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Pathology in Focus

Parotid duct carcinoma arising in bilateral chronic sialadenitis

R. P. Hogg, B.Sc., F.R.C.S., C. Ayshford, B.Sc., F.R.C.S., J. C. Watkinson, M.Sc., M.S., F.R.C.S.

Abstract
It is well recognized that, in general, chronic inflammation can predispose to malignant change. There is however, to our knowledge, no previously reported association between chronic obstructive sialadenitis and salivary gland epithelial malignancy. We describe here the first reported example in the English literature of a salivary duct carcinoma arising in a parotid gland with a long history of chronic obstructive sialadenitis. It is possible that a causal relationship exists between the two conditions. If this were the case then non-surgically treated chronic obstructive sialadenitis patients may well warrent careful clinical follow-up.

Key words: Parotid gland; Sialolithiasis, ductal; Parotid neoplasms

Case report

A 55-year-old, previously fit and well, male had for the past four years been treated for bilateral parotid chronic sialadenitis.

He then presented with a four-month history of a discrete, painless and enlarging swelling in his left parotid gland. On examination there was a 4 × 3 cm firm mobile mass within the left parotid gland. The facial nerve function was intact and there was no associated cervical lymphadenopathy. Fine needle aspiration cytology was performed which indicated an adenocarcinoma. An magnetic resonance image (MRI) scan of the parotids and neck revealed a high signal area within the superficial lobe of the left parotid gland without any associated cervical lymphadenopathy. Chest X-ray, full blood count and liver function tests were normal. A left total conservative parotidectomy and selective level II and III neck dissection was performed with radical post-operative radiotherapy to the parotid gland and neck. Surgery was complicated by a transient paresis of the marginal mandibular nerve. Histology of the specimen revealed a 3 × 2 cm high grade invasive duct carcinoma within the superficial lobe of the left parotid gland with surrounding chronic sialadenitis of the obstructive type and clear resection margins (see Figures 1–3).

Discussion

Salivary duct carcinoma (SDC) is a rare aggressive malignancy with a predilection for elderly men (Felix *et al.*, 1996). It is now recognized as a discrete pathological entity, being previously simply called adenocarcinoma. The parotid gland is involved in 90 per cent of cases (Lewis *et al.*, 1996) with a small proportion arising in a pre-existing pleomorphic adenoma and one example arising in a minor salivary gland (Kumar *et al.*, 1993). There is one previous reported case of bilateral SDC (Schroder and Droese, 1977). The microscopic features of SDC are remarkably similar to those of mammary duct carcinoma, the tumour cells having abundant, finely granular cytoplasm and focal mucin positivity as well as sheets and tissue fragments demonstrating a distinctive cribriform pattern. The prognosis for SDC is dismal with, in one study, 77 per cent dying of disseminated disease at a mean interval of three years after diagnosis and 35 per cent suffering local recurrence (Lewis *et al.*, 1996).

It is of interest that such a rare tumour should arise in chronic obstructive sialadenitis and never before has the phenomenon been described. This may be a rare chance finding, but alternatively it would seem plausible that cancer-inducing genetic events in the cells of the duct tissue occurred as a consequence of the severe and protracted local tissue injury that accompanied the obstructive sialadenitis. As one might expect, the patient described here was anxious to discover if his other, similarly inflamed, parotid was liable to the same malignant change. It is impossible to answer this question with certainty in an isolated case but one could argue that the unidentified biological factors that induced the first tumour could well be present in the contralateral gland and hence place it at an increased risk for malignant change. In this case, a policy of careful clinical follow-up has been adopted.

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From the Department of Otolaryngology/Head and Neck Surgery, Queen Elizabeth Hospital, Edgbaston, Birmingham, UK.
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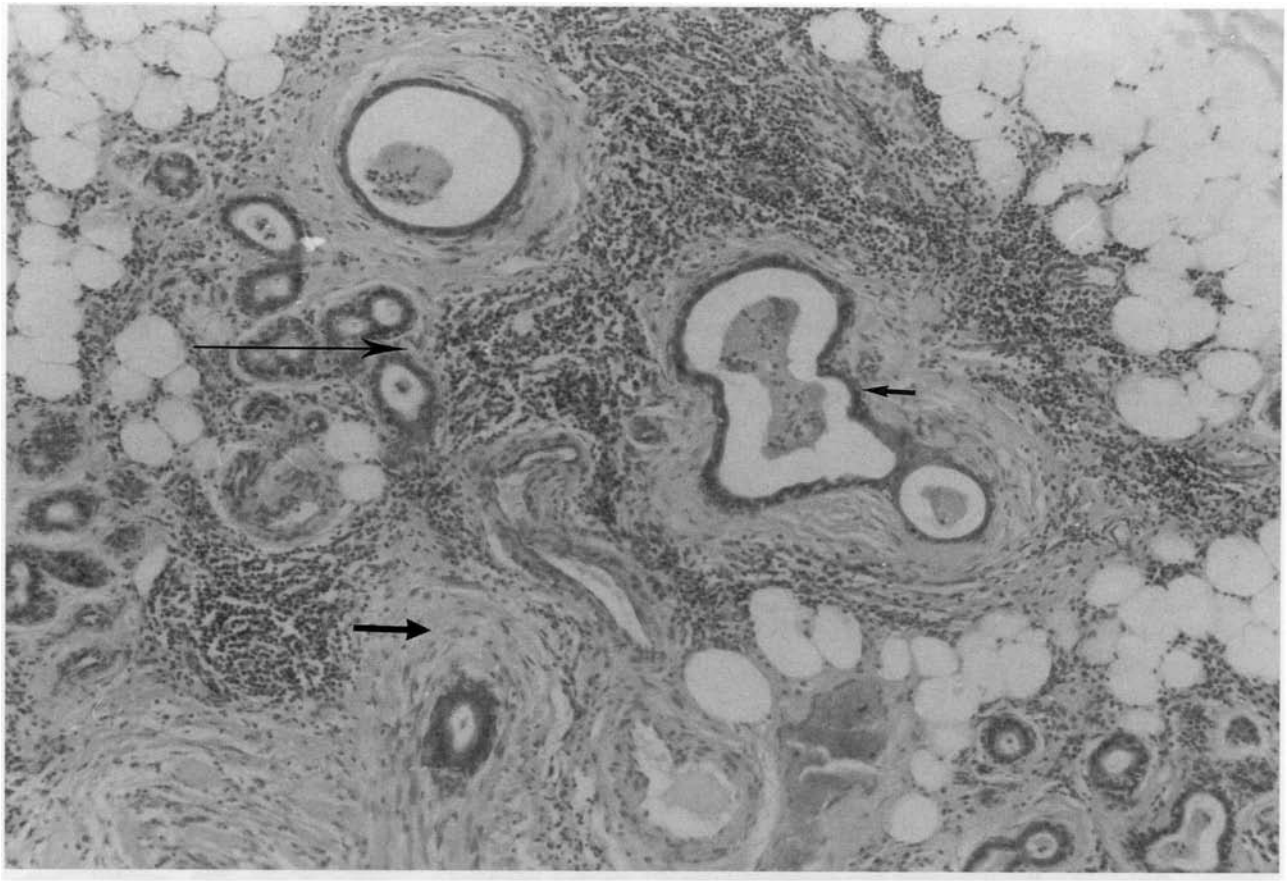

FIG. 1

Photomicrograph showing chronic sialadenitis (obstructive-type) with dilated ducts (small arrow), fibrosis (thick arrow) and focal chronic inflammation (long arrow). No tumour is present in this section (H & E; ×100).

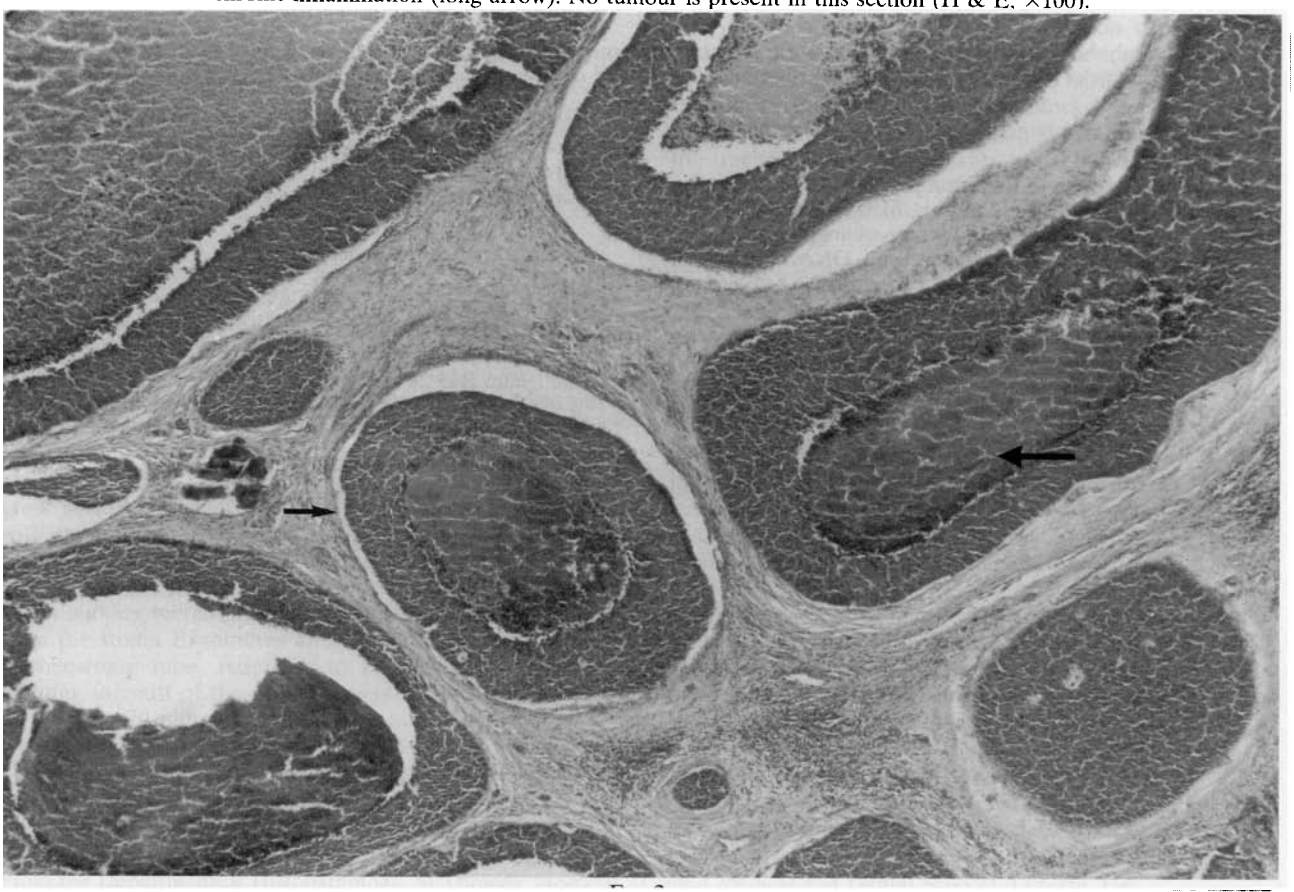

FIG. 2

Photomicrograph showing salivary duct carcinoma in the same specimen. Solid islands of tumour cells (thin arrow) are seen, some with central necrosis (thick arrow) (H & E; ×40).

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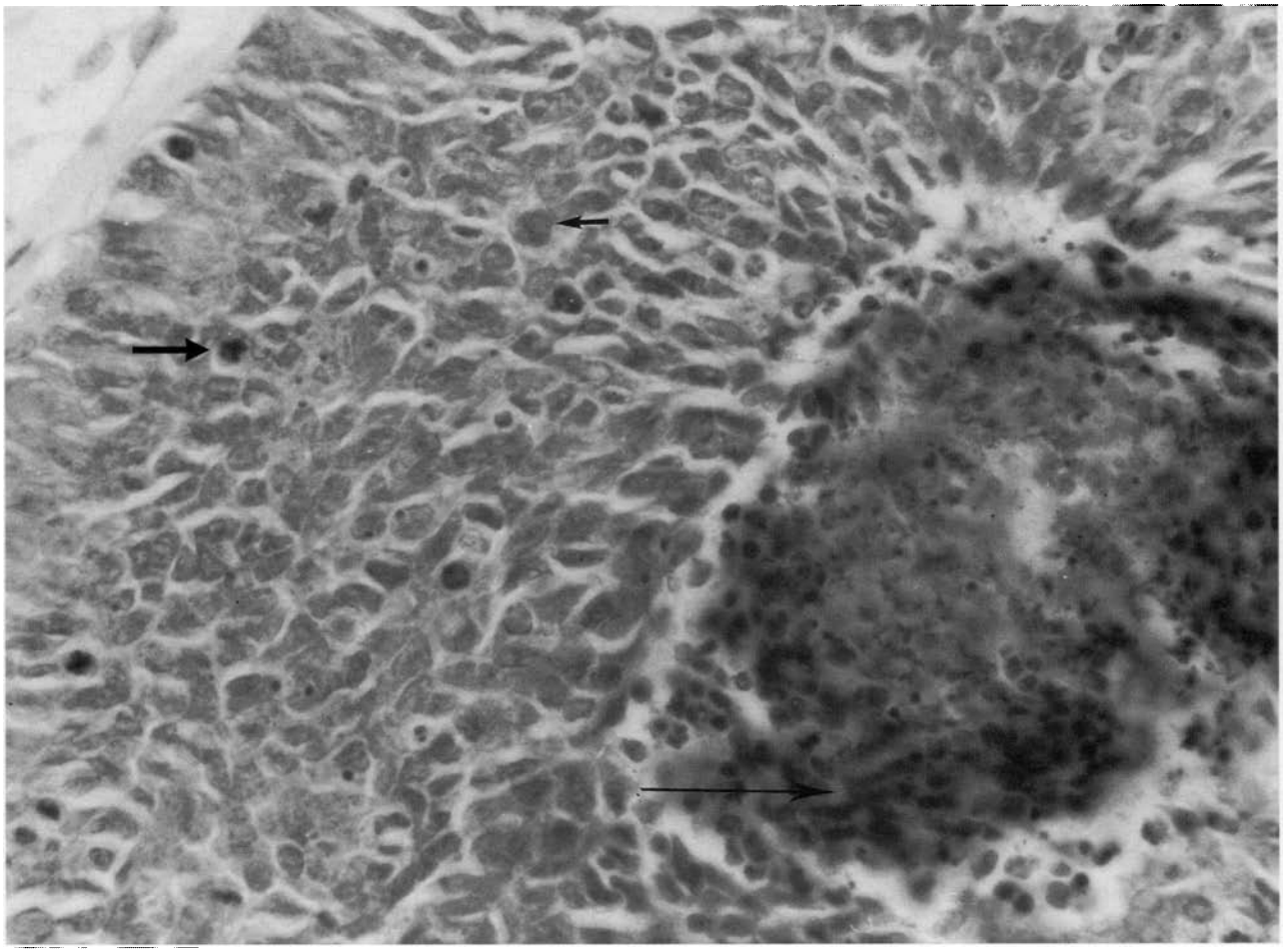

FIG. 3

Photomicrograph showing salivary duct carcinoma in the same specimen. This higher power view demonstrates the presence of high grade nuclei (small arrow), many mitoses (thick arrow) and an area of necrosis (long arrow) (H & E; × 400).

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Address for correspondence:
Mr R. P. Hogg, B.Sc., F.R.C.S.,
Department of Otolaryngology,
Queen Elizabeth Hospital,
Edgbaston,
Birmingham B15 2TH.

Fax: 0121 627 2299
e-mail: rchard.hogg@virgin.net

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