

# Fibroadenoma with squamous metaplasia

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## ABSTRACT

**Fibroadenoma is the most common benign breast tumour in adolescent and young women. Squamous metaplasia in fibroadenoma is not a common finding and has not yet been reported in northeast India. Squamous metaplasia in fibroadenoma probably arises from the myoepithelial cells. A case of fibroadenoma with squamous metaplasia in a 20-year-old unmarried woman is reported.**

**Keywords: breast tumour, fibroadenoma, myoepithelial cell, squamous metaplasia**

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## INTRODUCTION

Fibroadenoma is a benign tumour with stromal and epithelial elements.<sup>(1)</sup> Autopsy studies demonstrate that fibroadenomas are present in approximately 10% of women.<sup>(2)</sup> Several changes may occur within the epithelial elements of the fibroadenoma, including apocrine metaplasia and varying degrees of epithelial hyperplasia.<sup>(3)</sup> Apocrine metaplasia is a fairly frequent component of fibroadenoma; however, fibroadenoma with squamous metaplasia is a rare entity.<sup>(4)</sup>

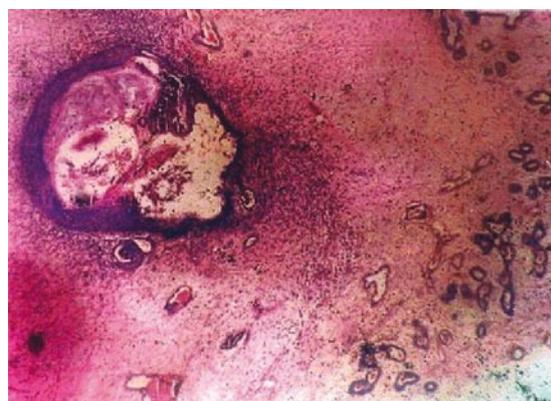
## CASE REPORT

An unmarried Hindu woman aged 20 years, presented with a single painless lump in the left breast, which was observed about six months prior to presentation. The lump was single, measuring about 2 cm in diameter, firm in consistency, non tender, and freely mobile. Axillary lymph nodes were not palpable. A provisional diagnosis of fibroadenoma of the left breast was made and the patient was subjected to lumpectomy at the Regional Institute of Medical Sciences Hospital, Imphal, Manipur, India.

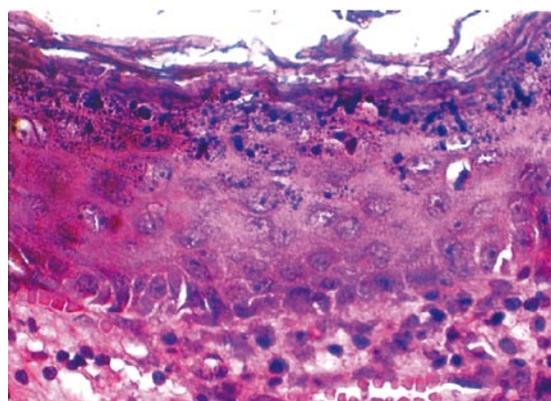
Gross examination showed a single, encapsulated, globular, whitish tissue measuring 2 cm in diameter, with a firm consistency. The cut section was a greyish-white solid and bulging with a whorled-like pattern (Fig. 1). Multiple sections studied showed delicate, cellular, fibroblastic stroma enclosing glandular and cystic spaces lined by ductal epithelium. A few cystically-dilated spaces lined by multilayered squamous cells



**Fig. 1** Photograph shows the lumpsectomy specimens.



**Fig. 2** Photomicrograph of fibroadenoma shows squamous metaplasia (Haematoxylin and eosin, × 100).



**Fig. 3** Photomicrograph of fibroadenoma shows squamous metaplasia (Haematoxylin and eosin, × 400).

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were also present (Figs. 2 & 3). A diagnosis of pericanalicular fibroadenoma with squamous metaplasia was made.

## DISCUSSION

Fibroadenoma is the most common benign breast disorder in adolescent and young women.<sup>(5)</sup> The present view is that fibroadenoma arises as a result of an abnormal proliferation and involution of the breast due to hormonal fluctuations and are not truly neoplastic.<sup>(6)</sup> Fibroadenomas are associated with a mild increase in the risk of subsequent breast cancer, especially when they are associated with fibrocystic change, proliferative breast disease or a family history of breast cancer.<sup>(7)</sup>

These tumours are usually composed of glandular and connective tissue elements.<sup>(8)</sup> The appearance varies from case to case, depending on the relative amounts of the two components. The tubules are lined by cuboidal or low columnar cells with round uniform nuclei resting on a myoepithelial cell layer. The stroma is made up of loose connective tissue rich in acid mucopolysaccharides.<sup>(9)</sup> Morphological changes found in fibroadenomas are hyalinisation, calcification, ossification and presence of a reactive type of multinucleated giant cells.<sup>(10)</sup>

An aetiological role for the myoepithelial cells in the development of squamous metaplasia, spindle cell carcinoma, mucoepidermoid carcinoma and typical squamous cell carcinoma of the breast has been suggested. The squamous changes in the breast probably begin within the myoepithelial cell layer, before eventually involving the entire acinus. Squamous metaplasia of the breast may result from myoepithelial cell differentiation in a manner analogous to the development of squamous lesions in the uterine cervix and salivary gland.<sup>(11)</sup> The myoepithelial cell origin of the metaplastic squamous cells is supported by the histological findings of transition between myoepithelial cells and squamous cells along with immunohistochemical expressions of actin, vimentin and S-100 protein in the metaplastic squamous

cells support.<sup>(12)</sup> In fine-needle aspiration biopsy, differentiation between squamous metaplasia in fibroadenoma from pure squamous cell carcinoma, phyllode tumours and metaplastic changes in ductal breast carcinoma, is required in the presence of squamous cells.<sup>(13)</sup> As squamous metaplasia is not common in fibroadenoma, phyllode tumours may be considered when there is abundant squamous metaplasia in a background of fibroepithelial neoplasm, that demonstrates stromal hypercellularity and a leafy pattern.<sup>(14)</sup> In conclusion, squamous metaplasia, even though it is not common, is found in fibroadenoma as reported in the present case.

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