

## Lecture (2)

# TONSIL DISEASES

The tonsils are paired secondary lymphatic organs situated on the side of the oropharynx between the palatoglossal (anterior tonsil pillar) and palatopharyngeal folds (posterior tonsil pillar). They are part of **Waldeyer's ring**, a ring of lymphoid tissue consisting of the adenoids, the palatine tonsils and the lingual tonsils (which are embedded in the posterior third of the tongue). The ring as a whole is thought to have some protective function as a barrier against infection in the first few years of life. The tonsil is enclosed by a fibrous capsule, outside of which is a layer of areolar tissue. This separates the capsule from the pharyngobasilar fascia covering the superior constrictor muscle that forms the tonsil bed. The main blood supply of the tonsil is from the tonsillar branch of the facial artery.

### **Aetiology of acute tonsillitis**

Although this is a common disease, its aetiology and pathogenesis are poorly understood. Acute tonsillitis is an infection which primarily affects the palatine tonsil. It is regarded as being distinctive from acute pharyngitis, which is most often a viral infection involving the lymphoid tissue on the posterior pharyngeal wall and may include the tonsil. Although the disease is seen in adults, it is most frequent in child-hood, presumably because immunity to common childhood organisms has not been fully established. There is some doubt regarding the most common causative organisms in acute tonsillitis. It has been suggested that viruses (e.g. influenza, para-influenza, adenoviruses, enteroviruses and rhinoviruses) may be responsible for tonsillitis in up to 50% of occasions. In many other cases it is felt that an initial viral tonsillitis may predispose to a superinfection by bacteria (*haemolytic streptococcus*, *Streptococcus pneumoniae*, *Haemophilus influenzae* and anaerobic organisms).

### **Clinical features**

There may be a prodromal illness with pyrexia, malaise and headache for a day before the onset of the predominant symptom, which is a sore throat. Pain may radiate to the ears or may occur in the neck due to cervical lymphadenopathy. Swallowing may be painful (odynophagia) and the patient's voice may sound muffled. There may be trismus and dribbling. Some children may have abdominal pain and occasionally vomiting. The tonsils are found to be hyperaemic on examination with pus and debris in the crypts. There will be tender cervical lymphadenopathy, particularly the jugulodigastric nodes. Glandular fever, agranulocytosis, leukaemia and diphtheria must always be borne in mind. In general practice the clinical features usually make

the diagnosis obvious without the need to resort to clinical investigations in the majority of cases. Cases that are referred to hospital are usually more severe, however, and it would be prudent to perform a Paul-Bunnell test, white cell count and a throat swab.

## **Management**

Even though viruses are implicated as the pathogenic organisms in many cases, it is likely any patient who attends a medical practitioner with the clinical features of tonsillitis will be treated with antibiotics. Penicillin V is still the drug of choice, with erythromycin reserved for those patients allergic to penicillin.

Ampicillin should never be used to treat acute tonsillitis in case the patient has infectious mononucleosis, when a generalized maculopapular rash may develop. The patient should have paracetamol for analgesia. Aspirin is contraindicated in children because of the risk of Reye's syndrome. Fluid replacement and bed rest are ancillary measures in the severe attack.

## **Complications of acute tonsillitis**

### **1. Local.**

- Severe swelling causing respiratory obstruction.
- Abscess formation: Peritonsillar (quinsy). Parapharyngeal. Retropharyngeal.
- Acute otitis media.
- Recurrent acute tonsillitis (chronic tonsillitis).

### **2. General.**

- Septicaemia.
- Meningitis.
- Acute rheumatic fever.
- Acute glomerulonephritis.

## **Differential diagnosis of unilateral tonsil enlargement**

- Asymmetry in a patient with recurrent bouts of acute tonsillitis.
- Neoplasia (squamous cell carcinoma or lymphoma).
- Apparent enlargement (peritonsillar abscess or parapharyngeal mass).

## **Differential diagnosis of ulceration of the tonsil**

A working diagnosis can usually be determined from the history and clinical examination. Investigations include a full blood count, chest radiograph, serological tests and biopsy. Possible causes include:

### **1. Infection.**

- Acute streptococcal tonsillitis.
- Diphtheria.
- Infectious mononucleosis.
- Vincent's angina.

### **2. Neoplasm.**

- Squamous cell carcinoma.
- Lymphoma.
- Salivary gland tumours (adenoid cystic carcinoma or mucoepidermoid tumour).

### **3. Blood diseases.**

- Agranulocytosis.
- Leukaemia.

### **4. Other causes.**

- Aphthous ulceration.
- Behçet's syndrome.
- Acquired immunodeficiency syndrome (AIDS).

# **TONSILLECTOMY**

## **Indications for tonsillectomy**

- Recurrent episodes of acute tonsillitis. (Surgeons differ in the definition of this. As a rule of thumb these episodes should last 5 days or more, five per year, for at least 2 years.)
- Previous episodes of peritonsillar abscess (quinsy).
- Suspected neoplasm (unilateral enlargement or ulceration).
- Part of another procedure (UVPP, access to glossopharyngeal nerve or styloid process).
- Gross enlargement causing airway obstruction (sleep apnoea syndrome).

## Contraindications

These contraindications are not absolute, but surgery should be delayed until the particular problem is resolved. In some cases the decision to proceed with surgery should be reconsidered in the context of the potential problems.

- Recent episode of tonsillitis or upper respiratory tract infection (within 2 weeks).
- Bleeding disorder.
- Oral contraceptives.
- Cleft palate.
- During certain epidemics (e.g. polio).

## Complications of tonsillectomy

### *1. Peroperative*

- Anaesthetic reaction.
- Haemorrhage.
- Damage to teeth.
- Trauma to the posterior pharyngeal wall (careless insertion of the tongue blade).
- Dislocation of the temporomandibular joint by over-opening the mouth gag.

### *2. Immediate.*

- Reactionary haemorrhage.
- Anaesthetic complications.

### *3. Early.*

- Secondary haemorrhage.
- Haematoma and oedema of the uvula.
- Infection (may lead to secondary haemorrhage).
- Earache (referred pain or acute otitis media).
- Pulmonary complications (pneumonia and lung abscess are rare).
- Subacute bacterial endocarditis (if the patient has a cardiac defect).

### *4. Late.*

- Scarring of the soft palate (limiting mobility and possibly affecting voice).
- Tonsillar remnants (which may be the site of recurrent acute infection).

The most significant complication is **haemorrhage**, which occurs in approximately 2% of cases. Most of the deaths associated with tonsillectomy are directly or indirectly associated with this complication.

It is essential to ensure adequate haemostasis at the end of the tonsillectomy procedure as blood in the airway at this time may cause laryngeal spasm or can occlude the airway. The postnasal space should always be checked for a blood clot (the so-called 'coroner's clot'). Patients are

nursed in the reverse Trendelenburg position (head down) so that blood trickles out of the mouth rather than being swallowed or aspirated.

**Reactionary (primary) haemorrhage** by definition occurs up to 24 hours post-operatively, but the vast majority occur within the first 8 hours. It is one of the reasons why some surgeons are opposed to day case tonsillectomy. Continuing haemorrhage will result in hypovolaemia, and if not corrected circulatory failure (shock) will be the consequence. The signs of reactionary haemorrhage are obvious: bleeding from the mouth, a gurgling sound in the throat on respiration, repeated swallowing, vomiting blood, a rising pulse rate and eventually a falling blood pressure and tachypnoea. Blood must be cross-matched and an intravenous infusion started. The tonsillar fossae should be inspected to identify a bleeding point. Any clot should be removed if possible and a gauze swab soaked in 1:1000 adrenaline applied to the fossa. If the bleeding continues, or there is any doubt, the patient should be prepared for a second anaesthetic and the bleeding point ligated under general anaesthesia. The second anaesthetic is hazardous and should only be administered by an experienced anaesthetist.

**Secondary haemorrhage** occurs some 5–10 days post tonsillectomy and is due to an infection of the fossae. If significant, the patient should be admitted to hospital for observation. A full blood count and cross-match should be performed. The infection and haemorrhage will usually settle after treatment with antibiotics (i.v. penicillin and metronidazole or erythromycin). It is unusual for such a patient to have to go back to theatre and when this is necessary the tonsillar fossae are found to be sloughy and friable and it is difficult to locate and ligate any specific bleeding point. It may be necessary to suture the faucial pillars together, or over Kaltostat or a gauze swab which is removed the next day.

### **Follow-up and aftercare**

No specific follow-up is required after a routine, uncomplicated tonsillectomy. Patients who have suffered a significant haemorrhage should be reviewed within 2 weeks to check their haemoglobin. Patients who have a tonsillectomy for reasons other than recurrent acute tonsillitis should be followed up appropriately to their problem.