POSTINTUBATION ULCER OF THE LARYNX

Report of a Case

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CONTACT ulceration and some sessile and pedunculated laryngeal lesions may all occur in the pathogenesis of postintubation granuloma, an uncommon complication of endotracheal intubation. Epstein and Winston (1957) reviewed sixty-five cases and thought that the condition is becoming commoner owing to the more frequent employment of endotracheal intubation in recent years. Nevertheless, published reports of cases are comparatively few, mainly because the onset of symptoms may be delayed for weeks or months and so escapes the notice of the anaesthetist and of the surgeon at his follow-up clinic.

The case reported here is of interest in that the onset of hoarseness, the common presenting symptom, was unduly delayed, and persisted with occasional remissions for some years before diagnosis and treatment.

CASE REPORT

In February 1953, Mrs. J. M., aged 44 years, was admitted to the Royal Victoria Hospital, Belfast, for removal of a large nontoxic goitre. At operation a subtotal thyroidectomy was performed under general anaesthesia with endotracheal intubation. No details of the type or size of tube used are available but anaesthesia and operation were uneventful. There was no evidence of recurrent laryngeal nerve damage postoperatively, nor did she complain of hoarseness at the follow-up clinic.

Some ten months later the patient noticed that her voice had become hoarse and this persisted with occasional remissions to date.

In March 1959 she was admitted to the Queen Elizabeth Hospital, Birmingham, after a diagnosis of bilateral carpal tunnel syndrome had been made. On March 14, 1959, division of the right carpal ligament was performed under general anaesthesia with orotracheal intubation. The duration of the operation was 35 minutes and no laryngeal abnormality was noticed, probably because the patient had not mentioned her persistent hoarseness.

In July 1959, she was readmitted for operation on her left wrist. She now complained of hoarseness, and stated that it had become worse following her previous operation in March. At operation a careful inspection of the glottis was made after induction of anaesthesia and an oval ulcer was seen to involve the posterior commissure and the vocal process of the left arytenoid cartilage. In addition there was a small sessile lesion arising from the tip of the vocal process.

The patient was subsequently referred to the ear, nose and throat department, where biopsy of the sessile lesion was undertaken. The pathological report stated: "Squamous cell papilloma. No evidence of malignancy."

DISCUSSION

The long history and histological report excluded malignancy in this case and benign tumours of the larynx are not associated with coincident ulceration. The sessile lesion arising, as it did, from the ulcer edge was probably an excessive proliferation of squamous epithelium as part of the healing process.

It seems reasonable, therefore, to incriminate endotracheal intubation as the cause of this lesion. Postintubation granuloma is more common after thyroidectomy than after any other surgical operation. This is probably due to the position of the head during anaesthesia. With the head and neck hyperextended, usually by placing a pillow or sandbag under the shoulders, an endotracheal tube in position will press maximally upon the posterior commissure and vocal processes at the glottis. Howland and Lewis (1956) cite this as an important aetiological factor and describe twenty-one cases of intubation granuloma following thyroidectomy out of a total of thirty-five. Of the sixty-five cases analyzed by Epstein and Winston (1957) eight followed thyroidectomy. Howland and Lewis (1956) also suggest that intubation granuloma is more common in females because of the higher incidence of thyroidectomy and the smaller size of the female larynx.

Most authors agree that static pressure is a more likely cause of intubation lesions than damage inflicted during attempts at intubation, particularly since relaxant agents render the pas-
sage of an endotracheal tube relatively easy and atraumatic. Prolonged pressure of a semi-rigid tube will cause ischaemia but in one case reported by Wylie (1950) the tube was in situ for only 15 minutes. Coughing and straining on a tube might also serve to produce the initial abrasion of the larynx which may then progress to ulceration and granuloma formation.

Despite the relatively few cases of this condition described in the literature, unpublished data suggest that the incidence may be as high as 4 per cent following intubation (Brit. med. J., 1957). Its recognition depends upon the development of symptoms within a reasonably short period postoperatively. Both sore throat and hoarseness are not infrequent after endotracheal intubation, 23 per cent developing one or other of these symptoms in a series of 521 patients interrogated by Wolfson (1958) and 10.9 per cent of patients had symptoms persisting for more than two days. Any postoperative hoarseness lasting for more than a week should therefore be investigated by indirect laryngoscopy and the presence of contact ulceration excluded. Conservative treatment at this stage, involving complete vocal rest, will usually effect a cure. It would seem that the majority of patients who develop symptoms only after a delayed interval will continue to escape recognition by the anaesthetist.

To prevent this complication the use of rough, too rigid or too large endotracheal tubes should be avoided. Portex or flexo-metallic tubes compress the posterior glottis less and the avoidance of excessive extension of the head and neck during thyroidectomy might also serve to reduce the incidence.

**SUMMARY**

A case of postintubation ulcer of the larynx is described. The aetiology of this condition is briefly discussed with particular reference to the role of posture of the head and neck during thyroidectomy.

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**REFERENCES**