

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.

How common is tonsillitis? (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 [Sore Throat](#) article.^[1]
- Most patients with sore throat do not seek medical help.^[2]

Risk factors

These include: age between 5 and 15 years, immune deficiency, a family history of tonsillitis or atopy and contact with infected people in an enclosed space.^[2]

Tonsillitis 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.
- Some patients, particularly 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.

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.
- [Epiglottitis](#) requires immediate admission.
- Unusual bacteria may be involved, including gonococcal infection.
- Unilateral enlargement of the tonsils 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.
- Rapid streptococcal antigen tests have the benefit of immediate results but sensitivity is lower than with culture. Their use has been recommended in adults and children aged over 3 years with a high probability of Group A beta-haemolytic streptococcus as assessed by at least three Centor criteria (see below).^[2] They are not universally available in primary care in the UK.
- 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.

Urgent blood tests, including FBC, should be arranged for any patient that has any suspicion of [immunodeficiency](#). Check that the patient is not taking a drug that may cause [agranulocytosis](#).

Diagnostic criteria

Culture of Group A beta-haemolytic streptococcus (GABS) is inefficient as a diagnostic criterion, as it is too slow and may not differentiate between infection and carriage. There are four *Centor Criteria* that may be used:^[2]

- History of fever over 38°C.
- Tonsillar exudate.
- 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 Centor criteria.^[1]

The FeverPAIN criteria is an alternative score used for prediction of streptococcal infection. Each criterion scores one point.

- Fever over 38°C in previous 24 hours.
- Purulence (pharyngeal/tonsillar exudate).

- **Attend rapidly** (within three days of onset of symptoms).
- **Inflamed tonsils.**
- **No cough or coryza.**

For children with a FeverPAIN score of 3 or more, prescribe antibiotics. For adults with a FeverPAIN score of 4 or 5, consider antibiotic prescription. For adults with a FeverPAIN score of 2 or 3, no severe symptoms and not in a vulnerable group; consider a delayed antibiotic prescription.^[1]

Tonsillitis treatment and management^[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).
 - Higher probability of GABS as assessed by Centor or FeverPAIN criteria (see 'Diagnostic criteria', above).
- NICE recommends that a back-up antibiotic prescription may be considered as a treatment option with the following advice:^[1]
 - An antibiotic not being needed immediately.
 - Using the back-up prescription if symptoms do not start to improve within 3-5 days or if they worsen rapidly or significantly at any time.
 - Seeking medical help if symptoms worsen rapidly or significantly or the person becomes systemically very unwell.

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 5-10 day course of phenoxymethylpenicillin. Alternative first choice for penicillin allergy or intolerance is a five-day course of clarithromycin. First-choice antibiotic for penicillin allergy in pregnancy is a five-day course of erythromycin.^[1] Amoxicillin should be avoided if there is a possibility of glandular fever.

Referral criteria^[3]

Arrange hospital admission, with urgency determined by clinical judgement, for anyone with:

- Breathing difficulty.
- Clinical dehydration.
- Peritonsillar abscess or cellulitis, parapharyngeal abscess, retropharyngeal abscess, or Lemierre's syndrome (as there is a risk of airway compromise or rupture of the abscess).
- Signs of marked systemic illness or sepsis.
- A suspected rare cause such as Kawasaki disease, diphtheria, or yersinial pharyngitis.

Use clinical judgement to determine whether hospital admission is necessary in vulnerable people (eg, infants, very old people, and those who are immunosuppressed or immunocompromised), as pharyngitis/tonsillitis may run a more severe course.

NICE has recommended that for people with severe recurrent tonsillitis (a frequency of more than seven episodes per year for one year, five per year for two years, or three per year for three years, and for whom there is no other explanation for the recurrent symptoms), referral to an ear, nose, and throat specialist is advised as there may be a benefit from tonsillectomy in this group.

Surgical

Tonsillectomy remains a very common ENT operation. Two thirds of tonsillectomies in the UK are performed on children.^[5] Tonsils are important lymph tissue which 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.^[6]

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A six-month period of watchful waiting is appropriate in patients for whom the indications for surgery are not clear-cut.

Surgical methods used^[7]

- 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.^[8]

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.^[9]

- 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.^[10]
- Patients who have had tonsillectomy are more susceptible to bulbar poliomyelitis.

Prognosis

The average duration of acute tonsillitis is one week.^[2]

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.^[11]

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.^[12]

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