Tonsillitis

Tonsillitis is inflammation due to infection of the tonsils. Pharyngitis is inflammation of the oropharynx but not the tonsils. The tonsils tend to atrophy in early adulthood. In laryngitis there are few visible signs of infection but with soreness lower down the throat often associated with a hoarse voice.

Epidemiology

- It is a very common condition, most frequent in children aged 5-10 years and young adults between 15 and 25 years.
- A GP with a list of 2,000 can expect to see around 120 cases of sore throat a year with considerable seasonal variation - see the separate article on Sore Throat.\(^1\)
- The Scottish Intercollegiate Guidelines Network (SIGN) suggests that only 1 patient in 18 with a sore throat will consult.\(^2\)

Risk factors

These include immune deficiency and a family history of tonsillitis or atopy.

Presentation

Symptoms

- Pain in the throat is sometimes severe and may last more than 48 hours, along with pain on swallowing.
- Pain may be referred to the ears.
- Small children may complain of abdominal pain.
- Headache.
- Loss of voice or changes in the voice.

Signs

- The throat is reddened, the tonsils are swollen and may be coated or have white flecks of pus on them.
- Possibly a high temperature.
- Swollen regional lymph glands.
- Classical streptococcal tonsillitis has an acute onset, headache, abdominal pain and dysphagia.
- Examination shows intense erythema of tonsils and pharynx, yellow exudate and tender, enlarged anterior cervical glands.

Tonsillitis tends to be misdiagnosed, leading to inappropriate treatment with antibiotics.

Differential diagnosis

- If the sore throat is due to a viral infection the symptoms are usually milder and often related to the common cold.
- If due to infection with Coxsackievirus, small blisters develop on the tonsils and the roof of the mouth. The blisters erupt in a few days and are followed by a scab, which may be very painful.
- Infectious mononucleosis (glandular fever) affects teenagers most often. They may be quite unwell with very large and purulent tonsils and a long-lasting lethargy. An enlarged spleen is classically described and infrequently found.
- Herpes simplex virus (HSV) infection, especially in adolescents and young adults.
In streptococcal infection the tonsils often swell and become coated and the throat is sore. The patient has a temperature, foul-smelling breath and may feel quite ill. The differences are variable and it is impossible to tell on inspection if the infection is viral or bacterial.

- Check that the patient is not taking a drug that may cause agranulocytosis.
- **Epiglottitis** requires immediate admission.
- Unusual bacteria may be involved including gonococcal infection.
- Unilateral enlargement of the tonsils, especially in the elderly, may indicate malignancy.
- It is not uncommon for **HIV infection** to present with ENT symptoms, especially in children. The most common presentations are cervical lymphadenopathy, oro-oesophageal candidiasis and otitis media.

Investigations

- It is recommended that throat swabs and rapid antigen tests should not be performed routinely.
- There is some validity to the argument that swabs do not differentiate between infection and carriage.\(^3\)
- SIGN states that rapid antigen tests detect the presence of Group A streptococcal antigen on a throat swab within a few minutes but they have poor sensitivity and make little impact on prescribing decisions.\(^2\)
- An adolescent or young adult with a nasty sore throat may well have glandular fever. A Paul-Bunnell or equivalent blood test may be indicated.

Diagnostic criteria

Culture of Group A beta-haemolytic streptococcus (GABS) is inefficient as a diagnostic criterion, as it is too slow and it fails to differentiate between infection and carriage. There are four **Centor Criteria** that may be used:\(^2\)

- History of fever
- Tonsillar exudates
- No cough
- Tender anterior cervical lymphadenopathy

Patients with one or none of these criteria are unlikely to have GABS. Consideration of antibiotic prescription should be limited to patients with three or four criteria.\(^1\)

Management\(^2, 3\)

Non-drug

- Upper respiratory tract infections are quite infectious and so those with such infections should avoid social contact and stay away from work, especially if feeling unwell.
- Explanation with reassurance that this is a self-limiting condition is sufficient management advice for some patients.
- Gargles are anecdotally helpful but there is no evidence base to support their use.
- 'Watchful waiting' is appropriate for children with mild recurrent sore throats.

Drugs

- Antipyretic analgesics such as paracetamol and ibuprofen are of value.
- For most patients, antibiotics have little effect on the duration of the condition or the severity of symptoms. The National Institute for Health and Care Excellence (NICE) suggests that indications for antibiotics include:\(^1\)
  - Features of marked systemic upset secondary to the acute sore throat.
  - Unilateral peritonsillitis.
  - A history of rheumatic fever.
  - An increased risk from acute infection (such as a child with diabetes mellitus or immunodeficiency).
  - Acute tonsillitis with three or more Centor criteria present (see 'Diagnostic criteria', above).

- In patients with infectious mononucleosis (glandular fever) requiring hospital admission, corticosteroids may have a role when pain and swelling threaten the airway or where there is very severe dysphagia.\(^2\)
Use of antibiotics
Reviews of the literature concur that antibiotics confer no benefit in the majority of patients with sore throat, that the 'numbers needed to treat' warrant a conservative approach in developed countries and that they should be reserved for specific clinical scenarios.

Antibiotics confer relative benefits in the treatment of sore throat. However, the absolute benefits are modest. Protecting sore throat sufferers against suppurative and non-suppurative complications in high-income countries requires treating many patients with antibiotics for one patient to benefit. This number needed to treat to benefit may be lower in low-income countries. Antibiotics shorten the duration of symptoms by about 16 hours overall.[4]

Choice of antibiotic
The antibiotic of choice is a 10-day course of phenoxymethylpenicillin. Amoxicillin should be avoided if there is a possibility of glandular fever. If penicillin-allergic, a 10-day course of clarithromycin is recommended.[5]

Referral criteria[3]
Confirm the diagnosis of recurrent tonsillitis by history and examination and assess whether the frequency of episodes is increasing or decreasing.

In most children referral for tonsillectomy should only be considered if all of the following criteria are met:

- The child has five or more episodes of acute sore throat per year, documented by the parent or clinician.
- Symptoms have been occurring for at least a year.
- The episodes of sore throat have been severe enough to disrupt the child's normal behaviour or day-to-day functioning.

Refer if the child has guttate psoriasis which is exacerbated by recurrent tonsillitis.

Refer if the child has a history of sleep apnoea, daytime drowsiness, and failure to thrive.

Refer adults if they have had five or more episodes per year of sore throat due to tonsillitis. The episodes should have been disabling and have prevented normal functioning.

Surgical
Tonsillectomy remains a very common ENT operation. Two thirds of tonsillectomies in the UK are performed on children.[6] Tonsils are important lymph tissue that protects the upper airways. Recurrent infection, however, does alter this situation and chronic tonsillitis can turn tonsillar tissue into a nidus for anaerobic bacteria. Tonsillectomy may help to change the oropharyngeal bacterial profile to a more normal pattern.[7]

Surgery is not a treatment for the acute condition but aimed at reducing the incidence of recurrent infections. Tonsillectomy is indicated for:[8]

- Recurrent attacks of tonsillitis (typically streptococcal).
- Enlarged tonsils causing obstruction of the airway, which may be the cause of obstructive sleep apnoea.
- Possible malignant disease in the tonsils.

SIGN has produced its own criteria for tonsillectomy for children and adults, viz:[2]

- Sore throats are due to acute tonsillitis.
- The episodes of sore throat are disabling and prevent normal functioning.
- Seven or more well-documented, clinically significant, adequately treated sore throats in the preceding year; or
- Five or more such episodes in each of the preceding two years; or
- Three or more such episodes in each of the preceding three years.
A six-month period of watchful waiting is appropriate in patients for whom the indications for surgery are not clear-cut.

**Surgical methods used**[9]

- **Cold steel** - this is the traditional method which involves removal of the tonsils by blunt dissection followed by haemostasis using ligatures.
- **Diathermy** - this uses radiofrequency energy applied directly to the tissue. It can be bipolar (the current passes between the two tips of the forceps) or monopolar (the current passes between the forceps' skin and a plate attached to the patient's skin). The heat generated may be used to dissect the tonsils away from the pharyngeal wall and also to promote haemostasis. Diathermy is sometimes used as an adjunct to cold steel surgery to achieve haemostasis.
- **Coblation** - this involves passing a radiofrequency bipolar electric current through normal saline. The resulting plasma field of sodium ions can be used to dissect tissue by disrupting intercellular bonds and causing tissue vaporisation. This method generates less heat than diathermy.

Tonsillectomy is effective in reducing the number of episodes of sore throat and the number of days with sore throats in children. The gain is more marked in those most severely affected. However, the effect is modest. Although removing the tonsils will prevent tonsillitis, the impact on sore throats due to pharyngitis is much less predictable.[10]

**Complications**

- **Peritonsillar abscess.**
- **Acute otitis media.**
- Lancefield's GABS can cause **rheumatic fever, Sydenham's chorea, glomerulonephritis and scarlet fever.**
- **Streptococcal infection may cause a flare-up of guttate psoriasis.**
- **Enlarged and chronically infected tonsils interfere with children's sleep.**[11]
- **Complications of tonsillectomy include otitis media and haemorrhage which can be very difficult, especially where there is an undiagnosed bleeding tendency such as haemophilia. Altered taste sensation has been reported.**[12]
- **Patients who have had tonsillectomy are more susceptible to bulbar poliomyelitis.**

**Prognosis**

The average duration of acute tonsillitis is one week.[1]

One study found that if tonsillectomy does have to be performed in children it produces a positive and durable increase in 'health-related quality of life' measures.[13]

**Prevention**

Smoking cessation for parents: the children of parents who smoke have an increased prevalence of upper respiratory tract infections, wheeze, asthma and lower respiratory tract infections.[14]

**Further reading & references**

2. Management of sore throat and indications for tonsillectomy; Scottish Intercollegiate Guidelines Network - SIGN (April 2010)
3. Sore throat - acute; NICE CKS, October 2012 (UK access only)
5. British National Formulary
9. Electrosurgery (diathermy and coblation) for tonsillectomy - guidance; IPG150 NICE 2005

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