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Pathology in Focus

Plasma cell polyp of the vocal fold

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Abstract
Plasma cell polyps of the vocal fold (plasma cell granulomas) are rare inflammatory polyps of the larynx. They should be included in the clinical and histological differential diagnosis of laryngeal polyps. Histologically they are polyclonal aggregates of plasma cells. It is essential to distinguish them from monoclonal, neoplastic plasma cell proliferations. The treatment of choice is surgical resection, although radiotherapy, laser ablation, antibiotics and steroids have been used successfully.

We present a case of plasma cell granuloma presenting as a vocal fold polyp, treated surgically.

Key words: Laryngeal Neoplasms; Granuloma, Plasma Cell; Vocal Cords

Introduction

Vocal fold polyps are usually pedunculated structures, but occasionally may be sessile in appearance. The commonest are described as fibrous, vascular, oedematous or hyalinized polyps.

On rare occasions these polyps or nodules consist of a dense accumulation of plasma cells within an oedematous, fibrous stroma. These are the plasma cell polyps of the vocal fold, so called plasma cell granulomas.

Plasma cell granulomas are benign lesions consisting of a polyclonal population of mature plasma cells. They are more commonly found in the lung and oral cavity and should be distinguished from malignant, monoclonal plasma cell proliferations, including solitary plasmacytoma and multiple myeloma. Finally, the same name in other organs may denote a totally different lesion, the inflammatory pseudotumour, an important differential diagnosis that will be discussed later.

We present the clinical and microscopic features of a case of plasma cell vocal fold polyp.

Case report

History

A 72-year-old lady presented with a seven month history of a hoarse voice. This was not progressive and not associated with any symptoms of dysphagia or pain. She suffered from hypertension, treated with an ACE inhibitor and diuretic, but was otherwise fit and well with no other systemic illnesses. She was a non-smoker.

On examination she had a benign-looking polyp on the left vocal fold. This was not associated with any lymphadenopathy. There were no other abnormal findings.

She underwent microlaryngoscopy and excision of the polyp under a general anaesthetic. The lesion was completely excised and sent for histology. Post-operative recovery was uneventful.

At a four-month out-patient follow up, she remained well following surgery. There was an improvement in her voice and no evidence of recurrence on flexible nasendoscopy. Serum electrophoresis, urinary Bence Jones and full blood count were all normal.

Pathology

The excised specimen was 3 mm in diameter. Histologically it consisted of stromal tissue covered by squamous epithelium. The epithelium was hyperplastic and focally

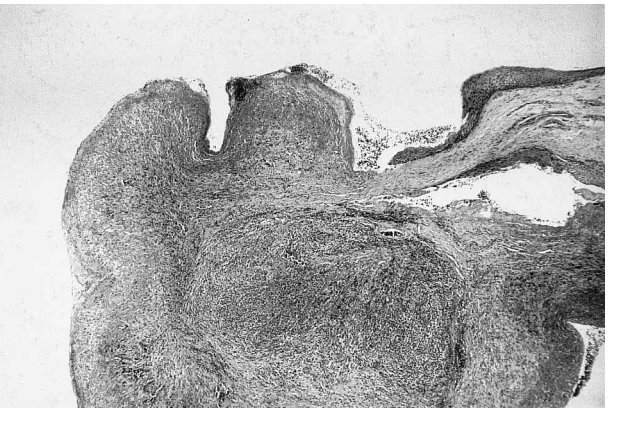

Fig. 1

Overall view of the surgical specimen. The surface is lined by normal epithelium. The plasma cell granuloma is the well-circumscribed structure within the stroma (H & E; ×25).

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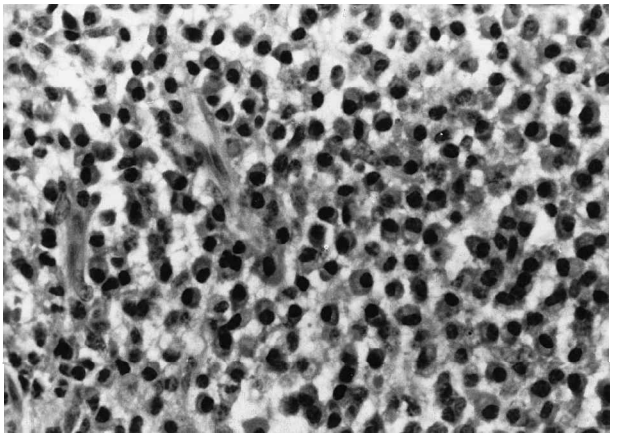

FIG. 2
Close up view of the lesion, composed of mature plasma cells (H & E; ×400).

eroded. There was no evidence of dysplasia. The stroma contained a well-circumscribed, 1.8 mm aggregate of mature plasma cells, with accompanying haemosiderin-containing macrophages and a fibroblastic reaction at the periphery (see Figures 1 and 2). Immunohistochemistry was performed revealing the polyclonal nature of the plasma cell aggregate.

Discussion

The aetiology of plasma cell granuloma is still not fully understood, although Albizatti[1] suggested that chronic infection may play a role and Bahaderi and Liebow[2] postulated a hypersensitivity basis. There were no signs or symptoms to support these theories in our patient.

There is insufficient data as to the true incidence of plasma cell granulomas. They most commonly occur in the lung, where they form asymptomatic masses discovered on routine chest X-ray. The majority of cases present in patients below the age of 30 years.[2]

Other sites of occurrence include the tonsil,[3] mandible,[4] middle ear and mastoid,[5] nasal cavity,[6] gingiva,[7] stomach,[8] liver,[9] and cord,[10] oesophagus,[11] thyroid,[12] orbit and brain,[13] maxillary sinus,[14] pancreas, bladder, mesentery, ovary, retroperitoneum, mediastinum and kidney.

Plasma cell granulomas of the larynx have only rarely been reported in the literature.[1,15–19] The predominant presenting feature appears to be hoarseness although otalgia, difficulty breathing, dysphagia, sensation of a lump in the throat and cough have also been complaints. On examination, the previously reported cases revealed oedema and granularity of the epiglottis, aryepiglottic folds and valleculae. Fradis *et al.*,[16] reported a case in a 52-year-old woman in whom there was swelling of both arytenoids and epiglottis with white ulceration of the right vocal fold. Satomi *et al.*[19] described a mass in the subglottic space and trachea obstructing the airway and Fonseca and Suarez[17] reported death from asphyxiation due to laryngeal plasma cell granuloma in a patient infected with human immunodeficiency virus (HIV).

The microscopic picture invariably shows a dense, polyclonal infiltrate of plasma cells. Other features that may be present include a fibroblastic collagenous background with numerous small vessels, foamy cells and haemosiderin-containing macrophages and lymphocytes. The presence of collagen and macrophages is more commonly associated with a benign plasma cell proliferation. Distinctive Russell bodies (accumulations of immunoglobulin deposits within plasma cells) can be identified. These precipitates may be confused with fungi or parasites.[20] Amyloid may be present and foci of calcification have also been described.

Cases of plasma cell granuloma should be investigated and have a urinary Bence Jones Protein assay, full blood count and serum electrophoresis performed to rule out other more serious haematological disorders i.e. myeloma. The lack of light chain restriction on immunohistochemistry, however, is indicative of the benign nature of these lesions.

The term plasma cell granuloma is readily used in many organs as a synonym for inflammatory pseudotumour.[21] However the histological and clinical characteristics of the inflammatory pseudotumours described in the larynx are very different.[22–24] Furthermore, this condition can mimic malignancy[25] or in other organs can even transform to malignancy.[26] For all these reasons, it is advised to maintain the term plasma cell granuloma/plasma cell polyp for lesions such as the one described in this report.

The primary treatment for plasma cell granuloma in general is surgical excision.[12,13] However, in cases where any surgery required would be extensive and disfiguring, radiotherapy,[6] laser ablation,[19] antibiotics and oral steroids[16] have been used successfully. In our patient, surgery alone was sufficient and histologically the lesion appeared fully excised in the plane of transection.

These lesions usually follow a benign course, however they can be locally invasive and recur.[27,28]

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Mr S. Lee takes responsibility for the integrity of the content of the paper.
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