Isolated Lymphangioleiomyomatosis in axillary lymph node: A rare case report with review of literature.

Balasubramanian Priyavadhana[1], Singh Ashok[2], Gupta Amit[3].

[1] *MD, Associate Professor, Department of Pathology & Laboratory Medicine, All India Institute of Medical Sciences, Rishikesh*
[2] *MD, Additional Professor, Department of Pathology & Laboratory Medicine, All India Institute of Medical Sciences, Rishikesh*
[3] *MD, Professor, Department of Surgical Oncology, All India Institute of Medical Sciences, Rishikesh*

Priyavadhana.path@gmail.com

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Abstract

Background: Lymphangioleiomyomatosis (LAM) is a rare low grade metastatic tumour spreading through lymphatic vessels. On histology, it shows proliferation of smooth musclelike or epitheliod tumour cells in the lungs or axial lymphatic system. Extrapulmonary LAM is rare.

Case presentation: We report a case of a 23-year-old male who presented with generalised lymphadenopathy and skin lesions since one month. The patient had no history of pulmonary LAM, tuberous sclerosis complex or renal angiomyolipoma. The biopsy from the skin nodule performed outside, was reported as Mycosis fungoides with large cell transformation. The biopsy from the axillary lymph node showed an encapsulated nodal tissue with numerous follicles of varying sizes, both primary and secondary follicles. Some of the follicles showed spindle cell proliferation and increased plasma cells in the germinal centres. Prominence of vasculature is also noted. Subcapsular spindle cell proliferation with areas of myxoid degeneration is also noted. On immunohistochemistry, these spindle cells were positive for S100, SMA, and HMB45 and negative for Pan-CK , MDM2, Melan A, Desmin and Beta catenin. D 240 highlighted the lymphatic channels. The patient was treated with chemotherapy.

Conclusion: The diagnosis was challenging in this case, as it is rare pathology, less commonly seen in men, and even more, with a history of skin nodules and no history suggestive of pulmonary LAM or other causes of LAM. With spindle cell proliferation in lymph nodes, LAM should always be had in mind and the appropriate immunohistochemistry will help in arriving at the final diagnosis.

Introduction

Lymphangioleiomyomatosis (LAM) is a rare, low grade metastatic tumour that spreads through lymphatic vessels. LAM was first reported by Von Stossel

in 1937. It belongs to the family of perivascular epithelial cell tumors (PEComas)[1,2].LAM is most commonly seen in women of childbearing age. On histology, LAM shows proliferation of smooth muscle like or epithelioid tumour cells. The most common organ involved is lung and primary extrapulmonary LAM is rare.

We report a case of isolated axillary lymphangioleiomyomatosis in a 23-year-old male.

Case Presentation:

A 23-year-old male presented with generalised lymphadenopathy and skin lesions since one month. The patient had no history of lung disease, renal angiomyolipoma or tuberous sclerosis complex. The biopsy from the skin nodule done in another hospital was reported as Mycosis fungoides with large cell transformation. Biopsy from the axillary lymph node we ordered showed an encapsulated nodal tissue with numerous follicles of varying sizes, both primary and secondary follicles. Some of the follicles showed spindle cell proliferation and increased plasma cells in the germinal centres [Figures 1d]. Prominence of vasculature and subcapsular spindle cell proliferation with areas of myxoid degeneration were also noted [Figure 1 a-c]. There was no necrosis or nuclear atypia or mitotic activity. Cytologically, the LAM cells were spindle shaped with eosinophilic to clear to slightly foamy cytoplasm. On immunohistochemistry (IHC), these spindle cells were positive for S100, SMA, and scattered cells were positive for HMB45 [Figure 2]. They were negative for Pan CK, MDM2, Melan A, Desmin and Beta catenin. D 240 highlighted the lymphatic channels. Preoperative chest CT showed no apparent abnormalities. The patient received chemotherapy for Mycosis fungoides and the lymphadenopathy regressed. He is on regular follow-up and has had no pulmonary symptoms till date.

Discussion

LAM is a rare, slow-moving tumour, most commonly seen in females. The most common organ involved are the lungs[1]. 30–40% of women present with sporadic LAM and 88–96% of women present with Tuberous sclerosis complex (TSC)[3]. The pathogenesis is largely unknown but the majority of these cases are associated with TSC[1].

Histologically, LAM shows proliferation of lymphangiomyocytes around lymphatics or within lymphocyte aggregation. On immunohistochemistry, LAM cells express smooth muscle markers like smooth muscle actin, desmin, and melanoma cell marker HMB 45. In our case, the LAM cells were positive for S100, SMA, HMB45, consistent with the immunophenotype of LAM cells in published literature[4].

Rabban et al studied incidental lymph node LAM in Pelvic and Para-aortic Lymph Nodes during the Surgical Staging of Pelvic Cancer in 26 female patients who had no symptoms of pulmonary LAM or TSC. Their study has shown that LAM was seen within the lymph node parenchyma in most patients (22/26), however lymph nodes of 4 patients showed LAM lesion in the subcapsular space. In our case, LAM was seen within the lymph and also within the subcapsular space [Figure 1,2]. As described by them, classical growth pattern of nodules and nests of bland myoid-appearing spindle cells within a background of lymphatic channels and a fascicular growth pattern of densely packed intersecting fascicles of the same LAM cells was seen in our case as well[5]. The most characteristic histologic feature of LAM is the presence of LAM cells, which are abnormal looking smooth muscle like cells[6].

LAM is a difficult diagnosis especially when there are no salient diagnostic features like TSC, angiomyolipoma, or pleural effusions[2]. Extrapulmonary LAM is mostly benign, and lymph node LAM often goes undetected. It is most commonly detected in lymph nodes following surgery for tumours of gynaecology and urinary system[5,7].

Kuno et al studied 1732 gynecologic surgical specimens with lymph node sampling over a period of 14 years and have found that 0.46% (8/1732) of them showed incidental nodal LAM. In their case series, they reported a 36-year -old woman with <10mm lymph node LAM developed pulmonary LAM 7 years later. They suggest that with incidental detection of nodal LAM in surgical specimens, a longer follow up of 7 years or even longer might be needed to detect pulmonary LAM[4]. Schoolmeester et al have studied 19 patients with incidental LAM in lymph nodes with a median follow up of 33.8 months and they have concluded that patients presenting incidentally with nodal LAM smaller than 10 mm without and signs and symptoms are not at risk of developing pulmonary LAM[7]. Hence lymph node

LAM, might be a high risk factor for pulmonary LAM depending on the size of the lesion. Our case involved a male who presented with isolated lymph node LAM, which is rare.

Matsui et al have proposed that it might take 1- 2 years for a lymph node LAM to progress to pulmonary LAM and the size of lymph node lesions may be at least 10 mm in pulmonary LAM[8]. Extrapulmonary LAM lesions are mostly seen in the lymph nodes in retroperitoneum and mediastinum but in our case, the patient had LAM in an axillary lymph node which is a rare site for extrapulmonary LAM. LAM in association with Mycosis fungoides has never been reported and creates a diagnostic challenge. There was no published literature available for association of Mycosis fungoides with lymphangioleiomyomatosis.

Conclusion

The diagnosis was challenging in this case as it is rare, less common in men, presented in a known case of Mycosis fungoides with no suggestive history. With spindle cell proliferation in lymph nodes, LAM should always be considered and the appropriate immunohistochemistry will help in arriving at the final diagnosis.

Figure 1. Fig 1a. H &E, 40 X, Encapsulated nodal tissue with numerous follicles of varying sizes, both primary and secondary follicles. **Fig 1b.** H& E, 100X, Some of the follicles show spindle cell proliferation and increased plasma cells in the germinal centres.

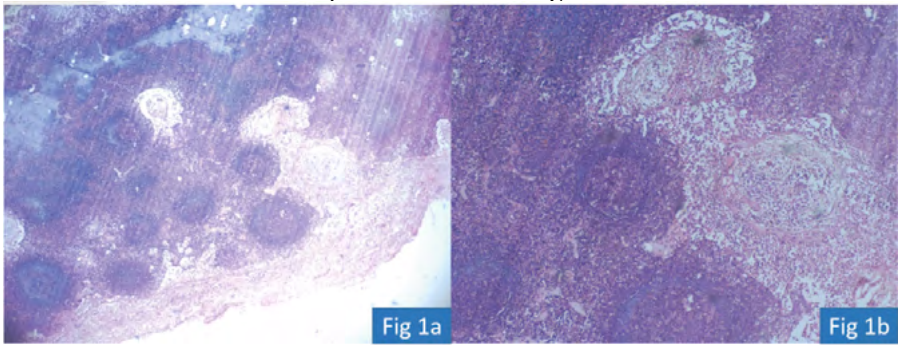


Figure 2. Fig 2a. H& E, 400X, Some follicles showing spindle cell proliferation and increased plasma cells in the germinal centres. **Fig 2b.** H& E, 200X, Supcapsular spindle cell proliferation with areas of myxoid degeneration and prominence of vasculature. **Fig 2c.** H& E, 100 X, **Fig 2d.** H&E, 200 X Spindle cell proliferation with prominence of vasculature and increased plasma cells.

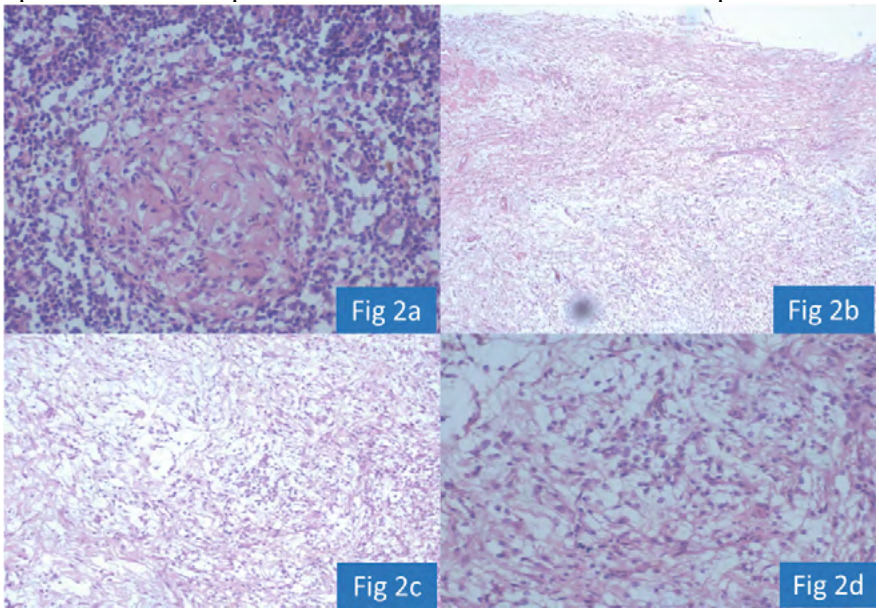
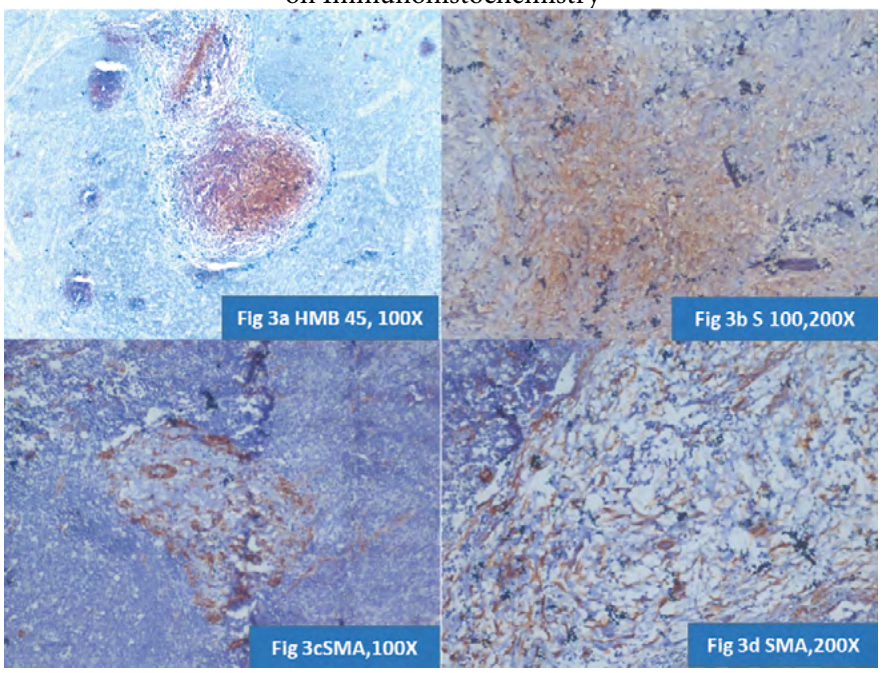


Figure 3. Fig 3 a, b, c, d. Spindle cells showing positivity for HMB 45, S100 and SMA on Immunohistochemistry



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