CASE REPORT

Sclerosing lobular hyperplasia – cytological similarity to fibroadenoma

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Abstract

Mammary sclerosing lobular hyperplasia (SLH) is a rare, benign, fibroproliferative tumour-like lesion of adolescent and young women often of African-American heritage. Fine-needle aspiration cytology of mammary SLH shows characteristic features that include an absence of stromal fragments. We report a 45-year-old woman who presented with a gradually enlarging, painless, mobile 4-cm tumour in her left breast. Fine-needle aspiration cytology performed preoperatively was characterized by some fibroadenoma-like features including the presence of stromal fragments and bare nuclei. However branched tubular fragments, typical of fibroadenoma, were not seen. A diagnosis of benign epithelial lesion of the breast was offered, and the possibility of a fibroadenoma was suggested. Excision biopsy histology revealed SLH. The key cytological features of mammary SLH are bland ductal epithelial cell clusters, few scattered fragments of stroma, relatively clean background with a fair number of bare nuclei. However these are not diagnostic as they overlap with those of fibroadenoma and distinction between the two benign entities is of no clinical significance. The definitive diagnosis of SLH requires histopathological evaluation.

Keywords: Fine-needle aspiration cytology, breast, sclerosing lobular hyperplasia, fibroadenoma

INTRODUCTION

Mammary sclerosing lobular hyperplasia (SLH) is defined as prominent hyperplasia of the lobules with sclerosis of the interlobular stroma. It is an uncommon benign fibroproliferative tumour-like lesion of adolescent and young women often of African-American heritage. It presents as a palpable, firm, well-circumscribed lump in the breast of a young woman. The incidence is about 3%. Its incidence is approximately one-third that of fibroadenoma. The low frequency of its diagnosis could be attributed to its being overlooked by the pathologist, as it may coexist with fibroadenomas and when it does so it is often overgrown by fibroadenoma. Thus, this lesion may be seen in breast biopsies excised for fibroadenoma. Fine-needle aspiration cytology (FNAC) of mammary SLH is said to show characteristic features that include an absence of stromal fragments. SLH is a benign lesion and is not associated with an increased risk for carcinoma of the affected breast. Surgical excision is curative. Till date, very few reports on the cytomorphologic features of this entity have been published. Majority of these reports emphasized the absence of stromal fragments in the cytological preparations. To the best of our knowledge only one case report described the presence of stromal fragments in the cytological preparations of mammary SLH.

CASE REPORT

We describe a case of SLH that occurred in the left breast of a 45-year-old woman, presenting as a gradually increasing, freely mobile, painless lump of 2 years duration. She complained of associated breast pain coinciding with her menstrual cycles. There was no history of preceding trauma, nipple discharge or any changes of the overlying skin. Her medical history and family history were unremarkable. Physical examination revealed a well-defined, firm, relatively mobile, nontender lump in the inner lower quadrant of the left breast. The nipple, areola and skin appeared normal. No associated lymphadenopathy was present. Systemic examination did not reveal any positive
findings. An ultrasound of the breast revealed a solid mass with features of a fibroadenoma. The patient underwent fine-needle aspiration cytology followed by a left breast lumpectomy.

**Pathologic findings:**
Fine-needle aspiration cytology showed a moderately cellular aspirate with some fibroadenoma-like features including the presence of stromal fragments (Figure 1). “Staghorn-like” branched tubular fragments were not seen. The mammary ductal epithelial cells had round to oval, regular nuclei with dispersed chromatin. The cytoplasm was moderate and basophilic. Few scattered foci of fibromyxoid stroma were seen.

Gross examination of the excised mass revealed a relatively well-circumscribed nonencapsulated lesion measuring 5x4x3 cm (Figure 2). The cut surface was grayish-white, vaguely nodular and firm. It was homogenous except for a few slit-like spaces. The diagnosis of SLH was made on histological examination that showed a nonencapsulated lesion with well-preserved acinar architecture showing lobular hyperplasia and sclerosis of intralobular and interlobular stroma (Figure 2).

**DISCUSSION**
SLH is a relatively rare benign fibroproliferative lesion of the breast.\(^1\) This lesion is also called fibroadenomatosis, fibroadenomatoid mastopathy or fibroadenomatoid hyperplasia.\(^2\) Kovi et al. initially described it in 1984.\(^3\) They reviewed 590 benign breast lesions diagnosed in their institution during a period of 6 months and found that 18 (3%) of them were SLH. A single case has been reported of SLH occurring as bilateral masses in an elderly woman after reduction mammoplasty.\(^1\)

The lobule is the basic structural unit of the female breast. Each lobule is composed of alveolar ducts and acini originating from it, together known as the terminal duct lobular units. In lobular hyperplasia the number of acini within the lobules are increased.\(^2\) Kovi et al. noted an average of 78.2 acini in hyperplastic lobules, in comparison to 29.6 acini in lobules of normal women aged 20–40 years.\(^5\) SLH is also characterized by sclerosis of the intralobular and interlobular stroma.\(^2\) Atypia is not a feature of SLH, and is not associated with an increased risk for carcinoma of the affected breast.\(^3\) SLH occurs at approximately one third the incidence rate of fibroadenoma.\(^1\) Kovi et al. noted frequent association between SLH and fibroadenomas.\(^5\) However Poulton and his coworkers found only one patient with a fibroadenoma and a coexistent focus of SLH in their study involving 15 patients.\(^3\) Kovi et al hypothesized that when these lesions coexist, one lesion tends to overgrow the other, and more often SLH is overgrown by fibroadenoma.\(^5\) Although SLH and fibroadenoma are clinically similar, morphologically they are different. Fibroadenoma arises from the terminal duct lobular unit of the breast, destroying the

FIG. 1: Fine-needle aspiration cytology smears are moderately cellular and comprise mammary ductal epithelial and myoepithelial cells in clusters and as tubular fragments. The background is relatively clean with bare nuclei and occasional foci of stromal fragments. (PAP x40)
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lobular architecture. In contrast, in SLH the architectural integrity of the breast tissue is maintained. The lesion consists of enlarged, easily recognizable lobules. The stroma is composed primarily of spindly fibroblasts. There is no cellular or architectural atypia of the lobules or stroma. The cytology of the lesion is characterized by presence of uniform, round to oval populations of epithelial cells arranged in flat sheets and acinar (rosette-like) arrangement. Although benign, these lesions may present as painful breast masses.2

In SLH, the presence of interlobular stromal sclerosis mimics hamartoma; however its frequent association with fibroadenoma, and the absence of fat in the stroma, may help to distinguish SLH from hamartoma.4

Mammography usually shows an oval, well-circumscribed lesion with echogenic septae that corresponds to interlobular sclerosis. However, Poulton and his co-workers concluded that the imaging findings of SLH are not sufficiently characteristic to distinguish the lesion from fibroadenomas and well-circumscribed carcinomas.3 On most of the occasions it is difficult to distinguish SLH from fibroadenoma on radiological investigations alone. Even ultrasonography shows a peripherally arising intratumoral echogenic septae corresponding to the interlobular sclerosis.6 On rare occasions microcalcifications within the SLH nodule, possibly related to involution were noted.3

Fine-needle aspiration cytology findings previously reported in two cases of SLH showed a clean background devoid of stromal fragments and with only a few bare nuclei. However, in another report Kapur et al., unlike previously described cases, saw a few scattered stromal fragments and a fair number of bare nuclei. They explained that sclerosed stroma may make fine-needle aspiration a difficult task and also account for the relative paucity of stromal fragments. A complete absence of stromal fragments and rarity of bare nuclei are not consistent features of SLH and may not be relied upon to distinguish SLH from fibroadenoma; a reliable distinction requires histological examination of the architecture of the two lesions.

Grossly, SLH is a relatively well-circumscribed, soft to firm, nodular, mass. The cut surface is solid and grayish white. Microscopically, SLH is characterized by prominent hyperplasia of the lobules and sclerosis of the interlobular stroma. The lobular acini and ducts are lined by single-
layered epithelial and myoepithelial components. The intralobular stroma is collagenized with loss of stromal mucopolysaccharides.\(^2\) Areas of pseudoangiomatous changes in the sclerosed stroma are seen in some cases. SLH maintains the acinar architectural integrity of the breast tissue. The lesion consists of enlarged, easily recognizable lobules. In contrast to SLH, fibroadenoma arises from the ducts and stroma of the terminal duct lobular unit of the breast, resulting in loss of the lobular architecture. They are closely related to each other as microscopical fibroadenomas have been described in some sections from SLH and SLH may occur in the breast tissue surrounding fibroadenomas.

SLH is a benign lesion and is not associated with an increased risk for carcinoma of the affected breast.\(^1\) The natural course of SLH is not known. However, natural regression is suspected because no lesions have been found in postmenopausal women.\(^3\) Excision of the lesion is considered adequate therapy as there are no documented recurrences.

**Message**

SLH and fibroadenoma do not differ much from each other on fine-needle aspiration cytology. There are many overlapping features which require histopathological examination for definitive diagnosis. However their distinction on cytology is of no clinical significance as both need surgical intervention.

**REFERENCES**