

Castleman's Disease Presenting as an Abdominal Mass

C. VALIATHAN GOPAKUMAR, P.K. REDDY, J.K.A. JAMEEL

ABSTRACT

Castleman's disease is an uncommon lymphoproliferative disorder. It can present as unicentric disease or multicentric disease. Here we present a case in which a 60 year old female who presented with upper abdominal

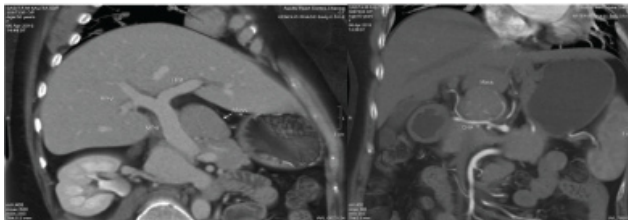
discomfort was evaluated with contrast enhanced CT scan and was initially thought to have a paraganglioma at hepatoduodenal ligament, but was later diagnosed as having Castleman's disease.

Keywords: Abdominal lump, Angiolymphoid hyperplasia, Giant lymph node hyperplasia

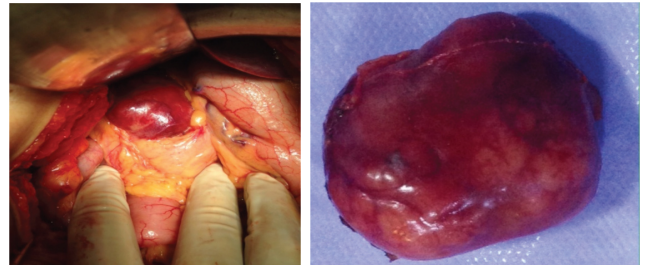
CASE REPORT

A 51-year-old female patient presented in Surgical Gastroenterology Department with dyspeptic symptoms of 3 months duration. Her abdominal examination and blood investigations were within normal limits. Serum HIV and HBsAg were negative. Upper GI endoscopic study was normal. Ultrasound evaluation of abdomen showed a solitary hypoechoic lesion in the upper abdomen adjacent to the liver. Contrast enhanced CT-scan showed a hypodense lesion measuring 5 cm x 4.3 cm enhancing in the arterial phase near the porta hepatis, abutting the caudate lobe, main portal vein and hepatic artery. No lymph node enlargement was seen. Biliary system, liver, pancreas and other organs were normal [Table/Fig-1]. The radiological findings suggested a paraganglioma at hepatoduodenal ligament.

Exploratory laparotomy was performed. Intraoperatively there was a firm capsulated mass inferior to the porta, abutting the caudate lobe along the hepatoduodenal ligament [Table/Fig-2]. The mass was not adherent to any vascular structures. No lymph node enlargements could be detected. There was a clear plane of dissection all around the mass and therefore

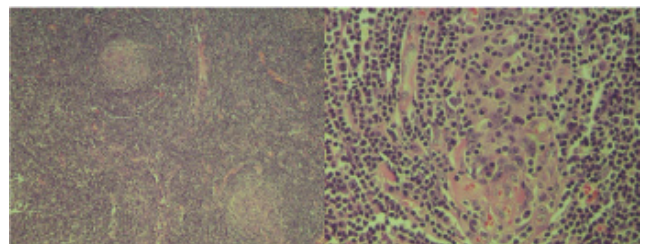


[Table/Fig-1]: CECT abdomen reconstructed images showing lesion near portahepatis, mild enhancing in arterial phase, abutting caudate lobe, portal vein and hepatic artery.



[Table/Fig-2]: Intraoperative picture showing the mass inferior to porta hepatis along the hepatoduodenal ligament.

[Table/Fig-3]: Gross specimen picture showing a tan coloured firm capsulated mass.



[Table/Fig-4]: Histology showing distorted lymph node architecture with concentric ring of lymphocytes (onion-skinning).

it was possible to easily excise the entire mass without any breach of its capsule or injury to adjacent structures [Table/Fig-3]. Histopathological examination of the resected specimen showed features of Castleman's disease - hyaline vascular variant [Table/Fig-4]. The patient had an uneventful postoperative recovery and was discharged after five days of hospitalisation. After three months follow-up the patient was clinically asymptomatic. Informed consent from the patient was obtained prior to inclusion of details in this case report.

DISCUSSION

Castleman's disease is a rare lymphoproliferative disorder with unclear epidemiology and evolving treatment modalities. Initially Dr. Castleman reported 2 patients possessing localised mediastinal lymph node enlargements in 1954. He reported redundancy of lymphoid follicles with germinal centre involution and marked capillary proliferation with endothelial hyperplasia in both follicular and inter-follicular regions in these lymph nodes [1]. This was named as Castleman's disease. Keller et al later in 1972 described the hyaline vascular variant and plasma cell variant histologic subtypes of the disease [2]. Castleman's disease is an important cause of non-neoplastic lymph node enlargement. It is described as a great mimicker of a spectrum of both neoplastic and non-neoplastic diseases affecting lymphoid system. The disease is relatively uncommon and its etiopathogenesis is still not completely understood. The estimated 10-year prevalence is 2.5 per million in U.S. It can be either unicentric disease or multicentric disease. Unicentric disease presents with isolated lymph node enlargement, while multicentric disease can affect any of the reticulo-endothelial organs with multiple lymph node enlargements. Most frequent symptoms of multicentric disease are fatigue (49%), fever (39%) and night sweats (30%) [3]. Multicentric disease is less common than unicentric disease and it has a slight male preponderance. A retrospective data analysis done by Robinson D et al., about multicentric disease showed that 61% were male and the mean age at presentation was 53 years. The pathogenesis of Castleman's disease has been linked to HHV-8 infection. HHV-8 has been found in lymphoid cells in the systemic form of Castleman's disease [4]. HHV-8 infection stimulates secretion of interleukin-6 which causes various manifestations including lymphoid hyperplasia.

Castleman's disease has been histologically classified into 3 subtypes – hyaline vascular, plasma cell and mixed type. Hyaline vascular variant is characterised by distortion and expansion of lymph node architecture due to increased numbers of lymphoid follicles, often containing multiple small germinal centres that are depleted of lymphocytes but may contain hyaline deposits, as well as numerous follicular dendritic cells. Expansion of mantle zones with concentric ring of lymphocytes (onion skinning) and sclerotic blood vessels penetrating the follicles (lollipop lesions) may also be seen. Differential diagnoses include toxoplasma lymphadenitis, mantle cell lymphoma, follicular lymphoma, nodal marginal zone B cell lymphoma [5]. In the plasma cell variant, lymph node architecture is expanded by sheets of predominantly mature plasma cells, although a range of maturation may be present. Differential diagnosis includes lymphoplasmacytic lymphoma, plasmacytoma, angioimmunoblastic T-cell lymphoma, rheumatoid lymphadenitis [5].

Contrast enhanced CT scan of Castleman's disease usually shows lymph nodal masses to be solid homogenous and hypervascular when the tumour diameter is less than 5 cm, whereas when they are larger than 5 cm, they tend to have a more heterogeneous enhancement with a central low-attenuation area because of necrosis and fibrosis. Hyaline vascular variants on magnetic resonance (MR) imaging typically exhibit heterogeneous T1 and T2 hyperintensity compared with skeletal muscle. Prominent flow voids may help to identify the feeding vessels. However, radiological findings are often non-specific and biopsy is often required for confirmation of diagnosis. Fine needle aspiration cytology is often inconclusive and an excisional biopsy is needed to establish the final diagnosis [6].

Unicentric Castleman's disease is treated by surgical excision of affected lymph node. No further treatment is recommended [7]. Therapeutic options for multicentric disease includes glucocorticoids, single or combination chemotherapy. Monoclonal antibodies targeting CD20 or IL-6 are other options. Steroids help in short term control during acute exacerbation of symptoms. Rituximab is an anti CD 20 monoclonal antibody which is used as first or second line therapy [8]. Chemotherapy, in general is reserved for HIV positive patients who relapse or progress on rituximab treatment [9]. Siltuximab and tocilizumab are newer monoclonal antibodies targeting IL-6 and its receptor (IL-6R) respectively. Siltuximab was approved by the US food and Drug Administration (FDA) for treating HIV negative, HHV-8 multicentric disease [10]. Bortezomib which is a proteasome inhibitor decreases the production of IL-6, has been used in patients who fail on anti IL-6 receptor therapies [11]. Thalidomide is an immunomodulator which has been demonstrated to induce remission by multiple mechanisms in multicentric disease [12].

CONCLUSION

Castleman's disease is a rare lymphoproliferative disorder with diagnostic as well as therapeutic challenges. It is a mimicker of a variety of benign as well as malignant conditions involving the lymphoid system. Diagnosis can be made only after histopathological and immunohistochemical evaluation of affected lymph nodes. Unicentric disease is treated by excision of affected lymph node. The treatment of multicentric disease is still evolving. Rituximab monotherapy remains the current standard treatment with newer agents targeting IL-6 being introduced. Multi-agent chemotherapy is used as adjunct treatment for refractory or relapsed disease.

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