The Throat: Part III

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32.1 Injuries

Perhaps not surprising, injuries to the throat itself are relatively rare. Trauma to the larynx and penetrating neck injuries are considered in the chapter on the front of the neck. Discussion here will focus on "inside-out" type injuries, where the injuring force is applied to the lumen of the pharynx.

32.1.1 Hypopharyngeal Perforation

This is a rare complication of non-penetrating neck trauma. Because of its rarity, a high index of suspicion is required. The proposed mechanism of injury is hyperextension of the cervical spine, together with forceful airway closure. This has been suggested to occur following high velocity vehicle collisions, or other types of direct blow to the neck. Killian's dehiscence predisposes the mucosa to perforation. At the moment of impact the laryngeal cartilage is compressed against the vertebral bodies. At the same time, the upper airway closes at the level of the hyoid bone and the thoracic pressure rapidly raises. If this pressure becomes sufficiently high, perforation occurs and the compressed air is forced through the defect into the adjacent soft tissues. Other causes of perforation include iatrogenic (during instrumentation), swallowed foreign bodies, blast injury and vomiting. As a group, the commonest cause of pharyngeal perforation is secondary to instrumentation. Spontaneous rupture of the pharynx is very rare and is usually caused by vomiting, retching or heavy coughing. Interestingly,"halting a sneeze" by blocking the nostrils and mouth (something we have all probably done) has also been reported to result in rupture (Fig. 32.1).

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M. Perry (ed.), *Diseases and Injuries to the Head, Face and Neck*,
https://doi.org/10.1007/978-3-030-53099-0_32

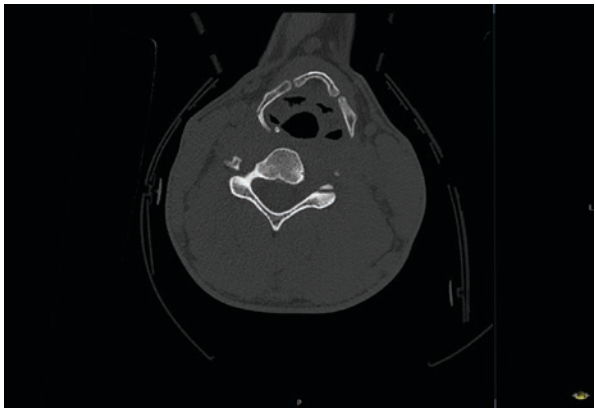

Fig. 32.1 Fracture of the larynx

Patients typically present with a sore throat and dysphagia following trauma. Other symptoms and signs include subcutaneous emphysema, chest or neck pain, odynophagia, hoarseness and haemoptysis. If delayed, swelling, and pyrexia suggest the presence of a retropharyngeal abscess. Complications include carotid artery pseudoaneurysm formation, mediastinitis, pneumothorax, empyema, septic shock and even death. If perforation is suspected an initial plain lateral cervical spine and chest Xray should be taken. The retropharyngeal space extends from base of the skull to a variable level between the T1 and T6 vertebral bodies. This normally contains fatty tissue and lymph nodes and is therefore not visible on plain Xrays. If air is present it is seen immediately in front of the prevertebral soft tissue on the lateral cervical spine view. This should raise suspicion of a pharyngeal rupture. Mediastinal, pericardial and subcutaneous emphysema may also be seen on a chest radiograph. In some patients diagnosis is difficult and a high index of suspicion is necessary. Fibreoptic examination may identify the presence, site and extent of a pharyngeal tear. Rigid endoscopy gives a clearer view but requires a general anaesthetic and is impractical if the patient is immobilised. Contrast studies and CT scans may also be required, but are reported to be only 60–75% sensitive in pharyngeal perforations. Gastrograffin swallow may demonstrate a posterior pharyngeal wall tear.

Untreated, the morbidity and mortality of perforations is high. Early diagnosis and treatment is essential in order to avoid the most frequent complications of mediastinitis, fistulas and abscesses. Over the last few decades there has been a trend towards conservative management. Pharyngeal perforations <2 cm can usually be managed by keeping the patient nil by mouth, insertion of a nasogastric tube, intravenous antibiotics and fluids and total parenteral nutrition when necessary. Perforations >2 cm often require debridement and surgical closure.

32.1.2 Penetrating Injuries

Penetrating injuries to the soft palate or pharyngeal arches are potentially very serious. They are commonly seen in children. The typical history is usually a fall while

running with a pencil or pen in the mouth, or sudden movement following placement of a sharp object in the mouth. This can penetrate the pharyngeal wall, or more commonly the soft palate. Most injuries are harmless, but in some cases air can collect in the retropharyngeal space and is visible on a lateral soft tissue X-ray of the neck. Foreign bodies may still be present and require surgical removal. If this is not diagnosed or adequately treated the patient may develop severe complications such as mediastinitis. Vascular injury to the carotid artery has also been reported, resulting in stroke of the patient. Penetrating skull base injuries have also been reported with pencils, screwdrivers, sewing needles, chopsticks, knives and scissors. With dry porous wooden objects a CT scan will show a low-attenuation structure. However, once water is absorbed from the surrounding tissues, the attenuation changes. Small foreign bodies that migrate into soft tissues are harder still to identify. In such cases, MRI should be performed. A significant injury should therefore always be suspected even if there is only minor injury to the oropharyngeal wall. Patients can present with minimal signs and symptoms, but chest pain, shortness of breath and dysphagia should be regarded with concern. Management in mild cases is usually conservative with prophylactic intravenous broad spectrum antibiotics. Large lacerations require repair.