CASE REPORT

Castleman's disease presenting within the cheek of a child

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Abstract

A case is presented of an 11-year-old male with an eventual diagnosis of extranodal Castleman's disease (hyaline vascular type). This was difficult to diagnose as attempts were made to remove what was believed to be a haematoma, and then a reactive lymph node within the left cheek. Subsequent histopathology revealed the true nature of this swelling.

Introduction

Castleman's disease was first described in 1954 (by Castleman and Towne)[1]. Further development has suggested that Castleman's disease is a lymphoproliferative disorder. The disease can present in lymph nodes or as an extranodal mass. The disease has also been termed angiofollicular lymph node hyperplasia, giant lymph node hyperplasia and angiomatous lymphoid hamartoma[2]. The aetiology of the disease remains unknown, but proposed theories include a response to chronic infection[3,4], hypersecretion of the cytokine IL-6[5] and a hamartoma of lymphoid tissue[6].

Clinically, the lesion typically presents as a solitary mass, which is benign, painless and without specific signs or symptoms. It can also present as multicentric masses[7]. The disease tends to be seen in young adults and there is no sexual predilection.

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The most common site of presentation is in the mediastinum (in 86% of cases), followed by the neck (in 6% of cases)[3]. Less commonly, cases have been reported in the head and neck region, including the parotid gland[8], submandibular gland[9] and within a lymph node in the buccal mucosa[10].

Histopathologically, two main variants of Castleman's disease have been identified; the first, hyaline vascular type (80–90%)[3,11], is characterised histologically by lymphoid follicular hyperplasia with abnormal, regressive germinal centres. Dysplastic follicular dendritic cells are surrounded by concentrically layered mantle cells. There is intrafollicular capillary proliferation and hyalinisation[3]. This variant is usually asymptomatic, unless the lesion causes indirect symptoms by compression of adjacent structures[12].

The second variant is the plasma cell type (10–20%)[3], which shows an increase in the number of plasma cells in the interfollicular region[3]. This variant often has associated systemic symptoms, such as fever,

night sweats, anaemia and hypergammaglobulinemia[13]. This form of the disease is more aggressive and has a relatively poor prognosis. It has been associated with the human herpes virus 8 (HHV8) infection, in which patients have an increased risk of developing other HHV8-associated neoplasms, for example, Kaposi's sarcoma and B-cell plasmablastic lymphoma[14].

Intermediate variants of the hyaline vascular and plasma cell types have been also described[15].

Case presentation

An 8-year-old Caucasian male presented with a 2-week history of swelling within the substance of the left cheek. The lump was first noticed following an injury to the left cheek while playing rugby. Failure of the lesion to reduce in size resulted in a referral to oral and maxillofacial surgery by his general medical practitioner.

Upon examination, the patient was systemically well with no cervical lymphadenopathy. A 1.5 cm diameter, non-tender, fluctuant, smooth mass was found within the left cheek, overlying the zygomatic bone. A full blood count and erythrocyte sedimentation rate were within normal limits and facial radiographs were unremarkable. The provisional diagnosis of an organising haematoma was made. The patient was then reviewed over a 4-month period, during which time there was no significant change.

As the lesion had not resolved, an exploration of the left cheek and excisional biopsy was performed under general anaesthetic. The lesion was approached from an intraoral incision; following blunt dissection, the mass was found within subcutaneous tissue and muscle, deep within the left cheek, just below the malar prominence. The lesion was solid in nature and there was no definitive plane between the lesion and surrounding tissue. Histopathological analysis revealed reactive lymphoid hyperplasia with no malignancy.

After 7 months, the lesion reoccurred in the same location and further removal was performed under general anaesthetic. Histopathological examination of this sample was reported as showing soft tissue with a reactive lymphoid infiltrate composed of reactive lymphoid follicles with regressive germinal centres. The latter showed vascular proliferation and focal hyalinisation. The mantle zone appeared expanded and showed the classical 'onion skin' concentric layering of lymphocytes at the periphery of the follicles (see Figs. 1 & 2). No lymph node capsule or sinuses were evident.

A diagnosis of extranodal, soft tissue, hyaline vascular type Castleman's disease was made. The lesion was felt to be completely excised and the patient now remains symptom-free, although continuing under regular review.

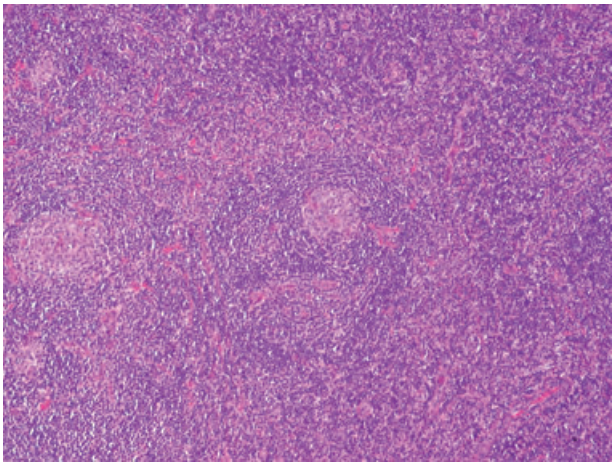

Figure 1 Regressed germinal centres surrounded by concentric layering of mantle zone lymphocytes. The interfollicular stroma is prominent with numerous post-capillary type blood vessels.

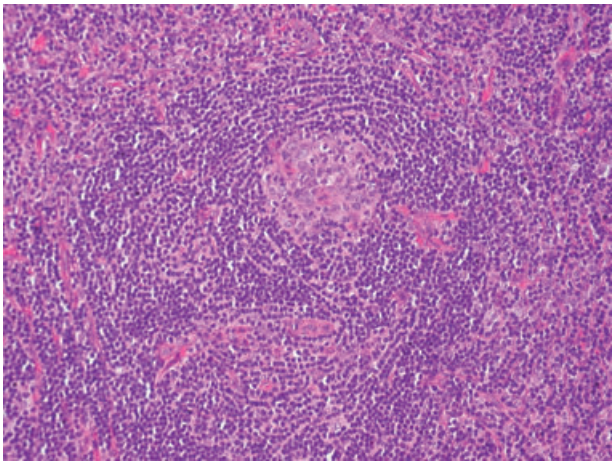

Figure 2 Germinal centre showing dysplastic dendritic cells and prominent hyalinised blood vessels.

Discussion

Castleman's disease is a rare lymphoproliferative disorder, which has the potential to progress to malignancy.

Most frequently, it presents in the mediastinum of young adults[3]. Although rare, the disease has been reported in children[16].

This reported case is believed to be a unique example of extranodal, hyaline vascular Castleman's disease,

which presented intraorally, within the substance of the cheek of a child, following a history of trauma.

Diagnosis of the disease is a challenge to the clinician and can be readily misdiagnosed[2]. The aforementioned case highlights this difficulty, as initially, the lesion was diagnosed clinically as a haematoma. The first histopathological investigation reported the lesion as reactive lymphoid hyperplasia. Only after the recurrence and second excision was a histopathological diagnosis of Castleman's disease made.

A haematoma is not routinely included in the differential diagnosis of Castleman's disease. However, because of marked 'vascular infiltration', and therefore the vascular nature of this lesion, it may clinically mimic a haematoma.

It is postulated that increased IL-6 production by the mantle zone B-lymphocytes secondary to stimulation by HHV-8 or by an unidentified exogenous or endogenous agent, is the initial step in the development of Castleman's disease[17]. IL-6, in turn, stimulates release of vascular endothelial growth factor, resulting in the characteristic lymphoid follicular and vascular proliferation[18]. The aforementioned case manifested subsequent to a traumatic event. It remains to be seen if trauma can induce localised IL-6 production and subsequent Castleman's disease-like changes, or whether trauma can cause an already existing vascular Castleman's lesion to bleed and form what mimics an organised haematoma.

Following complete surgical excision, clinical resolution of the disease usually occurs[11]. In this case, the recurrence is most likely to have arisen within the residual tissue, suggesting an incomplete initial excision. Ten months following the second procedure, the patient has remained symptom-free.

In summary, this distinctive case reports a localised, extranodal, soft tissue, hyaline vascular Castleman's disease, occurring in the cheek of a child following trauma. It is an unusual example of an extremely rare pathological condition to occur intraorally and within the paediatric population. It has presented a diagnostic challenge to both clinician and pathologist.

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