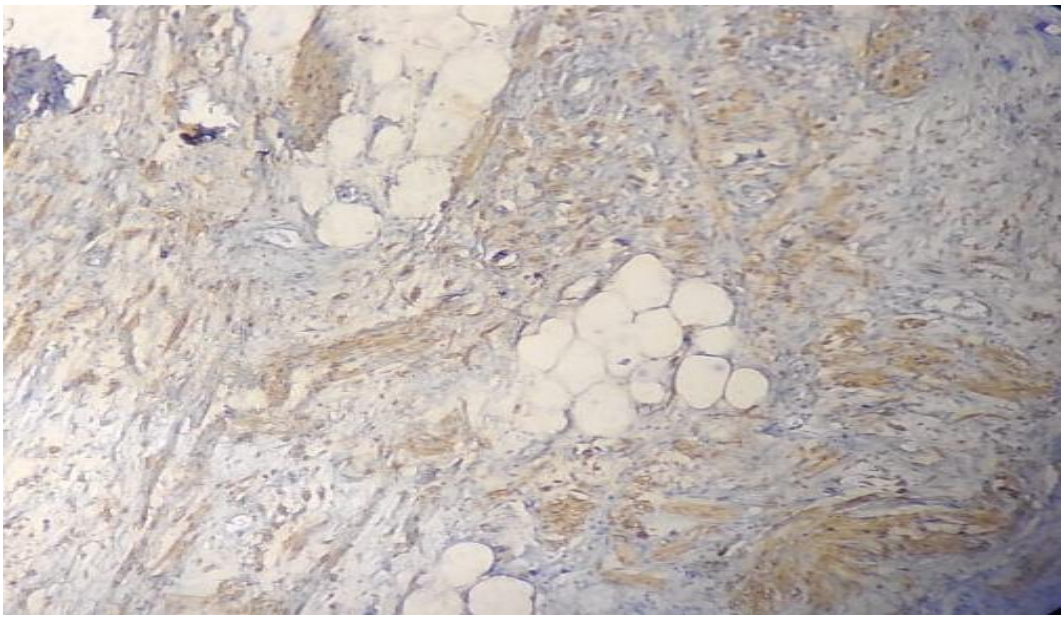

Fig.5 IHC desmin to highlight the presence of smooth muscle bundles within the lipomatous areas(10x view)

Discussion:-

Chondrolipoma of the breast is an exceptionally rare entity, with only twenty cases described in medical literature [2]. 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]. Radiology also plays a crucial role in diagnosing the lesion.on t1-weighted mri, chondrolipomas appear heterogeneous, exhibiting areas of high signal intensity consistent with fatty tissue. The signal completely disappears on the fat-suppressed sequence, confirming its adipose nature. On t2-weighted images, the internal septations are demonstrated via low signal intensity, a feature often seen in well-differentiated fatty masses. Also heterogenous signals imply the presence of non-fatty tissues within the mass, like in our case[8,9]. The management of malignant tumors typically involves a multimodal approach, including wide surgical excision complemented by radiotherapy and chemotherapy.

In contrast, benign lesions are adequately treated with a conservative or marginal resection, as they generally lack invasive potential.[10-13] thus, 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.

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Ethical approval: obtained.

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

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