KERATOSIS LARYNX

By DR. HELEN RUSSELL

IT is difficult to know what a pathologist can contribute to the immediate problem, but it is his duty to present continually the morbid anatomy and morbid histology of the tissues in disease because that is the basis of rational medicine and of rational discussion. It is important to be sure about what is being discussed in terms of form and fine structure.

Before dealing with keratosis may I share with you what is at the back of my mind when I am asked to look at laryngeal or tracheal biopsies today. The first thought is that they are very rare, perhaps increasingly so. The breathing tube seems to be very efficient. It is seldom that one feels obliged, even at post-mortem examination, to examine its mucous membrane microscopically. Then, from a general standpoint, one thinks of the breathing tube as one of several long passages which pass into the interior of the body at either end for purposes of absorption, or excretion or both. They are transitional passages and are lined in many places by what we call transitional epithelium, epithelium which is not quite like the outside skin, nor like the highly functioning membranes into which the passages lead. However transitional epithelium is "epidermoid", it resembles the skin in being a membrane several cells deep; in places squames develop on the surface, elsewhere there are cilia, but its main characteristic is that it is perpetually moistened by the secretion of large mucous glands. Any piling up of squames on such a moist surface appears as a white (leucoplakic) patch to the naked eye.

It follows from these histological characteristics that the common surface cancers of these passages are squamous cell cancers, or small cell transitional cancers, or can be classed as intermediate epidermoid tumours.

The small cell transitional cancer is of interest because when I was a student it was called a small cell sarcoma; later, it was recognized to be a cancer of the bronchus and was called the oat-cell cancer. Still later it took its place in the large group of transitional cancers which are common in the pharynx and throat, as well as the bronchus. It is indistinguishable from many cancers of the urinary passages and is a characteristic tumour of the cervix of the uterus.

When it comes to today's subject, Keratosis, one thinks of innumerable specimens from many parts of the body showing prolonged disorder of that kind. Keratosis is a very common reaction and many contributory

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factors in its development are known to us: injuries, burns, inflammations, noxious chemicals, vitamin deficiencies, endocrine imbalance and heredity all come to mind.

The commonest cause of keratosis is intermittent pressure causing thickening of the hands and feet, and the next commonest is some inflammatory condition of the mesenchyme under the epithelium. There is keratosis in relation to all wound healing and overlying the common inflammations. In the larynx chronic pyogenic infection can lead to pachydermia of the mucosa. It is a rare condition today, and the slide which I have was made from a specimen prepared half a century ago. The mucosa appears grey, granular and dry. The mucous glands are distended with pus which accounts for the granularity and dryness, and to the naked eye the lesion is not as white as leukoplakia because of the obstruction to the normal secretion of mucus.

Passing from the pyogenic infections to the granulomas both syphilis and tuberculosis cause keratosis and gross distortion of the surface epithelium. The distortion of the epithelium in these slow inflammations may be a snare for the inexperienced worker who may suspect early cancer of the surface if he has not enough of the underlying mesenchyme to show the cell arrangement which is characteristic of the granuloma.

Repeated burns are important as a cause of leukoplakic keratosis of the lip, and the keratotic actinic dermatitis of repeated sunburn is well recognized in individuals of pale-eyed races who work in the tropics and sub-tropics.

Leukoplakic keratosis of mucous membranes is a very curious lesion, it is usually a defined patch where the mucous membrane shows a kind of gigantism with an increase in cell size and cell number and failure of the squames to loosen. There is always an underlying small cell infiltration which is mainly of lymphocytes. There may or may not be an increase in mitotic activity in the epithelial cells, but not irregularity of cell size and of nuclear size and shape.

Some specimens are obviously malignant anatomically and present no difficulty in diagnosis, while others in which there is no break through show irregularity in cell and nuclear size. The latter are sometimes described as *cancer in situ*, but I prefer merely to describe the cytological irregularity because it is impossible to predict how such lesions will progress.

I have not found the term "cancer *in situ*" useful in teaching students, it is not sufficiently explicit and could be used to describe such varying conditions as Bowen's disease, and Paget's disease as well as the intra-epithelial stage of most cancers.

Finally may I ask whether there is any evidence that keratosis of the larynx is related to familial keratodermia. I have only found one reference to inherited laryngeal keratosis, that of Mr. R. Thomas who saw it in

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three generations of one family. We already know that inherited palmar keratosis is correlated with cancer of the œsophagus in late life, and some cases of cancer of the post-cricoid lesion show a syndrome of blood dyscrasia and epithelial changes in the hands. It would be of interest to know whether cases of laryngeal cancer and their relatives have any familial peculiarity which could act as a warning to guide them from certain habits and occupations, and perhaps even from certain domiciles.

This matter of inherited weaknesses was of interest to doctors long before the bacterial era and Jonathan Hutchinson writing about it called it *The Pedigree of Disease*. Today, because bacterial scourges are being controlled we have longer life and longer memories to draw upon in collecting records of familial peculiarities, some of which, though apparent early in life, do not show their lethal properties until comparatively late.

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