

Littoral Cell Angioma of the Spleen

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Abstract

Introduction: Littoral cell angioma is a recently described vascular tumour of the spleen with an unknown aetiology. **Clinical Picture:** We present a case of a 36-year-old lady who had a successful living-related renal transplantation 13 years ago. On follow-up, she was investigated for pyrexia of unknown origin (PUO) and was found to have a large solitary hypodense splenic lesion. **Treatment:** Splenectomy was carried out because an underlying infective or neoplastic cause for this patient on long-term immunosuppression could not be excluded. The operation and subsequent clinical course was uneventful and the patient's fever settled postoperatively. The histological and immunohistochemical features of the tumour were consistent with a littoral cell angioma. **Conclusion:** Littoral cell angioma is a vascular tumour of the spleen. This case illustrates that it can be a cause of PUO and should be considered in the differential diagnosis of splenic hypodense lesions.

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Introduction

The littoral cells line the vascular channels of the red pulp of the spleen and have characteristics of endothelial and histiocytic cells. In 1991, Falk et al¹ described and characterised the tumoural component. Littoral cell angioma (LCA) is a rare primary vascular and is more commonly benign in nature. We describe a case in a 36-year-old lady who had a successful renal transplant 13 years ago with an unusual finding of a splenic lesion when admitted for investigation of pyrexia.

Case Report

The patient is a 36-year-old Chinese lady who underwent a living-related renal transplant 13 years ago for end-stage renal failure secondary to chronic glomerulonephritis. Post-transplantation, she was on maintenance immunosuppression consisting of daily azathioprine 75 mg and prednisolone 10 mg with normal graft function. She was recently treated for a cryptococcal lung infection, but persisted to have a fever. In the investigative work-up for her pyrexia of unknown origin (PUO), the computerised tomography (CT) of the thorax discovered a well-defined lesion in the spleen. Subsequently, CT of the abdomen revealed an enlarged spleen with a 9.0 x 7.6 cm solitary

hypodense lesion (Fig. 1) that enhances on the delayed scans. This suggests a lesion of a "vascular" nature. The most common possibilities include a neoplastic or infective aetiology. All haematological and biochemical tests were normal. Bone marrow trephine biopsy was unremarkable.

As the underlying nature of the lesion could not be determined in this patient on long-standing immunosuppression, she underwent a splenectomy. The spleen measured 11 x 8.5 x 6.5 cm and weighed 275 g. Cut section shows a circumscribed brownish-red tumour measuring 7.2 x 7.5 x 6 cm abutting the capsular surface with a central white septum. Microscopically, the lesion is composed of anastomosing, closely packed congested sinusoidal vascular channels with focal papillary fronds and multiple cystic spaces (Figs. 2a and 2b). The endothelial cells lining the sinusoidal lumen have no evidence of mitotic activity or nuclear atypia. Specifically, they stain positively with Perl's stain for hemosiderin, suggesting erythrophagocytosis. Special stains for acid-fast bacilli and fungi were negative. Immunohistochemical studies exhibit expression of the endothelial marker CD31 and the histiocytic marker CD68, but negatively for CD8 and CD34 that are normally present on red pulp sinusoidal endothelium. This confirmed the diagnosis of LCA.

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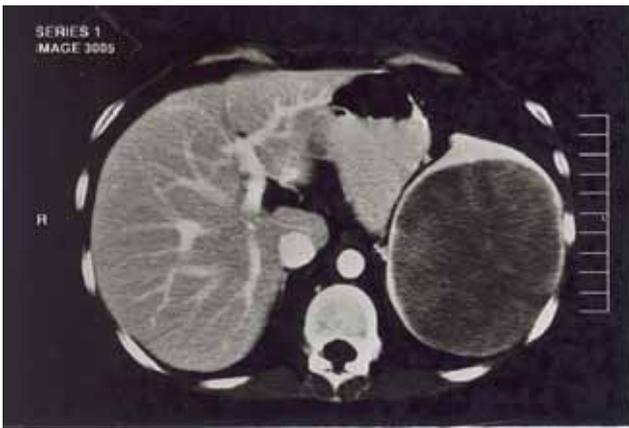


Fig. 1. Solitary hypodense lesion of the spleen in a 36-year-old patient represents a rare solitary form of littoral cell angioma.

Postoperatively, her fever settled and her recovery was unremarkable. An upper and lower gastrointestinal endoscopic evaluation did not reveal a synchronous malignancy. On her last follow-up 28 months after her splenectomy, she remains asymptomatic with no clinical or radiological evidence of recurrence.

Discussion

The most common primary tumours of the spleen are vascular in origin. Most are benign and include haemangiomas and hamartomas. Rarely, a malignant angiosarcoma or haemangiopericytoma is discovered. More recently, a distinct splenic vascular tumour with specific immunohistochemical properties has been described.¹ The diagnosis of littoral cell angioma is confirmed histologically and on immunohistochemistry. The demonstration of features of dual endothelial/histiocytic differentiation is diagnostic for LCA. This is confirmed in our patient with the presence of the endothelial marker CD31 and that of the histiocyte marker CD68. As such, the diagnosis is frequently only made after thorough pathological examination.

Grossly, there are 2 forms of LCA. More commonly, it is seen as a tumour consisting of multiple nodules diffusely involving the entire spleen. However, a rare solitary form of this has also been described² that resembles the lesion in our patient. The lesion was diagnosed on a CT scan but CT features of LCA are not specific. On unenhanced images, the lesion is hypodense but can be imperceptible. Only on delayed images does the entire lesion enhance suggesting a vascular lesion. This characteristic is seen in most vascular tumours of the spleen.³ This presents as a diagnostic dilemma since the differential diagnosis of such a lesion is multiple. The primary differential diagnoses include other primary vascular tumours of the spleen, such as a haemangioma, hamartoma, haemangiopericytoma, haemangi endothelioma or angiosarcoma. Other lesions

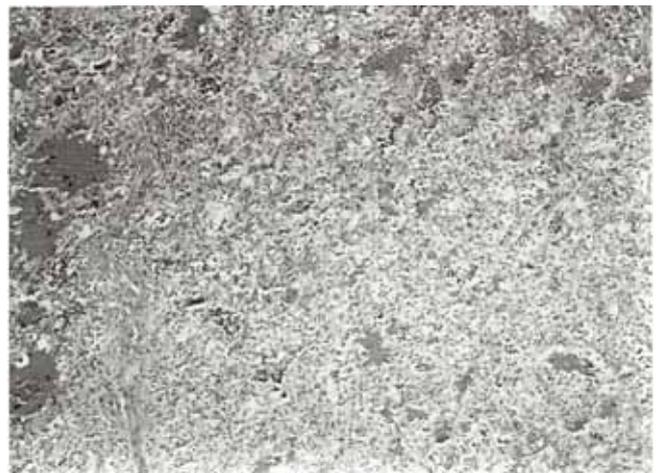


Fig. 2a. Littoral cell angioma of the spleen in the same patient shows branching vascular pattern associated with cavernous blood-filled spaces. A pseudopapillary pattern can be discerned. (Haematoxylin and eosin stain, original magnification x100)

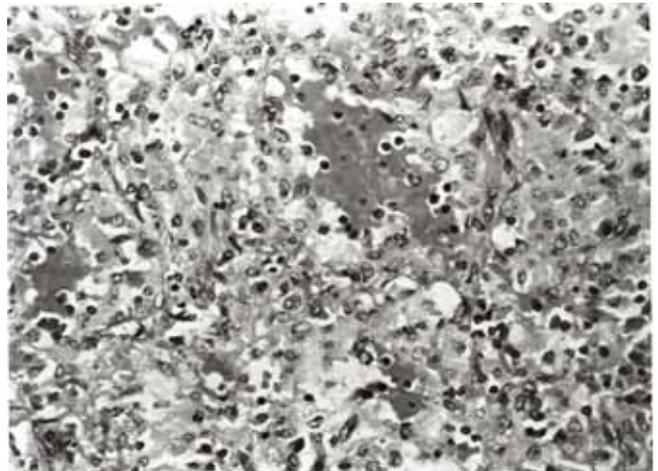


Fig. 2b. Higher power demonstrating vascular spaces lined by plump, bland-looking cells. (Haematoxylin and eosin stain, original magnification x400)

that should be considered include lymphoma, lymphangioma, visceral metastasis and a splenic abscess. This difficulty is amplified in the context of our patient who was a renal transplant recipient subject to the complications of long-term immunosuppression. This highlights the difficulty faced when trying to make a preoperative diagnosis for splenic lesions. Due to the wide spectrum of possible diagnosis in our patient, the decision was made to perform a splenectomy for diagnostic and therapeutic purposes.

The aetiology and natural history of LCA is unclear due to a rarity of cases. It has no predilection for either gender or age group. Most reported cases reported have documented a benign course.^{1,2} Malignant variants with a propensity for metastasis to the liver and brain have been described.^{1,4} Clinically, the patient with a LCA may present with an

abdominal mass from splenomegaly or as an incidental finding. Rarely, symptoms of hypersplenism (thrombocytopenia and anaemia), portal hypertension and pyrexia of unknown origin have been described.^{1,5} A relationship between LCA and an altered immune host response can be postulated. Firstly, the development of LCA can be related to chronic immunosuppression following renal transplant as in this patient. This has not previously been described. Moreover, there is complete resolution with fever following surgical removal of LCA. This suggests that the LCA may have produced the fever and reflects the altered host response. Such an association of a vascular lesion with altered immunity is similarly described in Castleman's disease.

There is also an important association between LCA and malignancy. To date, there are 36 cases of LCA published in the literature, of which 11 are associated with visceral malignancies and 2 with lymphomas.⁵ Of these, the most common malignancy is that of a colorectal adenocarcinoma. Other associated malignancies are lung, renal and pancreatic carcinomas. No feasible explanation has been proposed for this association. However, it is recommended that close clinical follow-up be instituted for these patients to monitor for such malignancies.⁶ An upper and lower gastrointestinal evaluation with endoscopy or radiological contrast imaging, chest radiograph and renal ultrasound should be considered.

Conclusion

LCA is a rare vascular tumour of the spleen. The diagnosis of this lesion is difficult to make preoperatively. This case illustrates that it can be a cause of PUO and should be considered in the differential diagnosis of splenic hypodense lesions.

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