Giant cell arteritis of the tongue associated with squamous cell carcinoma

Giant cell arteritis, though most often affecting the temporal artery, is essentially a systemic disorder, extracranial vessels often being affected.²,³ Lingual giant cell arteritis is a well recognised nosological entity.⁴ The association of giant cell arteritis with mammary carcinoma has been reported,⁵ and there seems to be an association between lingual giant cell arteritis and squamous cell cancer.

Our patient, who had no clinical evidence of giant cell arteritis, underwent total laryngectomy and radiotherapy for a squamous cell carcinoma of the vocal cord and epiglotitís (T4,N3,M0). Recurrent tumour necessitated partial and later total glossectomy. The residual lingual segment showed, in addition to irradiation tissular damage, subtotal replacement of its posterior half by a variously differentiated squamous cell carcinoma and a desmoplastic reaction. In one of 28 sections studied, a single artery was affected by the giant cell arteritic lesion (figure). The affected artery was accompanied along its entire course by the carcinoma and, segmentally, the arterial lumen was occluded by malignant cells admixed with and surrounded by leucocytes and macrophages. The arterial intima was thickened by loosely textured collagenous tissue containing fibroblasts, macrophages, lymphocytes and many multinucleated giant cells (figure). The internal elastic lamella was distorted and fragmented throughout the length of the affected artery.

Giant cell arteritis is a descriptive diagnosis for a variety of disorders being associated with a similar histological expression. The temporal arteritis-polymyalgia syndrome constitutes but one entity within this spectrum of granulomatous vasculitides. In the case reported here, giant cell arteritis was discovered in a tongue heavily invaded by a carcinoma. The reaction in giant cell arteritis, focusing as it does around the internal elastic lamina, means that the latter was possibly injured by one or more factors in our patient: irradiation injury; prior surgical intervention; cancer related direct or indirect effects, and individual susceptibility.

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References

Small blood vessel disease in allergic granulomatous angiitis (Churg-Strauss syndrome)

The histological aspects of the vasculitis seen in Churg-Strauss syndrome have been reported¹–⁴ but do not include changes at the capillary level.

We report small blood vessel ultrastructural changes seen in the muscle biopsy specimen of a 37 year old man who was admitted to hospital for tingling in the fingers, weakness of the wrist extensors, and severe aching pain in the shoulders. There were diminished reflexes in the right upper limb and the reflexes were absent in the lower extremities. The laboratory findings showed 50% eosinophils. Two years before admission the patient had bronchial asthma.

The histological sections from the gastrocnemius muscle showed moderate to pronounced perivascular infiltrates containing histiocytes, plasma cells, and eosinophils. Small interstitial granulomas were present. Some arteries presented foci of fibrinoid necrosis, and occasionally fresh vascular thrombi were evident. Infiltrates with lymphocytes and eosinophils were noticed in the perineurium of small intramuscular nerves.

Electron microscopic examination showed that most muscle fibres were of normal size and regularly shaped. A few atrophic muscle cells with a diameter of only 4 μm were

Figure  Nest's and cords of poorly differentiated squamous cell carcinoma adjacent to the affected artery. The thickened arterial intima contains mononuclear inflammatory and giant cells.

Fig 1 The thin endothelial wall (C) of a small capillary is enveloped by an extremely wide basement membrane.
randomly dispersed. The sarcomere pattern of most cells seemed to be normal, but focal fragmentation of the myofilaments and focal distortion of the Z-line were common. Ringen fibres were found. The sarcolemma was widened and sometimes reached the thickness of 0.5 μm. The amount of endomysial collagen fibrils was increased and in some places the fibrils were attached to the sarcolemma.

The most striking change seen in the capillaries was an extremely wide basement membrane whose diameter varied between 0.5–1.5 μm and was seen in about 90% of all capillaries. Usually the basement membrane appeared in a single homogenous layer (fig 1). Collagen fibrils were closely associated with the external side of the basement membrane. Except for widening of the basement membrane about the small venules, another important finding was the presence of subendothelial deposits. The deposits were of irregular shape, varied in size, and were composed of dense, fine granular material (fig 2). The deposits were situated between the endothelial layer and the smooth muscle layer of the venular wall and could be interpreted as immune complex deposits.

Several recent studies have suggested that the immune system is closely involved in the pathogenesis of Churg-Strauss syndrome due to the finding of an increased amount of IgE in the blood vessels of these patients' or IgM vascular deposition.

The changes described in the present case raise the possibility of an immune complex-mediated disorder in the pathogenesis of Churg-Strauss syndrome.

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Fluorescence in pigmented basal cell carcinoma caused by formaldehyde

The diagnostic importance of fluorescence induced by formaldehyde (FIF) on formalin fixed, paraffin wax embedded tissue sections has been studied in melanomas and other lesions. This technique helps to differentiate malignant melanoma, which shows yellow green fluorescence, from Paget's disease of the skin, undifferentiated carcinomas, histiocytic lymphomas and from benign melanocytic lesions. Fluorescence occurs because of the reaction of formaldehyde with intracellular biogenic amines such as dopamine, epinephrine, and norepinephrine. Morishima et al recently used the touch fluorescence method for the quick diagnosis of malignant melanoma and related lesions. It is worth noting that they observed weak sporadic fluorescence in two out of three cases of basal cell carcinoma included in their study. Earlier, Inoshita et al reported negative FIF in all 10 cases of basal cell carcinoma studied. They did not mention, however, whether they included the pigmented basal cell carcinomas in their study.

We investigated 26 cases of basal cell carcinomas from the files of this department to determine FIF on formaldehyde fixed, 5 μm thick tissue sections, cut from paraffin wax embedded blocks. Out of 26 basal cell carcinomas in our collection, 14 were pigmented. Of these, 11 showed positive fluorescence, the specificity of which was confirmed by treatment with sodium borohydride. The biogenic amines in these 11 cases were probably similar if not identical to the melanin in malignant melanomas. The three cases with negative results indicate that in some pigmented basal cell carcinomas, the pigment molecule is non-fluorescent. It must be mentioned here that this is also true for melanomas. This is because of the nature of the fluorescent moiety is not fully determined yet, although the conversion of intermediary metabolites in the biosynthesis of these amines to 3-4-dihydroisoquinolines has been implicated. Our observations indicate that positive FIF for basal cell carcinoma suggests that the basal cell carcinoma in which it is detected could be of the pigmented variety.

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doi: 10.1136/jcp.42.9.1001-b

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