SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

May 3rd, 1963

Discussion on Keratosis of the Larynx

PROFESSOR F. C. ORMEROD in opening the discussion said that he would like to refer briefly to the possible causes of keratosis and then to two debatable aspects of the subject. (1) How to determine when a keratosis was in the process of becoming malignant or had become so, and (2) how to treat such a keratosis, either before or when the malignant change takes place.

Keratosis and leukoplakia are found on the lips, inside the mouth, in the pharynx and in the larynx, though rarely in more than one of these sites in any one patient at a given time. The condition, however, is usually fairly widespread and tends to progress and to recur after removal. Dr. Russell had referred to the Paterson-Brown-Kelly condition and it was possible that the changes under discussion might similarly be due to some metabolic irregularity, or some hormone or vitamin deficiency. They were too widespread and too inclined to persistence and recurrence to be due only to local irritation. The figures given by Dr. Norris suggest that smoking is not the only factor although it may have an important share in the induction of keratotic changes. The problem of determining when a keratotic condition had become malignant was partly observational and partly histological. The white masses could be observed for many years, but when malignancy had been superadded there was usually some change that could be seen by the naked eye—a thickening of the visible part of the cord or more frequently small rounded red masses which protruded through the white covering of the cord, and indicated the onset of malignancy. Diagnosis by histology could be difficult because of the changes known as intra-epithelial carcinoma or epithelioma *in situ* which often appear very similar to those of acanthotic keratosis and it was not easy to determine when the latter condition had changed to one of the former ones. A saying of Dr. Ewing—that it "is not true to say that a tissue must be malignant or non-malignant; it may be in the process of becoming malignant", seems to be appropriate in this context. Another difficulty is that of the biopsy. The white masses are never malignant and it is necessary to take portions of the deeper part of the cord itself for the true nature to be determined. A laryngologist hesitates to remove, repeatedly, portions of the cord, a practice which is in itself likely to cause marked permanent changes in the vocal cord and in the voice.

With regard to treatment he agreed with Dr. Lederman that the condition was slow to develop and slow to change to malignancy and there was no need to

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panic because some cases of keratosis developed into epithelioma. The highly differentiated carcinoma, which usually arose out of a keratosis, was of the type which responded well to treatment by either surgery or radiotherapy. He had analysed the cases of keratosis which had been seen at the Radiotherapy Consultative Clinic at the Royal National Throat, Nose and Ear Hospital during the period 1949-59. During this period there had been 427 patients with carcinoma of the larynx, and of these it had arisen on the vocal cord in 237. During the same period there had been presented for consideration as to the suitability of radiotherapy seven patients with keratosis which had not become malignant. There were at the same time 25 patients in whom malignancy had supervened on a keratotic condition. An analysis of these 32 cases of keratosis is set out in the following three tables. (The average ages quoted represent those at which the patient was first seen.)

TABLE I

Keratosis without malignant change		7
Average age 54 years		
Male, 7		
Alive and well for three years or more after first attendance		
After local removal	5	
After radiotherapy	2	

TABLE II

Keratosis with malignant change		25
Average age 59·6 years		
Male 24, female 1		
Alive and free of disease for three years or more		16
After radiotherapy only	14	
After radiotherapy and subsequent laryngectomy (average age 56·5 years)	2	

TABLE III

Keratosis with malignant change:		
Dead:		9
From persistence of disease	3	
From other cause (Parkinsonism) but with persistence of disease	1	
(Average age 60·5 years)		4
From other causes but free of laryngeal disease for three or more years	5	
(Average age 69 years)		5
Carcinoma Bronchus	2	
Carcinoma Pancreas	1	
Cardiovascular disease	2	

Some 30 cases a year of keratosis involving all parts of the larynx are seen at the Royal National Throat, Nose and Ear Hospital but the majority are successfully treated without reference to the Radiotherapy Clinic.

It can be seen from these details that the prognosis of the patient with keratosis is good even if he develops carcinoma. Only three of 25 such patients died of their disease. They were aged 59, 60 and 67 years when they died, and each of them had had a course of radiotherapy followed by laryngectomy. Of

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the five who died of other causes, and without any return of cancer of the larynx the ages at death were 61, 70, 77, 81 and 82. They had all been treated by radiotherapy.

In the case of the three patients who did not respond to treatment and who died of their disease, the tumours had already extended into Stage III when they were first seen.

To sum up, keratosis of the larynx needs continuous observation, and, on any change being seen to occur in the vocal cord itself, histological investigation should be carried out. Once malignant change has taken place, radiotherapy in full tumour dose is required.

In view of the comparatively infrequent occurrence of malignant change in keratosis of the larynx, and of its late appearance in the course of the disease and in view also of its satisfactory response to treatment it hardly seems necessary to apply drastic treatment to the keratosis whilst it is in an innocent phase.

MR. MUNRO BLACK said that he wanted to remind the meeting that chronic sinusitis was a very common cause of irritation to the larynx and must never be forgotten. Probably it is wise in all cases of chronic laryngitis or keratosis to perform antral puncture and lavage.

As regards the late danger from irradiation, looked upon as a long-term carcinogenic agent, there is probably little risk of this now. In years past when such treatment was used for hyperthyroidism and tuberculous lymph adenitis, a different type of irradiation was in use, and it thus produced considerable tissue damage with notable scarring. It is in this scarred tissue that late malignancy may occur. Such should not now be the case with the more penetrating irradiation with infinitely less damage to the normal tissues.

With reference to keratosis of the larynx being due to an inherited peculiarity of the epithelium, such would probably be accepted. In many cases one finds this in males who have a very red larynx and a red face. This indicates an epithelium which is hypersensitive to a degree of trauma or irritation which would have little effect upon a more normal skin. These people are the so-called "fair-skinned" types, sunburn is common, as is late hyperkeratosis and perhaps malignant change, also the sub-epithelial blood vessels react much more evidently to any general vasodilator such as alcohol. In such people there is little doubt that the epithelium of the larynx is equally hypersensitive to irritation or trauma from whatever cause. Little can be done except to warn them to protect themselves as far as possible from the common irritants.

MR. MAXWELL ELLIS said that in his experience conditions of laryngeal hyperplasia and hyperkeratosis were becoming rare. Just over 10 years ago when collecting material for the chapter on chronic non-specific laryngitis in Scott-Brown's "Diseases of the Ear, Nose and Throat" he was able to gather a number of cases of localized "leukoplakia" or "pachydermia", and was able to include the descriptions of many other similar cases reported by other authors. However, during the past few years, in seeking for material for illustrations, he has come across very few of such cases, although seeing many more laryngeal cases in total. Collecting the figures has confirmed this clinical impression. Whatever it was which gave rise to these proliferative keratotic masses seems to be less aggressive. The type in which one vocal cord only is

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affected is the one which is most potentially dangerous. Dr. Norris quoted the speaker's opinion given in 1953 that laryngofissure might be the best treatment for this condition, and he still believes that this is often the correct and prudent treatment, since there is little doubt that these cases frequently progress to carcinoma *in situ* or frank ulcerated epitheliomas.

He was rather cautious of trying to remove the keratotic deposits by direct laryngoscopy and felt that the cord could easily be damaged even in the best hands. Nevertheless, biopsy was essential.

He did not believe that irradiation had any place in treatment, and was glad to learn that Dr. Lederman held the same opinion. It was probably best to advise first of all medical measures such as voice rest, avoidance of tobacco and dust, and speech therapy. If the keratotic lesion did not regress, a second biopsy was necessary and a third if the lesion still persisted after several months of observation and treatment. Even if no cancerous changes were revealed in this third biopsy, and especially if the lesion had increased in size whilst under surveillance, local excision would probably save heartache later. He had performed this in three cases during the past two years and in two of them an area of histological epithelioma was found, whilst in the third carcinoma *in situ* was present. He felt that keratosis of one vocal cord was almost a clinical entity, and it should be regarded seriously as a potentially malignant condition.

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