

BLUNT TRAUMA TO THE LARYNX: A CASE REPORT*

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SUMMARY

An unusual case of laryngeal trauma is presented which, at the time of writing, has not been recorded in the literature. A dislocated corniculate cartilage was removed and the traumatized larynx treated surgically so as to give a good functional end-result.

A plea is made to all who deal with trauma that laryngeal injuries must be borne in mind in the injured patient and when they occur must be treated as an emergency in order to prevent the disastrous end-results of stenosis and stricture.

Trauma to the larynx is becoming a more common entity in otorhinolaryngological units due to the increased inci-

dence of motor-vehicle accidents. Provided an Accident Service Team is aware of laryngeal injuries, and their significance, and refers these cases to the ENT unit, much can be done to alleviate and prevent the undesirable sequelae of laryngeal stenosis and cicatrization. We present an unusual case of laryngeal trauma and indicate the method of treatment adopted.

CASE REPORT

A 19-year-old high-school student was a passenger in the 'suicide seat' of a car involved in a collision on 23 November 1970. On impact, the patient's head was driven against the windscreen, though he did not lose consciousness, and the right side of his neck hit the edge of the rear-view mirror. He suffered immediate severe dysphagia and a small haemoptysis. His voice was hoarse, but he had no respiratory difficulty. The patient was seen initially by the Accident Service and was then transferred to the ENT unit.

*Date received: 15 February 1971.

Examination showed a young adult male who, although in severe pain, was not shocked and was mentally lucid and orientated. He had sustained superficial abrasions to his left forehead, left cheek and left supra-orbital region. His neck was diffusely tender and swollen, but had no malalignment of the laryngeal architecture. He had no surgical emphysema or crepitus. On indirect laryngoscopy there was no bleeding to be seen, but the left arytenoid mound was swollen and immobile. The rima glottidis was slightly narrowed, but this did not cause any respiratory difficulty. The left hemilarynx had very restricted mobility. The remainder of the examination showed nothing of note and there was no damage to other vital neck structures. A differential diagnosis of minor laryngeal cartilage fracture or dislocated arytenoid was made.

Direct radiographic examination of the larynx showed no free air in the cervical tissues and no detectable laryngeal cartilage fractures. Tomographic studies of the larynx revealed a filling out of the left ventricle and limitation of movement of the left true and false cords (Fig. 1).

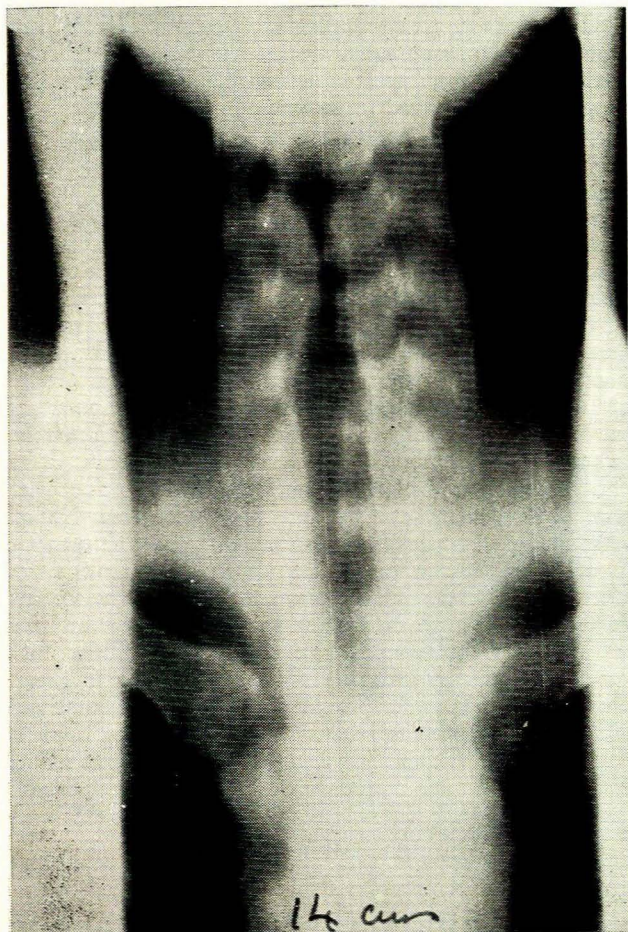


Fig. 1. Tomogram of larynx showing marked swelling of left true cord.

On the basis of these findings it was decided to examine the patient under anaesthesia. A direct laryngoscopy was done under general anaesthesia. It was noted that the glottic chink was severely narrowed and there was marked swelling of the left hemilarynx. A small piece of cartilage was seen protruding through the medial aspect of the posterior half of the left true cord.

A tracheostomy followed: a cuffed Portex tracheostomy tube was inserted into the trachea and the remainder of the anaesthetic administered via this tube. The larynx itself was then explored through a transverse thyroidectomy-type incision. The strap muscles were separated in the midline and the cartilages

examined. A haematoma was found deep to the right sternothyroid muscle with rupture of some of the fibres of this muscle. The laryngeal cartilages were found to be intact. The haematoma was evacuated and the larynx entered via a midline vertical laryngofissure incision.

On examining the interior of the larynx, the left corniculate cartilage was found to be displaced downwards and medially through a tear in the endolaryngeal mucosa. The tear extended from the left arytenoid mound anteriorly along the medial aspect of the left false cord (ventricular band) into the ipsilateral ventricle and terminated on the medial aspect of the anterior third of the left true cord. Because the corniculate cartilage was considered relatively functionless,¹ it was removed and the tear in the mucosa repaired with interrupted atraumatic 7/0-chromic material, suturing extramucosally. The cartilaginous continuity was restored with stainless-steel wire. The defect in the torn sternothyroid muscle was repaired and the wound closed in layers. Two small, soft rubber drains were brought out of the lateral edges of the wound.

The patient was fed via an indwelling nasogastric tube, and the cuff on the defunctioning tracheostomy was kept continuously inflated, except for short periods, to prevent pressure damage on the adjacent tracheal mucosa.

Prophylactic systemic antibiotics were maintained and the patient kept at strict voice rest. After 12 days he was detubed and a secondary suture of the tracheostomy was done. Indirect mirror laryngoscopy still showed some slight swelling of the left arytenoid mound, but there was full movement of both true cords and, although still hoarse, the patient was able to speak and swallow without any discomfort or pain. At this stage the patient was discharged from the ward and followed up at outpatient level.

One month after injury the patient had a well-healed neck scar, but was slightly hoarse. This was due to a small granuloma seen on indirect mirror laryngoscopy to be situated over the site of protrusion of the corniculate cartilage. The granuloma was removed at direct laryngoscopy using micro-endolaryngeal technique.

At present the patient is well. He has a slightly hoarse voice, but is responding well to speech therapy. The larynx has a normal architectural outline and both cords move equally well. He is pleased with the result.

DISCUSSION

It is generally agreed that there is a definite place for exploration of the traumatized larynx^{2,3} in order to restore mucosal continuity and prevent the complication of perichondritis and stenosis.

One point brought out by this case is that subcutaneous emphysema does not always occur with a break of endolaryngeal mucosa.⁴ The tear in the mucosa in this patient extended from true-cord to false-cord level and one would have expected air to be forced extramucosally through it. Thus absence of air in the subcutaneous tissues must not be taken as an indication that no severe trauma has been sustained. Each case must be judged on its merits and use made of all available ancillary services.

An important diagnostic tool is tomographic studies, which may help to delineate the exact site of damage.⁵ Swelling of the loose submucosal tissues occurs very easily in the larynx and so may obscure a traumatized area. In this case tomograms showed a marked swelling localized to the left false cord which was the site of maximum trauma.

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REFERENCES

1. Myerson, M. C. (1964): *The Human Larynx*, p. 18. Springfield, Ill.: Charles C. Thomas.
2. Shumrick, Donald A. (1969): *Otol. Clin. N. Amer.*, June, 403.
3. Bennet, T. (1960): *Laryngoscope (St Louis)*, 70, 306.
4. Mullen, T. F. (1924): *Ann. Surg.*, 80, 660.
5. Chadwick, D. L. (1960): *J. Laryng.*, 74, 306.