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Online Only Clinical Record

Unusual location for Castleman's disease

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Abstract

Objective: We present the first reported case of persistent, posterior triangle lymphadenopathy in a child, caused by Castleman's disease.

Case report: A seven-year-old boy presented with a painless swelling in the posterior triangle of his left neck, with no compression of the surrounding structures. A histological diagnosis of Castleman's disease was made. Eventual treatment was by complete excision. At six-month follow up, there were no signs of recurrence.

Conclusion: The causes of persistent cervical lymphadenopathy in children are many. Most are not significant, but some are life-threatening. Castleman's disease should be considered as a possible diagnosis in persistent childhood lymphadenopathy.

Key words: Lymphadenopathy; Neck; Child; Castleman's Disease

Introduction

Castleman's disease was first described by Castleman in 1954 as a benign lymph node neoformation located in the mediastinum.[1] The disease has been clinically classified as either localised to one region of the body (i.e. uni-centric) or diffuse (i.e. multi-centric). Localised Castleman's disease is usually asymptomatic and diagnosis is by histological analysis. Definitive management is by complete excision of the lymph node. The multi-centric form of the disease must be excluded as this can progress to non-Hodgkin's lymphoma. Systemic therapy is often required.

Case report

A five-year-old boy presented with a six-month history of painless swelling in his left neck; he also had a swelling in the anterior abdominal wall.

Examination of the neck revealed three painless, palpable, cervical lymph nodes in the left posterior triangle of the patient's neck. The skin over the swelling was normal. No other glands were palpable in the neck. There was a small swelling in the anterior abdominal wall just above the umbilicus. Abdominal examination revealed no palpable organomegaly.

An ultrasound scan of the neck revealed three enlarged lymph nodes, the largest measuring 13 mm in diameter. Preliminary blood investigations showed a haemoglobin concentration of 13.3 g/dl, a white cell count of 8.9×10^9/l and an erythrocyte sedimentation rate of 8 mm/hour.

The patient was diagnosed with reactive lymphadenopathy. He was reassured and discharged home, with an open appointment should any further concerns arise.

The patient re-presented five months later with persistence of his neck and abdominal wall swellings and increasing parental concern. Examination of the neck revealed persistence of three painless, palpable cervical lymph nodes in the left posterior triangle, the largest measuring 1.5×1.5 cm on clinical examination. The throat examination was normal.

Excision biopsies of the largest left posterior triangle lymph node and the abdominal wall swelling were undertaken. The abdominal wall swelling proved to be a small lipoma. Histological examination of the cervical node showed intact follicular architecture with diffuse expansion of the paracortex. The germinal centres appeared small and were surrounded by concentric layers of lymphocytes at the periphery of these follicles, with an 'onion skin' appearance (Figures 1 and 2). Immunohistochemical analysis was positive for cluster of differentiation 45 glycoprotein (CD45), CD20, CD15 and CD3 and negative for CD30, inferring that the cells were of mixed B and T lymphocytic origin. Thus, a histological diagnosis of Castleman's disease was made.

The remaining two left cervical lymph nodes were removed for histological examination and staging. Histological examination showed features consistent with reactive change, including the presence of macrophages. Plain chest X-ray and ultrasonography

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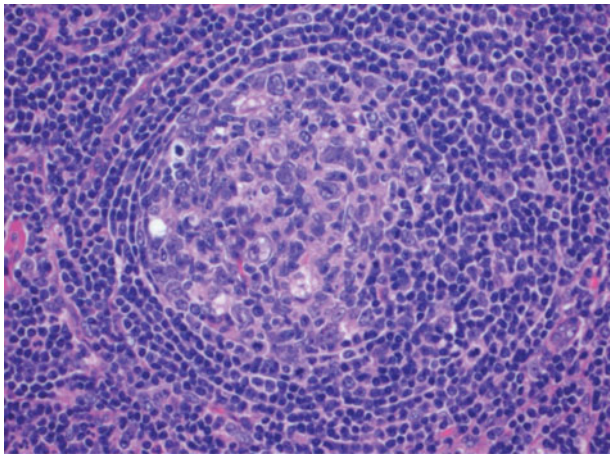

FIG. 1

Photomicrograph showing small (atrophic) germinal centres surrounded by concentric layers of lymphocytes at the periphery of these small follicles, with an 'onion skin' appearance or 'lollipop' architecture (H&E; ×40).

of the abdomen showed no abnormalities. A diagnosis of uni-centric Castleman's disease was made.

The patient was followed up in the clinic for six months with no recurrence.

Discussion

Castleman's disease is rare. Since the first report in 1954, just over 500 cases have been published, of which 57 were localised to the cervical region.[2] The disease arises at between two months and 76 years of age, with a peak incidence in the second and third decades. Sex distribution is equal.

Diagnosis is by histological examination. Histologically, there is angiofollicular hyperplasia. The disease has been classified as hyaline-vascular (90 per cent of cases) or plasma cell (10 per cent of cases). The former classification generally carries a better prognosis than the latter. A mixed or transitional form has also been described but is very rare.

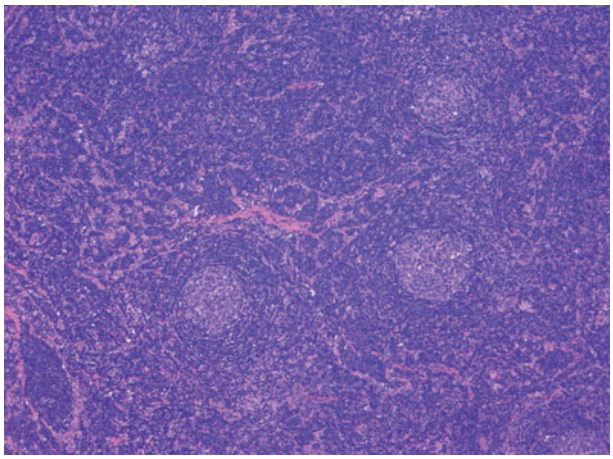

FIG. 2

Photomicrograph showing intact follicular architecture with diffuse paracortical expansion (H&E; ×20).

Castleman's disease has been clinically classified as either localised to one region of the body (i.e. uni-centric) or diffuse (i.e. multi-centric). The aetiology of localised Castleman's disease is unknown, although an inflammatory–infectious hypothesis has been suggested on the basis of observed progression from lymphoid hyperplasia to Castleman's disease.[2,3] The localised form presents with a painless, enlarged lymph node usually located in the thorax (33 per cent) or abdomen (30 per cent).[4,5] A large mass may cause symptoms due to pressure on adjacent structures. In the head and neck, cases have been reported in the parotid, larynx, nasopharynx, carotid sheath and retropharyngeal area. A literature review located only three previously reported, paediatric cases with disease localised to the supraclavicular fossa.[3,4] Involvement of the posterior triangle has not previously been reported in children.

Uni-centric Castleman's disease follows a benign course. Management comprises exclusion of other sites of involvement by full blood count, chest X-ray and abdominal ultrasonography, followed by total excision of the lesion. No adjuvant treatment is required.

The multi-centric form of Castleman's disease was first described by Gaba *et al.* and is more commonly a plasma cellular type on histological examination.[6] It is characterised by generalised lymphadenopathy and constitutional symptoms (fever, fatigue, excessive sweating, weight loss and skin rash). The median survival of patients with the plasma cell variant of Castleman's disease is 26 months.[7] Multi-centric disease is rare in children, representing only 13 per cent of Castleman's disease cases.[5]

Overproduction of interleukin 6 with global activation of the immune system plays a significant role in the development of the plasma cell type of Castleman's disease.[8] There is a risk of progression to non-Hodgkin's lymphoma due to chromosomal abnormalities in lymphoid cells.[9] Multi-centric Castleman's disease has an association with a syndrome comprising polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy and skin changes.[10] Human herpes virus 8 may have an aetiological role in multi-centric Castleman's disease occurring with this syndrome.[10]

A good response to radiotherapy has been reported for the multi-centric form of Castleman's disease. A more favourable response is noted in patients with the earlier, more active stage of the disease, compared with the later and less metabolically active hyaline-vascular disease. The difficulty lies in incorporating the bulk of the known disease within the radiation field.

The use of chemotherapy has been reported in a few cases of multi-centric disease. Use of high dose steroids alone has been associated with an incomplete response. Anti-neoplastic agents together with steroids produce only a partial response, or none at all. Alternative treatments have included high dose melphalan with autologous bone marrow transplant. Use of anti-interleukin 6 monoclonal antibody and interferon α has also been reported. The use of

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suramin, an anti-parasitic and reverse transcriptase inhibitor with proven antiproliferative effects on lymphoid cells, has had some success.[11]

Conclusion

The causes of persistent cervical lymphadenopathy in children are many. Most are not significant but some can be life-threatening. Castleman's disease should be considered as a possible diagnosis in persistent childhood lymphadenopathy.

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Dr H G Rao takes responsibility for the integrity of the content of the paper.
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