Spindle cell lipoma of the spermatic cord

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Spindle cell lipoma is a specific type of lipoma. First described by Enzinger and Harvey[1] in 1975, it is a histologically distinct lesion characterized by replacement of mature fat cells by collagen forming spindle cells. Despite its cellularity, it is a benign lesion that can be cured by local excision. It accounts for 1.5% of adipocytic neoplasm's and is outnumbered by conventional benign lipomas by approximately 60 to 1. More than 75% of spindle cell lipomas occur in males between 40-60 years of age commonly seen in the subcutaneous tissue of the posterior neck, shoulder and back. It has also been reported in other sites like the limbs, face, trunk, skin, skeletal muscle, orbit, oral cavity, larynx, bronchus, breast and vascular tissue. A Medline search of the literature from 1984-2002 failed to yield any report of spindle cell lipoma affecting the spermatic cord. We however found a single report of Leydig cell tumor of the testis with adipose differentiation containing spindle cells.[2] This is however, a different entity from spindle cell lipoma and should not be confused with the case being reported. It would therefore be proper to assume that this is the first report of spindle cell lipoma affecting the spermatic cord, in the literature. Variants of spindle cell lipoma have been reported, like a pseudoangiomatous variant, a fibrous spindle cell lipoma, and a vascular variant in an intramuscular (subfascial) location and fibrohistiocytic lipoma. Pleomorphic lipoma is accepted as part of the spectrum of spindle cell lipoma. Multiple lesions though rare, have also been described, varying between 2 and 200 lesions in the same patient;[3] familial and non-familial cases have also been reported. Two main types of the lesion involving dermal tissues have also been described, a plexiform type and nodular type. Grossly, the tumor is well circumscribed and resembles a lipoma except for gray-white gelatinous foci that represent areas of spindle cell proliferation. The first classic clinicopathologic description of this tumor was that of an intricate mixture of mature lipocytes and uniform spindle cells within a matrix of mucinous material traversed by a varying number of birefringent collagen fibres. The spindle cells are uniform, with a single elongated nucleus and narrow, bipolar cytoplasmic processes. Mitotic figures and nucleoli are not conspicuous. Mast cells are conspicuous feature. Scattered multinucleated floret like, giant cells are seen at times. Immuno-histochemical studies by Ito and Tsuda, 1985, showed that the spindle cells stain strongly for vimentin. This finding has been subsequently confirmed by others who have shown the tumor cells to be vimentin-positive. S-100 protein does not mark the spindle cells, but mature lipocytes show strong peripheral immunoreactivity for this antigen. Recent studies have shown that almost all spindle cell lipomas are positive for CD34 (human hematopoietic progenitor cell antigen) but not immunoreactive for actins, desmin, laminin or MAC-387.[4] More recently the utility of cytogenetic analysis in spindle cell lipoma have shown characteristic chromosomal abnormalities, with deletion of 16q material and 13q.[5]

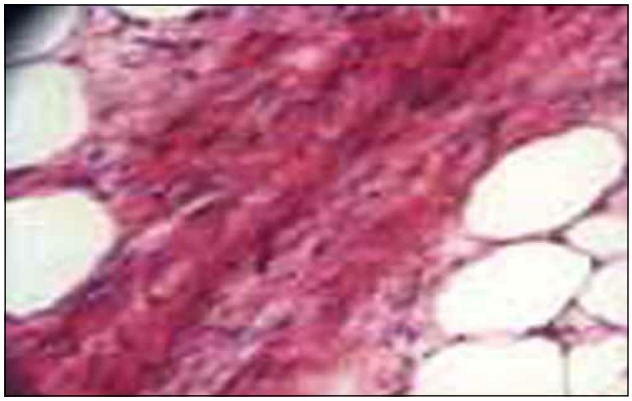

Figure 1 - Microphotograph 10 x 10 showing mature fat cells and benign spindle cells.

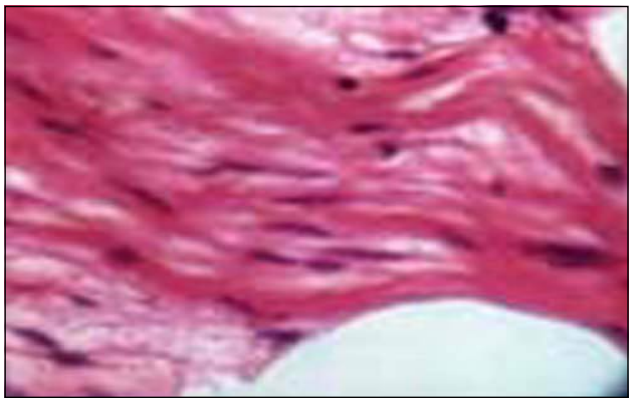

Figure 2 - Microphotograph 40 x 10 showing mature fat cells and benign spindle cells.

In our case report, a 60-year-old Saudi male, presented with a slow growing, painless right scrotal mass, of one year duration. There was no history of trauma, weight loss or sudden change in the size of the mass. No history of prior medical illness. Clinical examination showed a well-looking patient with all other systems normal. Both testicles were

fully descended and intra-scrotal in location. There was a large, non-tender right testicular mass measuring 10cm x 7cm x 5cm, having a smooth surface and firm in consistency. The mass could not be delineated separately from the right testis and epididymis. Transillumination was negative. There was no associated hernia. Digital rectal examination revealed a firm prostate estimated at 30gms and feeling benign. Investigations such as routine blood chemistry, erythrocyte sedimentation rate (ESR), alpha-fetoprotein (AFP), beta-human chorionic gonadotropin (β-hCG), chest x-ray, ultrasound (U/S) and computed tomography (CT) examinations of the abdomen were also normal. Ultrasound of the scrotum revealed a large, well-defined mass of homogeneous hyper-echogenicity in the right hemi-scrotum suggesting a benign lesion. The right testis was displaced caudally and was not infiltrated by the mass. The right epididymis appeared normal. The left testis and epididymis were also normal. A provisional diagnosis of right para-testicular tumor was made. Though suspected to be a benign lesion, exploration of the tumor was planned through an inguinal approach with frozen section histology. However, the patient rejected this procedure, insisting instead on orchidectomy regardless of the final histology report. Possibly, fears of residual malignancy after local excision in the patient's mind could have made him insist on radical surgery. A radical orchidectomy was therefore performed through a right inguinal approach. The right testis was found to be adherent to the tumor but there was no gross evidence of tumor invasion. Histo-pathological examination of the tumor revealed that it was a well circumscribed lesion, with features of spindle cell lipoma of the spermatic cord (**Figure 1**). The resected margin of the spermatic cord was also free of tumor. More than 5 years following resection, there is no sign of local tumor recurrence or of any distant metastasis. Most solid testicular masses are malignant until proven otherwise. By implication, most tumors of para-testicular origin are benign. Although most hyperechoic masses are usually benign, the potential for malignancy cannot always be totally excluded. Frozen section histology is therefore usually employed to clear any doubts in such circumstances. The tumor in our patient had the light microscopic histo-pathologic features that qualify it as spindle cell lipoma (**Figure 2**), in keeping with the classic description of Enzinger and Harvey.[5] Further, confirmation with immunohistochemistry and cytogenetic analysis could not be due to lack of facilities. The exact nature and origin of this tumor is not yet fully elucidated. It has been suggested that the accumulated filaments and myxoid matrix containing hyaluronic acid in spindle cell lipoma may be degenerative rather than synthetic in nature. The exact nature of spindle cells is uncertain, as it is difficult to distinguish early fibroblasts and prelipoblasts even by electron microscopy. Based on finding CD34 immunoreactivity, Suster and Fisher[4] have suggested that this lesion is a dendritic interstitial neoplasm located in fat, rather than a true lipogenic neoplasm. Unlike liposarcoma, spindle cell lipoma is a benign lesion. It is therefore, completely amenable to local excision without recourse to radical surgery. The planned frozen section histology for our patient might have obviated the need for radical surgery. But this must be underscored by the difficulty that exists in distinguishing this tumor from liposarcoma without special stains particularly, using only a frozen section specimen. The patient's choice of radical surgery in this case was however, the overriding reason in favor of radical excision.

In conclusion, a rare case of spindle cell lipoma of the spermatic cord has been presented. It presented as a painless, firm, smooth scrotal mass. Spindle cell lipoma is a benign lesion. Local excision is therefore, usually the treatment of choice irrespective of its location. This appears to be the first case of spindle cell lipoma of the spermatic cord in the literature to date.

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