Acid laryngitis

By J. E. Delahunty (Melbourne)

Chronic laryngitis can be of obscure aetiology, treatment in such cases generally being non-specific and unrewarding. One classic example is the chronic localized variety regionally confined to the posterior third of the larynx, and sometimes grouped under the general clinical heading of pachydermia. Included among the appearances of this variety of laryngitis are a hyperplastic heaping of the interarytenoid tissue and inflammation and oedema of the posterior third of the true vocal cords with possible granulation tissue formation.

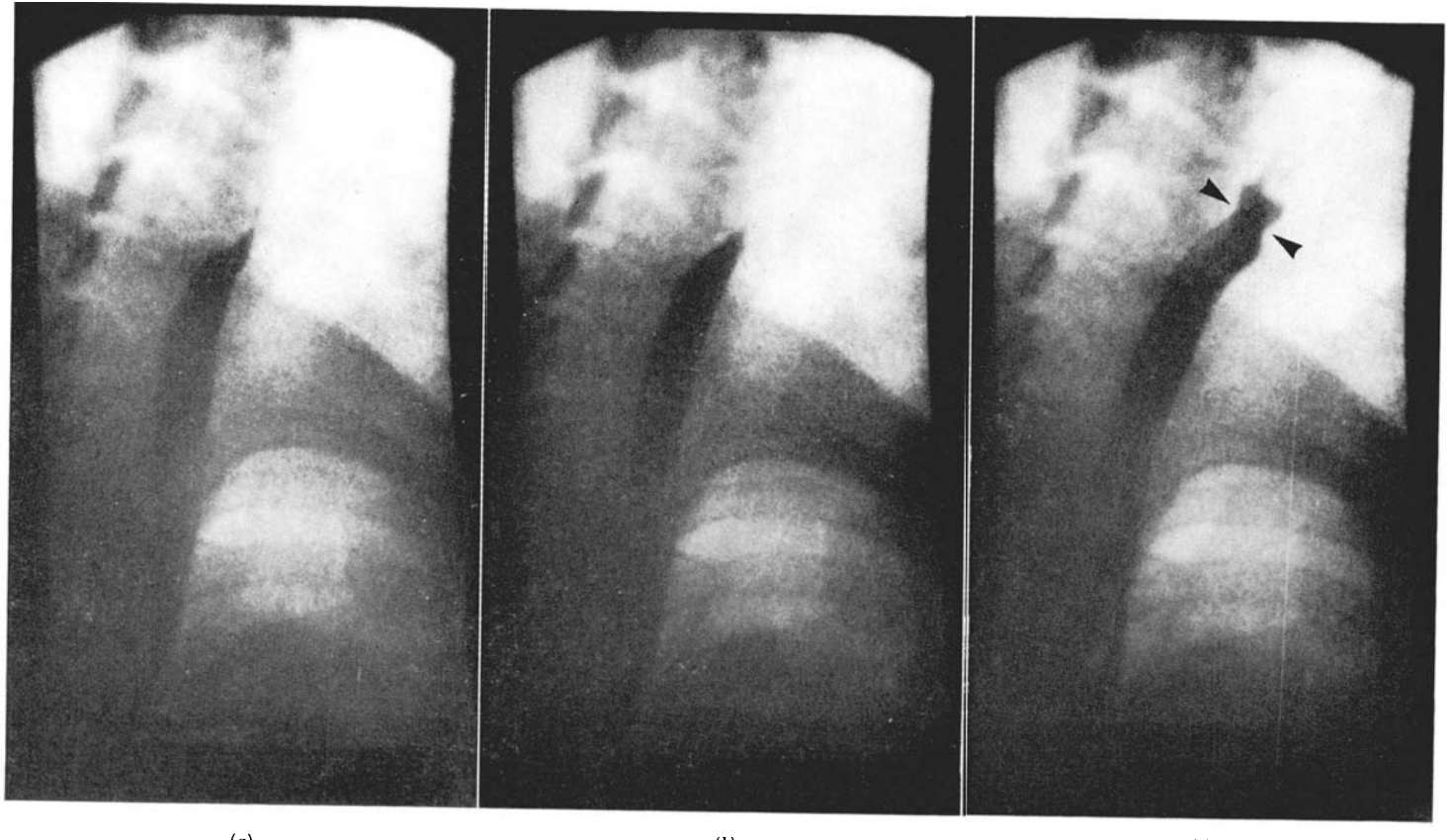
The predilection for the posterior third of the larynx in these chronic and usually intractable forms of chronic laryngitis has been unexplained, but it seems likely a common causal basis is responsible.

The acid-barium swallow, Donner *et al.* (1966), has demonstrated acid-induced oesophageal motility disturbances consequent upon gastro-oesophageal reflux. The acid-barium mixture reduplicates the effect of gastro-oesophageal reflux and stimulates the acid sensitized oesophagus of patients with reflux oesophagitis. This produces spasmodic contractions of the oesophagus, sometimes associated with retrograde peristalsis. The acid bolus is often seen to return to the upper reaches of the oesophagus in a retrograde manner, remaining stationary for a time beneath the closed cricopharyngeus. In this situation, the bolus is under pressure, being restricted above by the cricopharyngeus and below by an area of oesophageal spasm. This 'distended' area of oesophagus has been shown to produce the referred suprasternal sensation of a lump in the throat and accounts for many cases of so-called globus hystericus, Delahunty and Ardran (1970).

The sub-cricopharyngeal tension bolus has a further significant implication in that should the patient again swallow the relaxation of the cricopharyngeal sphincter may allow the bolus to regurgitate through the sphincter into the hypopharynx (Fig. 1). It seems reasonable, therefore, to postulate that in patients with reflux oesophagitis, gastro-oesophago-pharyngeal reflux must occur periodically, particularly at night when the patient is horizontal. As most people sleep either prone or on their side, the posterior part of the larynx would appear to be particularly vulnerable to the hypopharyngeal acid content. The acid would obviously constitute a source of chronic irritation to the posterior extent of the larynx, and could well be responsible for examples of posterior laryngitis usually ascribed to chronic irritation of non-specific origin.

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(*a*) (*b*) (*c*)

FIG. 1.

A series of four frames taken from a cine fluorographic film, exposed at 12 frames per second, showing regurgitation of acid-barium from upper oesophagus through cricopharyngeus (arrows) into hypopharynx.

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Investigation

Nine patients presenting evidence of an intractable, unexplained posterior laryngitis were involved in this study, six males and three females, average age 46 years. Clinically, they possessed varying degrees of chronic inflammation restricted to the posterior third of the larynx, there being characteristically an interarytenoid heaping of mucosa with chronic inflammation of the posterior third of the true vocal cords. The leading symptom was a fairly persistent or sometimes fluctuating hoarseness. Five patients admitted to symptoms suggestive of reflux oesophagitis and three suffered from the sensation of a lump in the throat identical to that of globus hystericus.

Acid-barium swallows were performed with the patients lying on their right sides and the films exposed in the antero-posterior projection at twelve frames per second using an image intensifier and 35 mm. camera. The results were strongly positive in all cases and in two, oesophago-pharyngeal reflux was demonstrated cinefluorographically. The patients were placed on a strict regime of Asilone (Berk Pharmaceuticals) and Gaviscon (Reckitt and Colman) with elevation of the head of the bed at night. All cases improved symptomatically and clinically. Objective evidence of clinical improvement varied in time depending on the degree of pathology present, but averaged six to eight weeks (Fig. 2).

Discussion

Chronic inflammation restricted to the posterior third of the larynx is a well-recognized clinical entity and frequently poses a therapeutic problem. Investigations are usually non-contributory and the non-specific therapy advocated of no avail, the patient being forced to endure a fluctuating or persistent hoarseness for months or even years.

The cinefluorographic observation of oesophago-pharyngeal acid-barium reflux provides a likely pathogenesis for many examples of posterior laryngitis, often loosely grouped under the clinical term pachydermia. In certain patients with reflux oesophagitis, gastro-oesophago-pharyngeal reflux obviously occurs, the acid gastric content causing irritation of the posterior extent of the larynx.

An established acid laryngitis classically presents a hyperplastic heaping of interarytenoid mucosa with possible redness and oedema of the posterior third of the true vocal cords. Histologically the mucosa shows epithelial proliferation and papillary down growth with areas of keratosis and para-keratosis, indistinguishable from the histological picture of so-called pachydermia (Fig. 3).

Patients with evidence of a posterior laryngitis should be specifically questioned for symptoms relating to reflux oesophagitis, including the sensation of a lump in the throat. The denial of such symptoms does not

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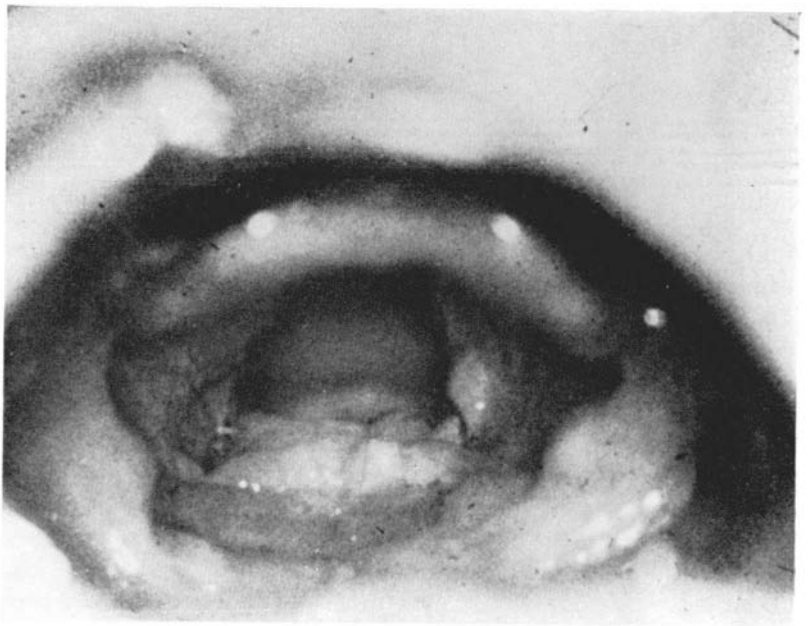
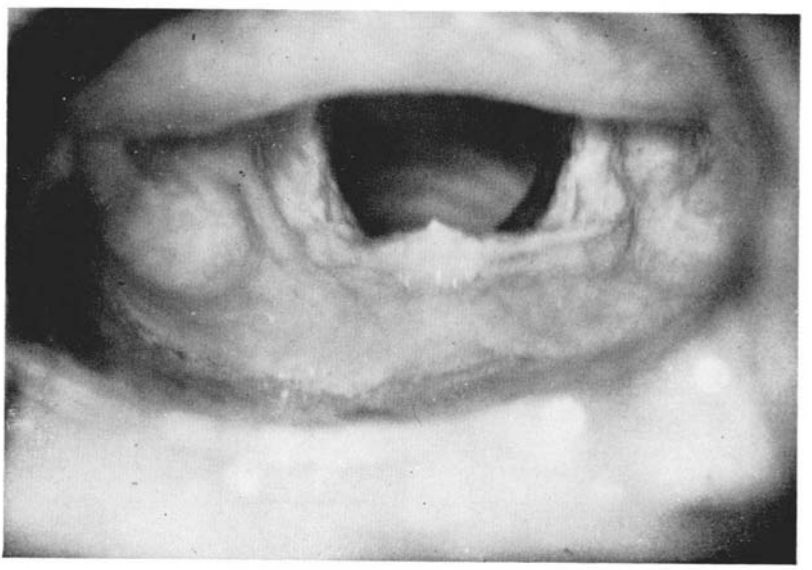


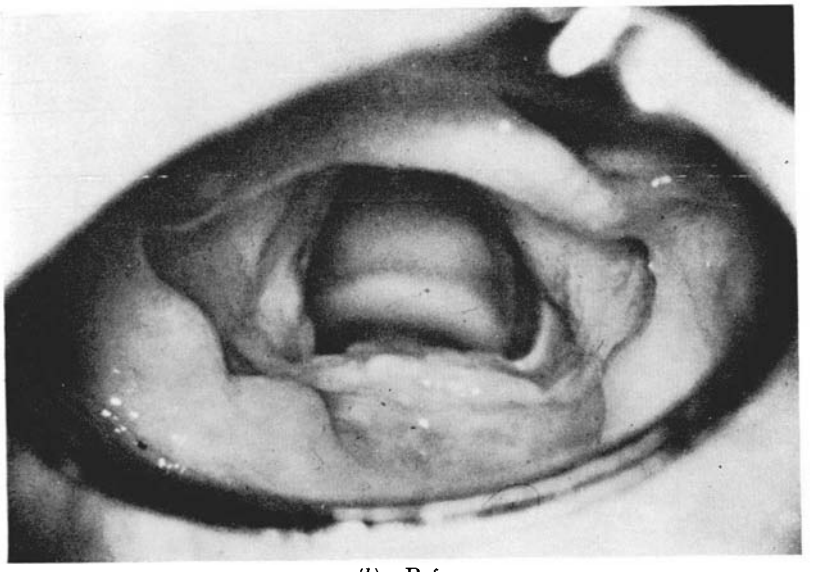
FIG. 2*a* Before

Three cases of acid laryngitis showing response after therapy.

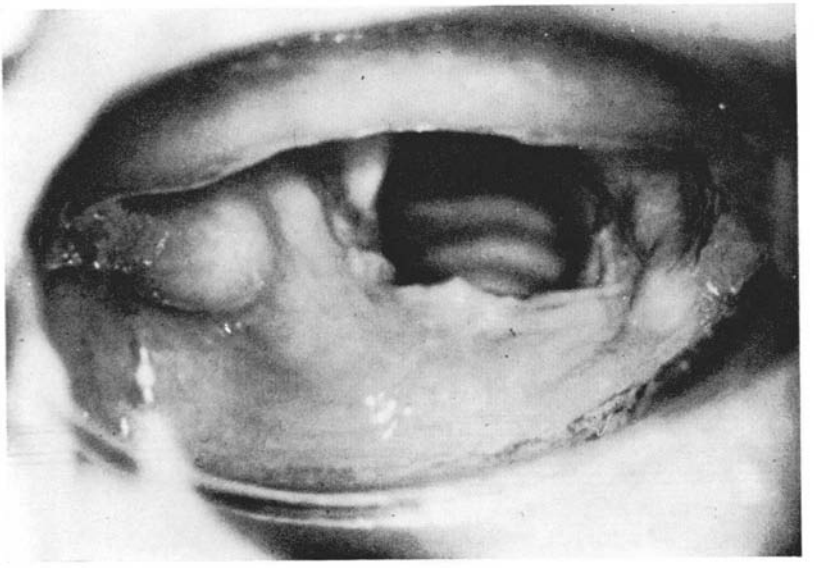


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(*b*) Before



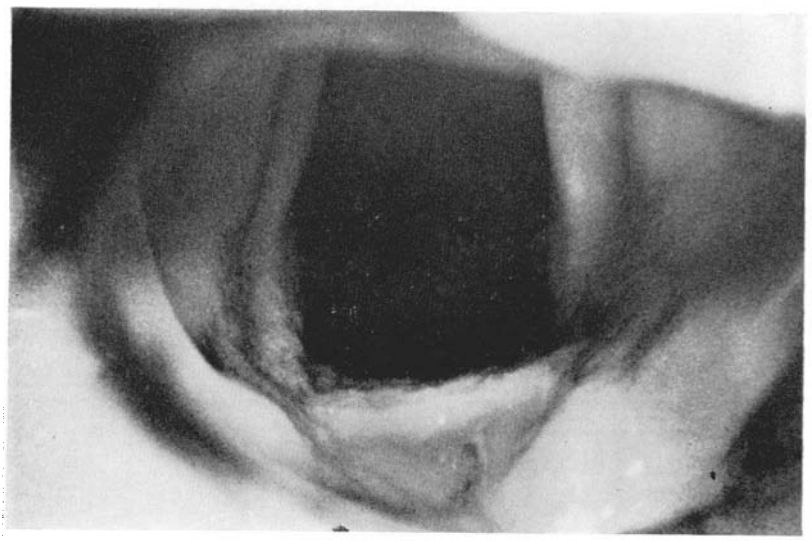
(*b*) After

necessarily preclude reflux oesophagitis as the condition may be subclinical. An acid-barium swallow will demonstrate oesophageal motility disturbances in an acid sensitive oesophagus consequent upon gastro-oesophageal reflux. The institution of strict and effective therapy in this

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(*c*) Before



(*c*) After

regard has been shown to reverse the laryngeal pathology (Fig. 2). The length of time required for objective and symptomatic improvement varies depending on the degree of pathology present, but averages six to eight weeks.

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As always, it is imperative to eliminate more serious diagnoses in patients with posterior laryngeal disease, namely tuberculosis, carcinoma and syphilis. Appropriate investigations, however, will readily exclude these conditions. Generally there is no apparent cause and the usual explanation of chronic irritation may well be attributed to acid reflux in a significant proportion of these cases.

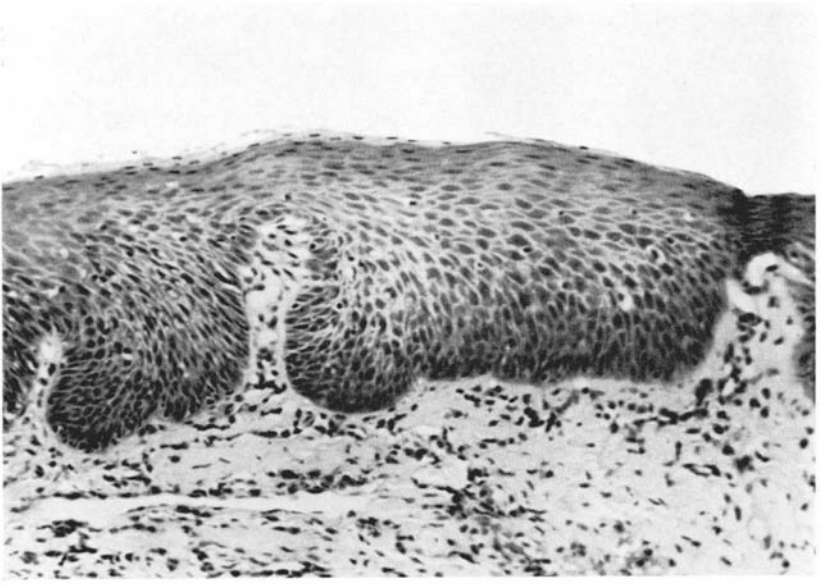


FIG. 3.

Section of acid irritated mucosa showing epithelial hyperplasia with para-keratosis and papillary downgrowth. × 200.

Summary

Nine patients presented evidence of an intractable posterior laryngitis. All were found to be suffering from gastro-oesophageal reflux and the laryngeal pathology subsided following specific reflux therapy.

These results and the actual cinefluorographic demonstration of oesophago-pharyngeal reflux provide basis to the postulation that acid irritation of the larynx, following gastro-oesophago-pharyngeal reflux, can produce a chronic posterior laryngitis.

It is suggested that a significant proportion of cases previously grouped under the general clinical heading of pachydermia are examples of acid laryngitis which appears to constitute a new clinical condition of the larynx.

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Department of Otolaryngology,
University of Melbourne,
Parkville, Vic. 3052.

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