The Journal of Laryngology and Otology
March 1990, Vol. **104**, pp. 244–247

Pseudotumour of the maxillary antrum

J. HADLEY F.R.C.S., A. T. COADY, M.B. B.S., C. A. MILFORD F.R.C.S. (London)

Abstract

Orbital pseudotumour is a non-specific inflammation of the orbit which forms a tumour-like mass composed of increased connective tissue and ground substance with vascular proliferation and an infiltrate of chronic inflammatory cells. No demonstrable aetiological agents are found locally, and there is no evidence of specific disease entities such as Hodgkins, SLE or temporal arteritis.

The condition may present in many different ways to the otolaryngologist, and is therefore a rare but important differential diagnosis to be born in mind. We report a rare case of orbital pseudotumour presenting initially with involvement of the maxillary antrum and in association with Riedel's thyroiditis.

Introduction

Orbital pseudotumour was originally described (Birch-Hirshfield A., 1930) as a lesion caused by an inflammatory aetiology whose clinical symptoms and signs simulate an orbital tumour. This definition has subsequently been limited to include a non-specific inflammation of the orbit, without systemic or identifiable local cause (Fujii *et al.*, 1985). In the presence of systemic or local cause, the condition is labelled secondary pseudotumour.

The condition may present in many different ways to the otolaryngologist and is therefore a rare but important differential diagnosis to be borne in mind. We report a rare case of orbital pseudotumour presenting initially with involvement of the maxillary antrum and in association with Riedel's thyroiditis.

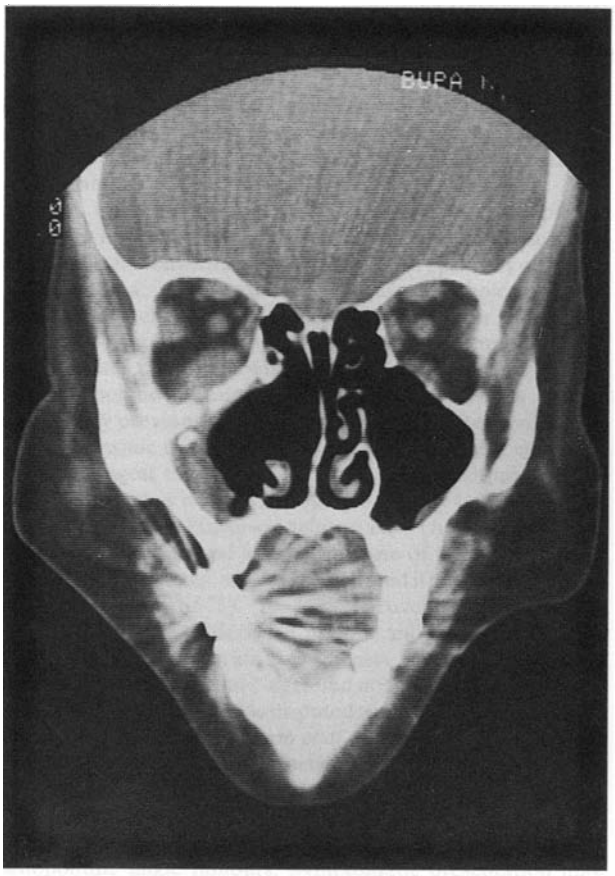


FIG. 1

CT scan. Reconstituted coronal CT showing pseudotumour of antrum invading inferior rectus muscle via a defect in the orbital floor.

Case report

A 47-year-old woman presented with pain and anaesthesia over the left side of the face and in addition complained of a post-nasal discharge. Examination confirmed diminished sensation in the distribution of the left maxillary nerve. The post-nasal space was clear. Sinus X-rays showed an opaque left antrum. A left sinoscopy was performed and the antrum was found to be full of a white substance (similar in appearance to cholesteatoma). A Caldwell-Luc procedure was performed and the antrum cleared of this tissue. Subsequent histology showed this to be dense fibrous tissue with a non-specific chronic inflammatory infiltrate, but no evidence of malignancy.

One month following this the patient noted a swelling of the left lower eyelid. Examination confirmed the presence of the swelling together with a degree of proptosis and ophthalmoplegia. A CT scan showed deficient medial and lateral orbital walls, with tissue from the left antrum infiltrating the orbit and elevating the inferior rectus muscle (Fig. 1).

The orbital lesion was explored via a Patterson approach. At operation, the orbital lesion consisted of fatty and 'woody' tissue, with no apparent breach in the orbital floor. Histology of the tissue showed increased fibrous tissue and a pleomorphic chronic inflammatory infiltrate, mainly consisting of lymphocytes, with follicle formation, plasma cells, histiocytes and eosinophils (Fig. 2). There was no evidence of acid-fast bacilli or parasitic infection. Immunohistochemistry was more in favour of an inflammatory reaction than lymphoma. Stains for fungi and amyloid were negative. The diagnosis of pseudotumour of the orbit was made. The patient was later found to have a stony, hard, fixed goitre. Thyroid function tests and antibodies suggested a diagnosis of primary myxoedema and thyroid biopsies showed tissue consistent with a diagnosis of Riedel's thy-

Accepted for publication: 22 November 1989.

https://doi.org/10.1017/S0022215100112393 Published online by Cambridge University Press

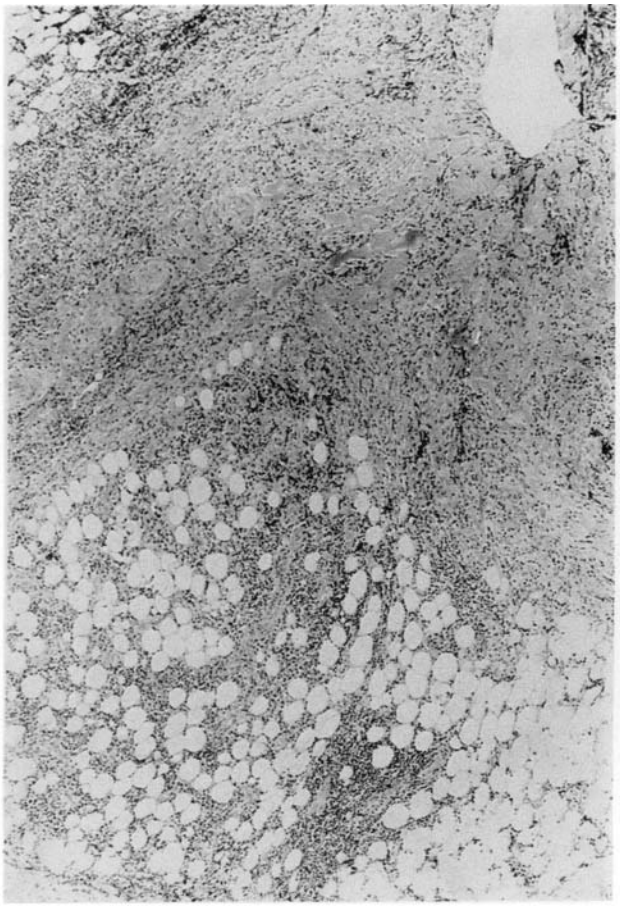


FIG. 2(i)

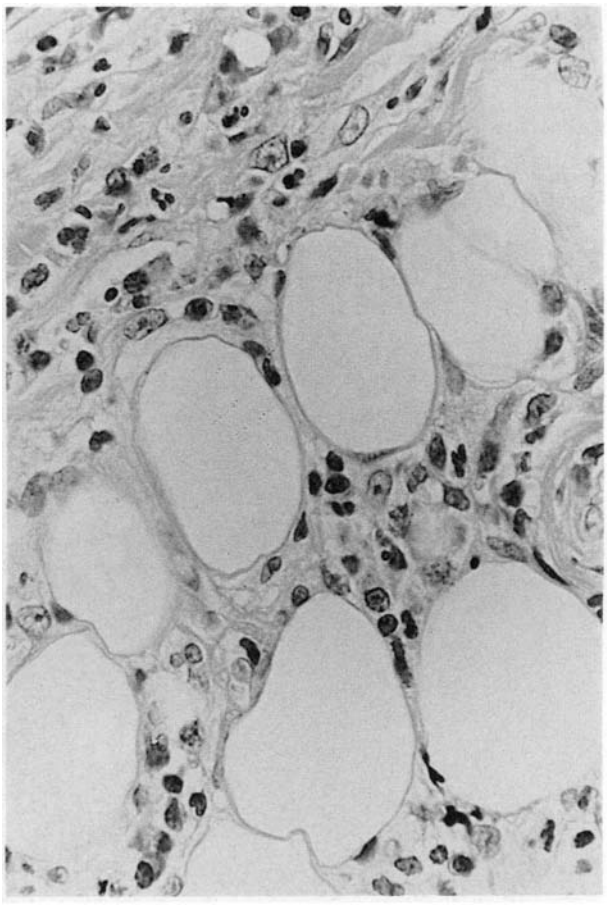


FIG. 2(ii)

FIG. 2

Orbital pseudotumour. (i) Fibrous and adipose tissue infiltrated by mixed inflammatory cells (magnification ×40). (ii) Higher power of the same showing mixed inflammatory infiltrate by lymphocytes, histocytes and polymorphs (magnification ×400).

roiditis (Fig. 3). The patient was treated with thyroxine and her symptoms improved dramatically.

Discussion

The incidence of orbital pseudotumour ranges from eight to 19 per cent of all primary orbital expanding lesions according to source (Nicole *et al.*, 1982). It represents 13 per cent of the cases of unilateral exophthalmos, ranking second behind Grave's disease (Abramovitz *et al.*, 1983). It is most common in the fourth and fifth decades with equal sex incidence, although there is an unexplained predilection for the right orbit.

An early lesion presents with pain, chemosis and exophthalmos, while a more advanced lesion exhibits limitation of visual acuity and fundoscopic abnormalities. More rarely, and of interest to the otolaryngologist, pseudotumour may present with radiographic evidence of bony erosion and sinus opacification (Eshaghian and Anderson, 1981), multiple cranial neuropathies, and severe pain. This obviously makes the differentiation from neoplastic processes and primary inflammation involving the paranasal sinuses and/or nasopharynx difficult. Frequently the first and second divisions of the trigeminal nerve are involved. Extension may occur into the ethmoid sinuses, or into the infra-orbital fissure and foramen. Extension to involve the cavernous sinuses may cause the Tolosa-Hunt syndrome (Kaye *et al.*, 1984).

The extensive differential diagnosis (see Table 1) necessitates careful clinical evaluation. In addition, recourse is made to microscopy and culture to exclude aerobic and anaerobic bacteria, mycobacteria and fungi, and histological studies to exclude lymphoma, vasculitides and specific granulomatous conditions eg sarcoidosis and Wegener's (Noble *et al.*, 1986).

The variety of clinical pictures seen with orbital pseudotumour is reflected in the array of attempts to classify the lesion. Many classifications have been based on histopathological criteria. That of Fujii *et al.* (1985) has attained some acceptance:

(a) *Lymphoid*—composed mostly of lymphocytes with little fibrous tissue.
(b) *Granulomatous*—composed of non-specific granulomata consisting of focal perivascular, and/or diffuse infiltration of lymphocytes, plasma cells and eosinophils, histiocytes and epithelioid cells with various degrees of fibrosis.
(c) *Sclerosing*—composed of varying degrees of fibrous tissue and sparse inflammatory exudate.

It is postulated (Blodi and Gass, 1967) that these represent stages in the progression of the lesion, commencing initially as either lymphoid or granulomatous, and progressing to sclerosing at an end stage. In contradiction, however, there is no evidence to suggest that sclerosing pseudotumour is diagnozed at a later stage from the onset of initial symptoms than other types. Furthermore, no cases have been reported with serial biopsies showing change to the sclerotic picture.

There is a well documented association between the scler-

https://doi.org/10.1017/S0022215100112393 Published online by Cambridge University Press

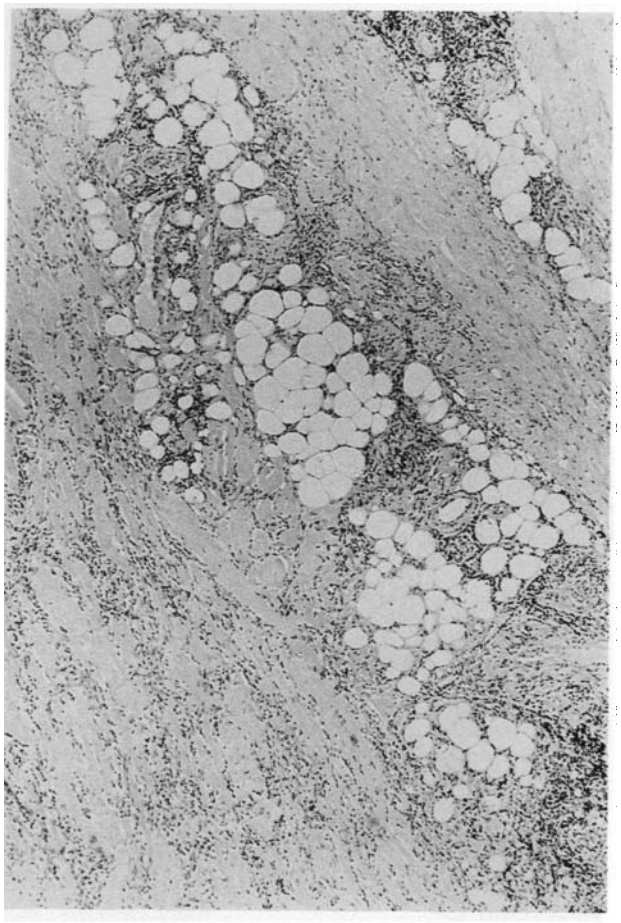


FIG. 3(i)

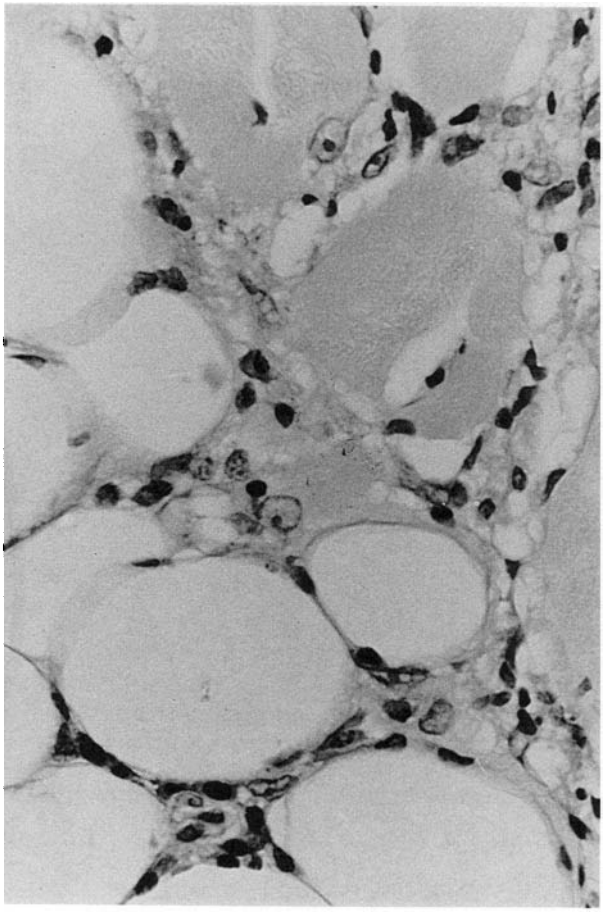


FIG. 3(ii)

FIG. 3

Riedel's thyroiditis. (i) Mainly fibrous tissue with some adipose tissue containing a mixed inflammatory infiltrate (×40). (ii) Higher power of same showing mixed inflammatory infiltrate (×400).

osing type of pseudotumour and other fibrosing conditions e.g. mediastinal and retroperitoneal fibrosis, sclerosing cholangitis, Dupuytren's contracture and Riedel's thyroiditis (Brazier and Sanders, 1983). Clearly such an association is in contradiction to a limited definition of pseudotumour, and suggests the possibility of an entirely separate entity, a condition which might be called multifocal fibrosclerosis (Comings *et al.*, 1967).

The relevance of such classification is evident in terms of management. Any localized lesion situated anteriorly in the orbit can be excised *in toto*. A generalized lesion on the other hand, is less amenable to surgical treatment. A generalized lymphoid pseudotumour, however, responds well to radiotherapy, whilst a generalized granulomatous pseudotumour responds well to steroids with little response to radiotherapy. The sclerosing lesion shows little response to either treatment modality.

TABLE I

THE DIFFERENTIAL DIAGNOSIS OF ORBITAL PSEUDOTUMOUR

Infective causes:	bacterial—aerobic and anaerobic
	mycobacterium
	fungal
	viral
Lipogranuloma	
Fibrous dysplasia	
Histiocytosis	
Amyloidosis	
Wegener's granulomatosis	
Polyarteritis nodosa	
Sarcoidosis	
Lymphoma	

Conclusion

The reported case demonstrates the association between the fibrosing type of pseudotumour of the orbit and other fibrosing conditions eg Riedel's thyroiditis. The unusual presentation, suggesting a primarily antral pathology, clearly indicates the importance of a knowledge of the condition to the otolaryngologist. The radiographic appearance establishes the condition as a rare but nevertheless important differential diagnosis of a radiographically opaque antrum. The association of the condition with other fibrosing conditions would suggest that long-term follow-up of the patient is necessary to exclude later development of other associated lesions.

Acknowledgements

We would like to thank Mr I. S. Mackay, Consultant ENT Surgeon, for his permission to publish this case. Also we would

https://doi.org/10.1017/S0022215100112393 Published online by Cambridge University Press

like to thank the Department of Medical Illustration at Charing Cross Hospital for permission to reproduce Figure 1.

References

Abramovitz, J., Kasdon, D., Sutula, F., Post, K., Chong, F. (1983) Sclerosing orbital pseudotumour. *Neurosurgery,* **12:** 463–467.

Birch-Hirshfield, A. (1930) Die Krankheiten der Orbita: in Graefe Saemisch, Handbuch der gesamten Augenheilkunde, vol 19, Springer, Berlin.

Blodi, F., Gass, J. (1967) Inflammatory pseudotumour of the orbit. *Transactions of the American Academy of Ophthalmology and Otolaryngology,* **71:** 303–323.

Brazier, D., Sanders, M. (1983) Multifocal fibrosclerosis associated with suprasellar and macular lesions. *British Journal of Ophthalmology,* **67:** 292–296.

Comings, D., Skubi, V., Van Eyes, J., Motulsky, A. (1967) Familial multifocal fibrosclerosis. *Annals of Internal Medicine,* **66:** 884–892.

Eshagian, J., Anderson, R. (1981) Sinus involvement in inflammatory orbital pseudotumour. *Archives of Ophthalmology,* **99:** 627–630.

Fujii, H., Fujisada, H., Takahashi, T., Okada, S. (1985) Orbital pseudotumour: histopathological classification and treatment. *Ophthalmologica, Basel,* **190:** 230–242.

Kaye, A., Hahn, J., Craciun, A., Hanson, M., Berlin, A., Tubbs, R. (1984) Intracranial extension of inflammatory pseudotumour of the orbit. *Journal of Neurosurgery,* **60:** 625–629.

Nicole, S., Palma, L., Guiffre, R. (1982) Orbital pseudotumour. Pathologic and therapeutic considerations. *Journal of Neurosurgical Science,* **26:** 57–60.

Noble, S., Chandler, L., Lloyd, R. (1986) Intracranial extension of orbital pseudotumour. A case report. *Neurosurgery,* **18:** 798–801.

Address for correspondence:
J. Hadley FRCS,
ENT Registrar,
Royal National Throat, Nose and Ear Hospital,
Gray's Inn Road,
London WC1X 8DA

https://doi.org/10.1017/S0022215100112393 Published online by Cambridge University Press