Pulvertaft, R. J. V., and Humble, J. G. (1960). The bone marrow in leukaemia. *Acta haemat. (Basel)*, 24, 68-70.

The Histology of Chronic Candidal Infection of the Rat's Tongue and its Relevance to Human Oral Leukoplakia

J. H. JONES AND C. RUSSELL (*Department of Oral Medicine, University of Manchester*) Superficial candidal penetration occurs in some cases of human oral leukoplakia which may progress to carcinoma. The relationship of mycelial penetration to leukoplakic change is not clearly understood and this experiment was designed to test the hypothesis of a direct association. One of two groups each of 60 rats was inoculated orally with *Candida albicans* and given tetracycline. The second group received *C. albicans* and tetracycline only during the inoculation process. One of two control groups each of 10 rats received no inoculation or medication and the second group tetracycline only. This summary describes histological findings only.

Infection, usually on the dorsal surface of the tongue as mycelial penetration limited to the keratinized layer of the epithelium, was demonstrated in 12, eight, seven, seven, and two animals out of groups of 20 after five, nine, 13, 16, and 21 weeks respectively. Infection was associated with the loss of the normal lingual papillae and with flat-surfaced hyper- or parakeratotic stratified squamous epithelium in which basal layer mitotic activity was sometimes prominent. Beneath infected epithelium mononuclear cells were found in the corium and the superficial muscle cells often showed degenerative changes with giant cell reaction and sarcolemmal proliferation. Striking inflammatory cell accumulation was sometimes found deeply in muscle around blood vessels. The histology demonstrates that candidal infection *per se*, though limited to the cornified layer of the epithelium, produces marked change in it and in the corium and underlying muscle, presumably due to substances released from disintegrating mycelia. The findings support the suggestion that *C. albicans* sometimes has an aetiological relationship with human leukoplakia (Cawson and Lehner, 1968).

Reference

Cawson, R. A., and Lehner, T. (1968). *Brit. J. Derm.*, 80, 9-16.

'Sclerosing Haemangioma' of the Lung: An Alternative View of its Development

A. KENNEDY (*Department of Pathology, University of Sheffield*) 'Sclerosing haemangioma' is a name which has been applied to a group of uncommon benign pulmonary lesions characterized by their papillary nature, a sclerotic stroma containing lipid

and, in some cases, evidence of haemorrhage. There is little evidence that these lesions are really angiomatous. Studies of two examples removed surgically after being discovered as incidental radiographic findings show that the cells lining the papillae have large vacuoles which contain whorled electron-dense inclusions. These epithelial cells have the features of granular pneumonocytes, cells known to contain phospholipid. Both lipid and cholesterol are abundant in the stroma of both tumours and the lipid is distributed in a nodular fashion. Histologically the lipid gives a strong reaction to stains for phospholipid and it is suggested that the lipid is derived not from the haemorrhage but is produced by the epithelial element of the tumour.

A Fine-needle Aspiration Biopsy Service

J. V. LEVER (*Department of Pathology, University of Bristol*) Fine-needle aspiration biopsy can be done anywhere, needs simple equipment and little preparation, causes the patient only slight discomfort, and is practically free from complications. Most patients do not mind several biopsies and the procedure can be followed immediately by irradiation (in contrast to surgical biopsy).

In the service described cells are aspirated from subcutaneous masses through a no. 1 needle with a 20 ml disposable plastic syringe. The aspirate is spread on a slide, air-dried, and stained by Giemsa's stain. Examples of the cytology obtained will be shown and the results of 350 biopsies taken in the first two years given. One hundred and sixty-four aspirates were from breasts, 81 from lymph nodes, and 105 from other sites.

Results were classified as positive (malignant cells identified), negative (no malignant cells identified), and failed (insufficient material or don't know).

Ninety-three were reported positive (one falsely), 196 were reported negative (28 falsely), and 61 biopsies failed (25 from malignancies).

When one bears in mind that some of the negative results did give a diagnosis, eg, abscess or fat necrosis, and many of the patients with failed biopsies had a subsequent positive aspiration, there is no doubt that the service is a useful extension of physical examination in patients with a subcutaneous mass.

II Symposium on renal transplantation

The Clinical Biochemistry of Transplants

D. EVANS (*Addenbrooke's Hospital, Cambridge*) The