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. Ring-fibres were found. The sarcolemma was widened and sometimes reached the thickness of 0.5 μ m. 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 μ m 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 patients⁶ or IgM vascular deposition.⁵

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.¹² 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.³ 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 μ m 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.¹ This is because 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.⁴ 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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Value of AgNOR method in predicting recurrence of meningioma

The silver colloid technique for identifying and enumerating nucleolar organiser regions (AgNOR technique) has been widely applied

Fig 2 Dense, fine granular deposits (D) are seen in the subendothelial layer of a small venule.

Letters to the Editor

in an attempt to distinguish between benign and malignant tumours. This seems to have been successful in some cases,¹ but not in all.² As a recent review has indicated, however, if the AgNOR method is to have a place in routine tumour diagnosis it must do more than simply reflect what is obvious morphologically.³ Consequently, we attempted to use this method in a situation where morphological features may not be prognostically reliable⁴—that is, in the prediction of recurrence of meningioma.

Study of 111 meningiomas resected over seven years from 99 patients showed that in 10 cases the tumour subsequently recurred within five years. A further 10 meningiomas from the 22 patients presenting in the first two years of the study period were selected by age-matching: scrutiny of patients' records excluded recurrences within five years. In each case we subjected 3 µm sections from paraffin wax embedded blocks of the original tumour to a standard AgNOR technique.⁵ A mean AgNOR number per cell was calculated after examining 200 cells using a ×100 oil immersion lens. Both groups comprised four histologically "typical" and six "atypical" tumours (the latter defined as those showing a high mitotic rate and at least one of the following: necrosis; atypical mitoses; high cellularity; poor differentiation⁶). They were also matched to include the same number of syncytial and transitional meningiomas. Neither

group contained tumours of fibroblastic or angioblastic morphology. Six of the recurrent, but only one of the non-recurrent meningiomas, were incomplete surgical resections.

Results were expressed graphically (figure). There was no significant difference in mean total AgNOR count between recurrent and non-recurrent groups. Comparison of histologically "typical" and "atypical" meningiomas, however, showed significant differences (Student's *t* test = 3.63; *p* < 0.01). It was noted that in the "typical" cases AgNOR dots were largely confined to nucleoli; "atypical" tumours contained greater numbers of intranuclear dots and also dissociated extranuclear AgNORs.

Site of origin and degree of resectability are generally regarded as the most important prognostic factors in predicting recurrence of histologically benign meningiomas.⁴ This was found to be the case in our series. Morphology proved to be a less reliable predictor of behaviour.⁴ Our results show that the AgNOR method is of no value in identifying those meningiomas that would eventually recur. Although the technique could distinguish "atypical" from cytologically bland meningiomas, there was an overlap between groups, limiting its value in classification of any individual tumour. We did not attempt to relate AgNOR score to individual "atypical" features or to

evidence of invasion, but a larger study might have identified a positive correlation with one or more of these. For practical diagnostic purposes, however, equivalent information could be obtained from conventionally stained sections.

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Figure Scattergrams showing mean AgNOR counts in meningiomas grouped according to behaviour and histological appearance.

Inability of AgNOR counts to differentiate between bronchial carcinoid tumours and small cell carcinoma of the bronchus

AgNORs are dark dots seen in cell nuclei after certain silver staining techniques have been applied. They are believed to be the result of binding to argyrophilic proteins associated with the nucleolar organiser regions of DNA. After a recent study which showed that AgNOR counts may be able to distinguish between hyperplasia and carcinoma in the prostate gland,¹ enormous interest resulted in the possible value of AgNOR counts in a range of diagnostic problems in histopathology. It has already been shown that AgNOR counts may help distinguish small cell carcinoma of the bronchus from lymphocytic infiltrates²; we attempted to use the technique to distinguish small cell carcinomas from carcinoid tumours.

We were able to find paraffin wax embedded material from 13 cases that had been originally diagnosed as oat cell carcinoma or small cell carcinoma, where there was plentiful untraumatised material for further study. Nine resection specimens with an