ABC of ENT

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INJURIES AND FOREIGN BODIES

Injuries to the nose

Fractured nasal bones—Direct violence to the nose often fractures the bones of the nasal vault. The injury can usually be recognised clinically immediately afterwards by the distortion from normal shape, though this soon becomes obscured by soft tissue swelling.

Injuries to other parts of the facial skeleton must be excluded. Associated fractures of the zygomaticomaxillary complex may impair normal opening of the jaw and cause faulty dental occlusion, diplopia, and anaesthesia of the skin supplied by the infra-orbital nerve. These injuries are always associated with rapid swelling of the soft tissues of the cheek, and a sub-conjunctival haemorrhage is usually apparent. Careful palpation of the bony skeleton around the edge of the orbit may disclose a typical "step" deformity.

Management of nasal injuries

Radiographs of the nose are not usually needed to establish the diagnosis of a fracture or the need for treatment but are often performed for medicolegal reasons. Fractures of the nasal vault require surgical reduction only when there is deformity. It is often difficult to assess the deviation from normal shape until the soft tissue swelling has subsided, which may take five to seven days. Since the nasal bones will become firmly set within three weeks of the injury, the need for treatment should be assessed after a week, and, if necessary, reduction under general anaesthetic should be planned for the following week. Fractures of the zygoma and maxilla set firmly very much more quickly—within a few days. If a zygomaticomaxillary fracture is suspected the patient should therefore be referred to a faciomaxillary surgeon immediately.

Nasal injuries often cause deflection of the nasal septum with obstruction of the nose. This can rarely be corrected satisfactorily at the time of reducing the nasal fracture, and the deflection is best treated by submucous resection several months later.

Injuries to the ear

Septal haematoma may occur after injury to the nose. This causes total nasal obstruction and is easily recognised as gross swelling of both sides of the nasal septum visible from the front of the nose. Urgent treatment is needed to prevent the development of a septal abscess, which may lead to necrosis of the cartilaginous structure of the nose followed by collapse and unsightly deformity. The blood clot should be removed through an incision, under local anaesthetic, and the patient given systemic antibiotics.

CSF rhinorrhoea—Nasal injuries may be associated with cerebrospinal fluid rhinorrhoea from a fracture of the roof of the ethmoid labyrinth into the anterior cranial fossa. If this is suspected the patient should be warned not to blow his nose and to remain in a sitting position. A collection of fluid dripping from the nose should be tested biochemically; first for the presence of reducing sugars, which would suggest that the fluid is CSF. Although CSF rhinorrhoea may cease spontaneously, it is common practice to recommend neurosurgical closure of a possible defect in the dura to prevent subsequent attacks of meningitis. Loss of the sense of smell is another sequel to nasal injuries and also to head injuries in which swivelling of the brain within the skull tears the roots of the olfactory nerve. There is no treatment. Rarely fractures of the ethmoid are followed by surgical emphysema at the side of the nose. This develops when the nose is blown and the characteristic crepitus is always obvious on palpating the swelling. Although alarming the condition needs no special treatment.

Chronic damage to the nasal septum by picking the nose or by inhaling irritants such as cocaine may eventually cause perforation of the septum. Septal perforations create a feeling of discomfort and of nasal obstruction. Crusts that develop around the edges of the perforation separate from time to time, damage the septal mucosa, and so enlarge the perforation.

Blows to the pinna may cause haematomas, which, if untreated, may result in cauliflower ears. The accumulated blood should either be aspirated through a wide-bore needle or evacuated through an incision. Injuries of the tympanic membrane and middle ear have been discussed in the article on Pain in the Ear. There is rarely any urgent need to assess the state of the drum or of the hearing. Blood clot obscuring the meatus may safely be left to separate itself, and then the ear can be fully examined. The patient should be warned to keep water out of the ear in case the tympanic membrane is perforated. Damage to the drum or the ossicular chain found later can often be corrected surgically. Facial palsy developing from an injury to the ear is usually a sequel to a fracture of the petrous temporal bone. If there is any doubt about the continuity of the nerve surgical exploration may be needed. Cerebrospinal fluid otorrhoea sometimes follows fractures to the base of the skull. Leaks usually cease spontaneously after two to three weeks, in which case no further attention is necessary.

Injuries to the ear by barotrauma have been discussed in the section on Pain in the Ear and those caused by noise to the cochlea in the article on Deafness.

Foreign bodies in the nose

Most foreign bodies in the nose are inserted intentionally by children. Inert mineral foreign bodies may remain in place causing no symptoms for long periods, and their insertion may not be suspected unless a careful inventory is made of each component of every toy before tidying up at night. Organic foreign bodies such as pieces of apple, fragments of toilet paper, or bits of sponge produce an inflammatory reaction with purulent discharge. Unilateral purulent nasal discharge always indicates a foreign body in the nose. Armed with this suspicion and a pair of Tilley's forceps, the doctor should inspect the nose with a headlight. The foreign body may often be seized and removed with the forceps before the child is aware of the assault. If this is not possible it is useful to spray the nasal mucosa with 2½% cocaine. The ensuing mucosal shrinkage may allow expulsion of the foreign body by blowing the nose or ease its extraction with a sucker. Some hard objects such as beads may be rolled along the floor of the nose with a blunt hook. If any difficulty is encountered with an uncooperative child general anaesthesia will be necessary and care must be taken to protect the airway from displacement of the foreign body into the nasopharynx.

Foreign bodies in the ear

Foreign bodies in the ear are also usually inserted intentionally by children or mentally retarded adults. Unless removal is likely to be successful at the first attempt the child should be referred for expert specialist attention since unsuccessful attempts at removal may push the object further into the meatus and damage the drum and middle ear. General anaesthesia is often needed and even then extraction of hard slippery items can be difficult.

Inhaled foreign bodies

The reactions produced by foreign bodies in the tracheobronchial tree depend on their nature. Vegetable foreign bodies excite a vigorous inflammatory reaction, with purulent bronchitis and sometimes collapse of a lobe of the lung. There may also be obstructive emphysema. Mineral foreign bodies produce much less reaction and are easily overlooked. The sudden onset of stridor, cough, or dyspnoea in a previously healthy patient, should suggest the possibility of a foreign body. Unilateral wheezing is particularly suspicious. Removal requires the skilled attention of a bronchoscopist, and many foreign bodies are now extracted with a fiberoptic bronchoscope under local anaesthetic.

Swallowed foreign bodies

Small sharp foreign bodies such as fish bones often impact in the lower pole of the tonsils. They may be found by careful examination with a headlight and may often be removed using a tongue depressor in one hand and a pair of Luc's forceps in the other. A suspicion that fish bones are impacted below that level may be confirmed by the laryngologist using a laryngeal mirror for indirect laryngoscopy. He may sometimes be able to remove a bone from there under inspection with a laryngeal mirror, without general anaesthesia. Foreign bodies in the oesophagus usually impact at the upper end just below the cricopharyngeus. Occasionally they may be obstructed by a stricture. Most common are coins, bones, and lumps of meat. These are more likely to be ingested by patients with dentures and those who gulp rather than carefully chew their food.

It is not always easy to confirm or refute a patient's belief that he has a foreign body stuck in the gullet. A sensation of sharp pain on swallowing is very suspicious, especially if it radiates to the ear. Difficulty in swallowing saliva and tenderness in the neck, or tenderness on pressure over the trachea are suspicious physical signs. Fever, developing some hours after the incident, suggests the possibility of perforation of the oesophageal wall. After the first day increasing pain is a worrying feature.

Radiographs of the neck and chest often show nothing abnormal. Many foreign bodies, particularly fish bones and some dental plates, are radiolucent. Occasionally surgical emphysema is seen as an air shadow in the prevertebral tissues, indicating rupture of the oesophagus. If a sharp foreign body might be impacted the patient should be admitted to hospital. Slender evidence may justify observation for 12 hours or so to see whether the symptoms abate.

Under all other circumstances oesophagoscopy to find and remove the foreign body is necessary. Barium swallow beforehand is usually undesirable since the barium in the oesophagus will make examination more difficult and may provoke problems with the anaesthetic. Some foreign bodies, particularly open safety pins and dentures with metal hooks, present difficult dangerous problems and there is a risk of rupturing the oesophagus during extraction. After any oesophagoscopy the patient must be watched carefully for signs that might suggest a breach of the oesophageal wall—increasing pain or tenderness in the neck, fever, or radiological evidence of surgical emphysema.

The radiographs were reproduced by kind permission of Dr J M Dawson. Mr Harold Ludman, MA, FRCS, is consultant otolaryngologist, King's College Hospital, and neuro-otological surgeon, National Hospital, Queen Square, London.