

Leiomyoma Breast - A Rare Case Report

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Abstract

Breast Leiomyoma is a rare and benign non epithelial tumor. They arise from smooth muscle in nipple and areola or smooth muscle metaplasia of myoepithelial cells or myofibroblastic cell. Here we report a case of 36yr old female who presented to us with a painless left sided breast lump. There was no history of nipple discharge. Excisional biopsy revealed a growth pattern of interlacing fascicles of smooth muscle cells consistent with Intra-parenchymal leiomyoma of breast. We are publishing this case because of its rarity. Diagnosing these lesions as benign is essential for proper treatment.

Keywords: Breast lump, Leiomyoma, benign tumor, spindle cell tumor of breast.

I. Introduction:

Leiomyoma is a benign smooth muscle neoplasm, which is most commonly found in the uterus and GIT. Most leiomyomas of breast arise from the areolar-nipple complex, a minority develop within the breast proper. According to our review of literature 23 cases have been reported to date [4]. In addition, we review the literature on this uncommon breast neoplasm (Pavlidis et al.2013). Two types of breast leiomyoma are described, superficial and parenchymal leiomyoma. Superficial leiomyomas are found in the skin and subcutaneous tissues and arise from smooth muscle of nipple and areola. Parenchymal leiomyomas are located deep within the breast substance. The second form probably derived from smooth muscle metaplasia of myoepithelial or myofibroblastic cells or originated from surrounding blood vessel smooth muscle [3]. The most clinico- radiological differential diagnosis of breast leiomyoma included fibroadenoma, myoepithelioma [3]. We report a case of leiomyoma of the breast with description of the radiologic, histopathologic, and immunohistochemical findings.

II. Case Report:

A 36 year old lady complaining of left sided breast lump came to surgical OPD of Kakatiya Medical College /Mahatma Gandhi Memorial Hospital, Warangal .The lump was initially pea sized and has grown gradually to lump size of 8×6cm² in the span of 5 years. There was history of cyclical mastalgia. There was no history of nipple discharge, retraction of nipple, ulceration or any use of oral contraceptive drugs. She had no family history of breast cancer. Physical examination revealed a well defined mobile mass of 8×6cm² occupying upper outer & inner quadrant .it was firm, non tender with smooth surface and regular margins. No lymphnodes were palpable.

Imaging Findings: Mammographic images showed homogenous well defined space occupying lesion in upper quadrant of left breast.

Fnac: Revealed benign spindle cell lesion of breast.

Under local anesthesia, excisional biopsy of the lesion was performed and the specimen was sent to department of Pathology for histological examination.

Gross Examination: of surgical specimen revealed a well encapsulated 5×4cm² mass. The cut surface appeared to be homogenous and white with glistening surface with whorly appearance. [Fig: 1]

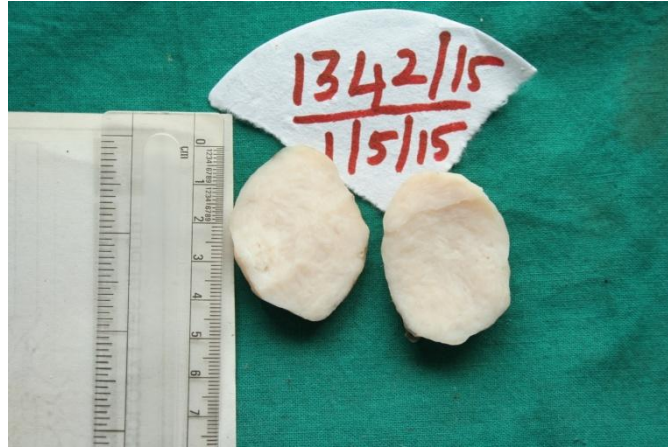


Fig 1: Gross-cut surface showing homogenous, white and glistening surface with whorly appearance

Histopathological Examination: revealed a breast lobule with encapsulated tumor comprised of interlacing fascicles of spindle cells. The spindled cells had ovoid nuclei with blunt ends, and uniform nuclei with delicate chromatin and inconspicuous nucleoli with moderate eosinophilic cytoplasm. No mitotic figures, cytologic atypia, or necrosis was seen [fig: 2]. Immunohistochemical stains showed diffuse strong positivity for smooth muscle actin [fig: 3]. Immunohistochemical stain for CD34 was negative [fig: 4]. A smooth muscle tumor, specifically a leiomyoma was diagnosed.

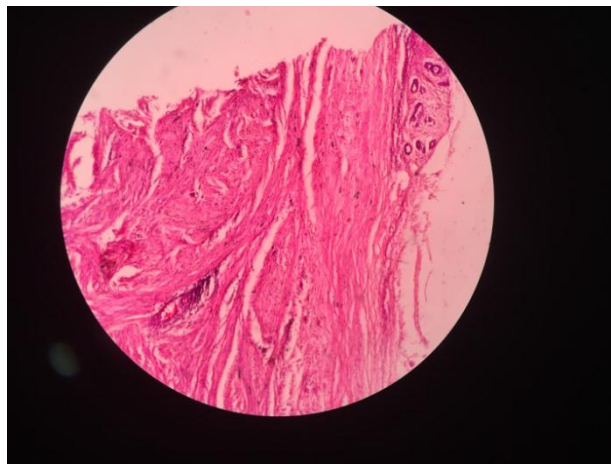


Fig 2: Interlacing bundles of spindle shaped smooth muscle cells with eosinophilic cytoplasm of the leiomyoma at the left side and normal breast tissue on side of the figure- 10x

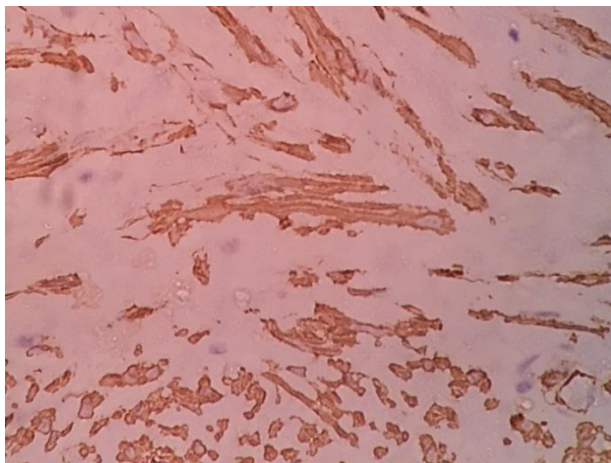


Fig 3: IHC Diffuse SMA (smooth muscle actin) positivity of the spindle shaped cells in the leiomyoma of the breast -40X

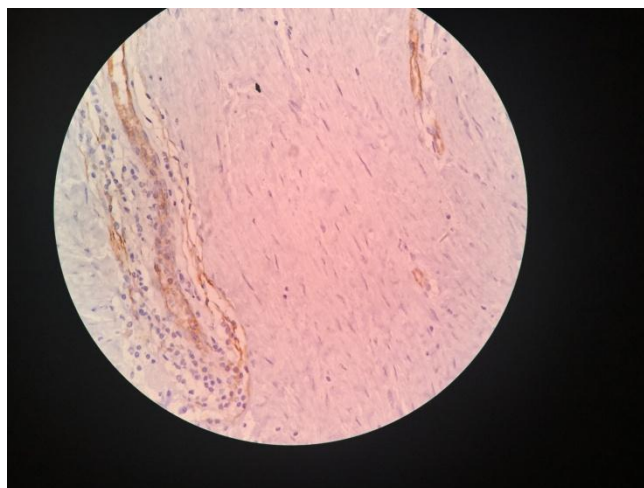


Figure 4: Immunohistochemically showing negative for CD34 - 40x

III. Discussion:

The histopathologic and immunohistochemistry findings of our case are consistent with Intraparenchymal breast leiomyoma-. Unlike leiomyomas found in the uterus and gastrointestinal tract, leiomyomas of the breast parenchyma are extremely rare benign smooth muscle neoplasms and mainly occur in middle-aged women. Differentiating benign intraparenchymal leiomyoma from other breast lesions is essential for determining proper treatment. Tumors included in the pathologic differential diagnosis include leiomyosarcoma, the spindle cell variant of adenomyoepithelioma, myofibroblastoma, fibromatosis, benign nerve sheath tumors including neurofibromas, and benign and malignant phyllodes tumors [1]. The histologic findings in our case are typical. Commonly the tumor is composed of interwoven bundles of spindle-shaped smooth muscle cells. The spindled cells are characterized by blunt-ended nuclei and moderate eosinophilic cytoplasm. While mitotic figures have been described in a few reports of intraparenchymal leiomyomas, none have shown mitotic activity, necrosis, or evidence of atypical nuclei. Immunohistochemically, these lesions are characterized by positivity for specific smooth muscle actin, and CD34 negative. Leiomyosarcoma is the most important lesion to be distinguished from an intraparenchymal leiomyoma as the treatment, recurrence rates, and prognosis differ. On mammography these lesions appear similar to benign lesions as they are well circumscribed. Since leiomyosarcoma and intraparenchymal leiomyomas share similar clinical and radiologic presentations, histologic examination is essential to definitively diagnose them [1]. Histologically, leiomyosarcomas show marked cytologic atypia, numerous atypical mitotic figures, vascular invasion, and necrosis. The spindle cell variant of adenomyoepithelioma is a biphasic tumor that has spindled myoid cells that may be confused with the spindled cells seen in leiomyoma, but it also is composed of tubular glands. Immunohistochemistry is useful in distinguishing these lesions, since adenomyo-epitheliomas show S-100 protein and cytokeratin positivity. While myofibroblastomas are composed of ovoid to spindle-shaped cells arranged in short intersecting fascicles similar to leiomyomas, where spindle cells show positive for CD34. Benign tumors of nerve sheath origin such as schwannomas or neurofibromas show interlacing bundles of elongated spindle shaped cells. Positivity for S-100 can aid in distinguishing these lesions. Fibroadenomas and benign phyllodes tumors can be distinguished histologically as they contain both stromal and epithelial components in various patterns. A lack of malignant features rules out a malignant phyllodes tumor [1]. Whereas the more common subareolar leiomyomas of the breast are believed to develop from smooth muscle tissue found in that region of the breast, the origin of the intraparenchymal leiomyoma remains unclear. In the other hand Diaz-Arias et al. suggested that the origin of these tumors may include the following ; (a) a teratoid origin with extreme overgrowth of the myomatous elements, (b) embryologically displaced smooth muscle from the nipple, (c) angiomatous smooth muscle, (d) differentiation from multipotent mesenchymal cells in breast tissue, (e) myoepithelial cells [5]. The relationship between the use of Tamoxifen and breast leiomyomas remains speculative. Tamoxifen has been shown to increase the growth of uterine leiomyomas; thus it is hypothesized to increase the size of breast leiomyomas. In one case a woman taking Tamoxifen had an increase in the size of a mammary leiomyoma over the course of 3 yr. The treatment for intraparenchymal leiomyoma of the breast is simple excision. Due to the benign nature of these lesions, more extensive surgery is not indicated; however, as noted above, thorough histological examination is essential for a proper diagnosis.

IV. Conclusion:

Intraparenchymal leiomyoma of the breast is an extremely rare tumor that can clinically and radiographically mimic other breast lesions. While this tumor can be recognized on needle core biopsy, immunohistochemistry can be helpful to characterize the lesion and confirm the diagnosis.

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