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Solitary fibrous tumour of the parotid gland

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Abstract
Solitary fibrous tumours are rare tumours originally described in the pleura. More recently there have been reports of these tumours arising at other sites including the parotid region. They are characterized histologically by a variety of growth patterns that can be confused by the unwary with other benign or malignant tumours particularly sarcomas. We present a case occurring in the pre-auricular region which presented diagnostic difficulties.

Key words: Parotid Gland; Tumour

Introduction

Solitary fibrous tumour is a rare tumour originally described in the pleura but also observed more recently at many other sites including the parotid region. The histological pattern is variable and can be confused with other benign or malignant tumours. This report describes one case arising adjacent to the parotid that presented diagnostic difficulties on fine needle aspiration (FNA) and following excision.

Case report

A 42-year-old woman presented with a four-month history of a right infratemporal/pre-auricular swelling. The lesion was increasing in size and was associated with a burning pain. On examination the lump was ovoid, firm and was tethered to the underlying fascia. Computed tomography (CT) scan showed a 2.5 cm well-circumscribed lesion superior to the tail of the parotid, that had the appearance of a pathological lymph node. Her past medical history included unilateral renal artery stenosis that was effectively treated by angioplasty. FNA revealed a cellular aspirate composed of sheets of small fairly uniform oval cells with intervening vascular stroma. The nuclei had a fine, evenly distributed chromatin pattern with little pleomorphism and no mitotic activity. Dense hyaline material was interspersed between the tumour cells. The appearances were consistent with a low grade mesenchymal lesion and complete excision was advised for definitive diagnosis.

The excision specimen revealed a 2.2 cm circumscribed mass with attached parotid. Histological evaluation showed a cellular population of oval and spindle cells with bland cytology in a vascular stroma. In addition, irregular clusters of dense hyaline material were interspersed between the tumour cells. Sirius red stain was negative.

Immunohistochemical staining was negative for epithelial (CAM 5.2, AE1/AE3, EMA), neural (S100, GFAP), and smooth muscle (SMSA) markers but was positive for vimentin and CD34 (a vascular marker with idiosyncratic positivity in several non-vascular lesions). Electron microscopy showed the cells to be filled with mitochondria, Golgi apparatus and rough endoplasmic reticulum with occasional thin intermediate filaments. No tight junctions, desmosomes or microvilli were seen. The irregular intercellular hyaline material was collagen.

A diagnosis of benign solitary fibrous tumour was made. The patient had an uneventful post-operative recovery and at three months follow-up was well with no evidence of recurrence.

Discussion

Solitary fibrous tumours of soft tissues, also called fibrous mesotheliomas or submesothelial fibromas are rare tumours originally described in the pleura.[1] More recently they have been described at extrapleural sites such as the abdominal cavity, orbit, upper respiratory tract, soft tissue and salivary glands.[2,3] Diagnostic criteria have recently been elaborated.[4] Immuno-histochemical and ultrastructural studies have shown that the cells are predominantly fibroblastic in differentiation. The histological spectrum of these tumours is broad and they can potentially be mistaken for a variety of benign and malignant neoplasms. Solitary fibrous tumours occurring in the soft tissues in adults present as a well-circumscribed subcutaneous or deep rubbery mass ranging in size from 1 to 6 cm. Histologically the tumours are characterized by a variety of growth patterns with a mixture of cellular spindle areas and foci of sclerosis. The presence of rope-like collagen separating the tumour cells is distinctive. Immunohistochemical staining is positive for vimentin and CD34. The tumours are negative for keratin, actin, desmin, S100 protein and factor VIII -related antigen. Follow-up shows no evidence of recurrence or metastasis suggesting a benign behaviour.[1,2]

We describe a case arising adjacent to the parotid. Eight cases of solitary fibrous tumour involving salivary glands have been reported to date.[2–6] FNA diagnosis was of low grade mesenchymal tumour. Surgical resection revealed a circumscribed tumour separate from the parotid. Immunocytochemical and ultrastructural examination led to the diagnosis of solitary fibrous tumour. The differential

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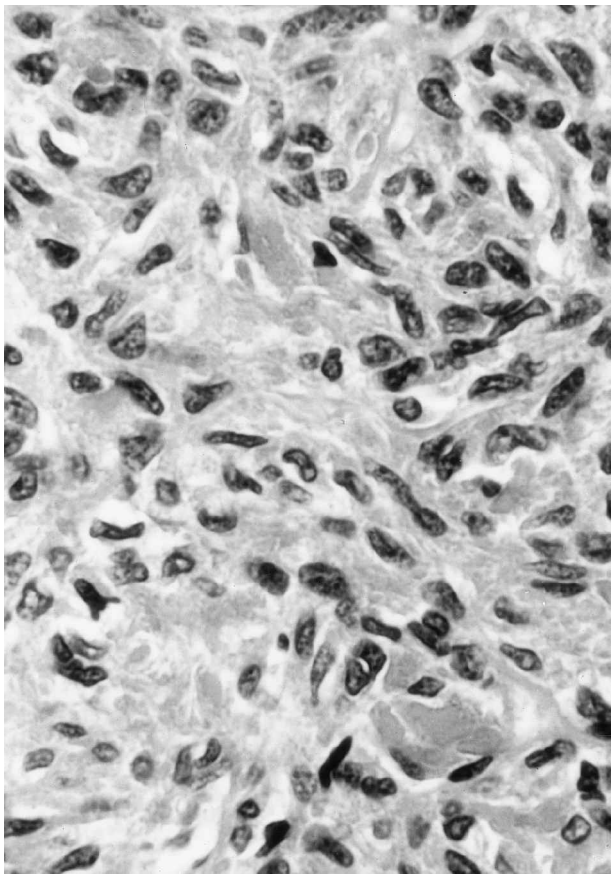

FIG. 1
Spindle-shaped fairly uniform tumour cells separated by dense collagen (H & E; ×40)

diagnosis included a salivary gland epithelial neoplasm excluded by immunocytochemical findings, haemangiopericytoma, schwannoma, fibrous histiocytoma and sarcoma. Solitary fibrous tumours unlike haemangiopericytomas are circumscribed spindle-cell neoplasms and show varying cellularity with keloid-like collagenization features not seen in haemangiopericytoma. CD34 staining while positive in both tumours shows stronger more diffuse intense staining in solitary fibrous tumours. This case was circumscribed and showed intense and diffuse staining with CD34. The lack of a storiform pattern and foam cells excludes fibrous histiocytoma. Schwannomas contain Antoni A and B areas and are S100 positive features not seen in this tumour. The solid spindle-cell pattern and positivity with vimentin did suggest a sarcoma. However, the absence of pleomorphism, mitotic activity and necrosis were against a malignant diagnosis. Malignancy has been described in 20 per cent of pleural solitary fibrous tumours. Almost all extrapleural solitary fibrous tumours have pursued a benign clinical course.

Complete surgical excision is curative. Clinical follow-up in previously reported cases ranging from six months to 12 years has shown no evidence of recurrence, metastasis or development of similar lesions elsewhere.[2]

Conclusion

We report a case of solitary fibrous tumour arising adjacent to the parotid gland. Immunohistochemical and ultrastructural examination assisted diagnosis. These tumours are rare mesenchymal lesions that are slow growing and not restricted to serosal surfaces. Complete but conservative excision appears to be the treatment of choice. Awareness of, and recognition of these uncommon tumours is important as the prognosis is excellent.

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