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# Management of Sore Throat and Indications for Tonsillectomy

## INTRODUCTION

The management of sore throat is a significant burden on health service resources. In most cases, the condition is relatively minor and self-limiting.

However, a significant number of patients experience unacceptable morbidity, inconvenience, and loss of education or earnings due to recurrent sore throat. The use of antibiotics in patients with recurrent sore throat has been controversial. A number of patients are referred for consideration of tonsillectomy in secondary care. The indications for tonsillectomy have long been a matter of debate. Tonsillectomy has a small but significant complication rate and an outcome that is not clearly defined.

The aim of this module is to suggest a rational approach to the management of acute sore throat in general practice and to provide reasonable criteria for referral for tonsillectomy.

## CASES

### Case 1: Jane S., age 21

#### Part 1

Jane has been with your practice since she was a child and seldom consults. She has been away from home at University but is now back home temporarily, preparing for final exams. She appears at an emergency appointment with a sore throat which has lasted for 2 days.

On examination she is well. You see very little

abnormal except for a bit of redness at the back of her throat and tonsils appear normal. There is no tonsillar exudate.

***What other information would help with the assessment of this patient?***

Jane tells you that she has had occasional sore throats over the years, and she states that on each occasion she got better with antibiotics. She has no significant PMH. She smokes about 5 per day but does not have GI reflux. She has not tried any analgesia on this occasion apart from a throat spray. She is worried that her symptoms will interfere with her exam preparation. She has tender cervical nodes but no history nor sign of fever, but she has a bit of a tickly cough. Chest is clear on examination. You note she had asthma as a child but no symptoms nor treatment for this since the age of 8.

***What treatment would you recommend?***

## **Part 2**

Jane returns a few days later with worsening pain. She has been in email communication with some friends who have similar symptoms. She asks whether a throat swab would help – one of her friends at the Halls of Residence was recently investigated with a swab - and another friend has been given antibiotics prophylactically by the University Health Service. Examination again reveals the same findings as before.

***How would you manage this situation?***

## **Case 2: Douglas M., 8 years old**

### **Part 1**

Douglas is brought in by his worried mother. He has had several sore throats and episodes of tonsillitis in the last 2 years and now has another one which has been present for 4 days. He is quite feverish and a bit lethargic, though is able to tolerate fluids and cooperate with examination. There is no history of cough. He has a temperature of 38.5, and enlarged tender cervical glands. The throat has enlarged tonsils though

there is no exudate on this occasion.

***What would your management options include?***

He settles with simple analgesia and a course of Penicillin V for a week, but returns 2 weeks later with a recurrence of the same clinical picture. Mum asks whether he can be considered for tonsillectomy.

***How do you advise Mrs M ?***

***What would you do if he presented with stridor on this occasion?***

## **Part 2**

Douglas eventually has a tonsillectomy some months later. His mother calls you 5 days postoperatively saying that his pain is much worse. You arrange to see him in the surgery. He looks well and has no temperature. His throat has no obvious bleeding points. He is able to take some cold food and drinks. He has been taking paracetamol and ibuprofen as analgesia.

***What is your advice now?***

## **INFORMATION SECTION**

### **Incidence of sore throat in general practice**

1. Most patients with sore throat never attend their GP. A UK study of 516 women aged 20-44 years found that only one in 18 episodes of sore throat led to a GP consultation.
2. The overall incidence of sore throat in all age groups has been estimated variously at 500 cases per GP per year according to 1978 figures, or 100 per 1,000 people per year. Different definitions make comparisons between figures difficult. The age distribution and management of sore throat which is reported to a GP vary widely across Europe.
3. The unit cost of a GP surgery consultation in the UK in 2008-09 was £35.7 In Scotland in 2005-2006,

consultations for any form of sore throat or tonsillitis numbered 313,150, a rate of 58.3 per 1,000 population. The cost to NHS Scotland of GP consultations for sore throat therefore exceeds £10.9 million per annum, before any treatment or investigation.

4. In 2006-2007 in Scotland, 3,605 tonsillectomies were performed for bacterial tonsillitis. NHS Scotland spends approximately £3 million on tonsillectomies per year.

### **Reasons for presentation in general practice**

5. A 1994 Dutch study of 1,441 children attending general practice estimated 223 new episodes of tonsillitis per 1,000 subjects per year during the first five years of life, with no difference between sexes or social classes. The observed distribution was not random: more children than expected had no episodes, and significantly more children than expected had high numbers of episodes (>11 episodes). Factor analysis showed that sore throat, otitis media and common cold were interrelated, but the authors point out that 'illness behaviour' may partly influence the tendency to seek care for less serious diseases.

6. In common with many familiar conditions encountered in general practice, presentation with sore throat may be the introductory topic to a wider agenda for the patient. The complex interplay between the patient, the doctor, psychosocial factors and the acute illness is relevant to the reason for the consultation and may have a fundamental influence upon decisions made. Recent evidence suggests that antibiotic prescribing for sore throat in general practice enhances patient belief in antibiotics and increases intention to consult for future episodes

7. Practitioners should be aware of underlying psychosocial influences in patients presenting with sore throat (recommendation grade C). A patient information leaflet may be of value in the management of acute sore throat and may assist in managing future episodes at home without general practitioner involvement (see example at Appx 2).

8. Sore throat with stridor or respiratory difficulty is an

absolute indication for hospital admission (recommendation grade D). Hospital admission will be required for those few patients with sore throat who have stridor, progressive difficulty with swallowing, increasing pain, or severe systemic symptoms. When such patients present acutely to an ENT service they may have peritonsillar cellulitis or abscess (quinsy) and may require parenteral antibiotics. The complication of parapharyngeal abscess is not common. In young adults, glandular fever (infectious mononucleosis) is a common reason for hospital admission as these patients are often unable to swallow. The occasional patient with severe uncomplicated tonsillitis may require admission because of dysphagia and dehydration.

### **Diagnosis**

9. There is no evidence that bacterial sore throats are more severe than viral ones or that the duration of the illness is significantly different in either case. The precise diagnosis may be of academic interest, or possibly clinically relevant in more severe cases. Between 50 to 80% of infective sore throat is of viral cause, including influenza and primary herpes simplex. An additional 1-10% of cases are caused by Epstein Barr virus (glandular fever).

10. The most common bacterial organism identified is group A beta-haemolytic streptococcus (GABHS), which causes 5-36% of bacterial infections. Other organisms to be considered are Chlamydia pneumonia, Mycoplasma pneumonia, Haemophilus influenza, Candida, Neisseria meningitides and Neisseria gonorrhoeae.

11. Diagnosis can be attempted on clinical findings or by laboratory or near patient testing. The most commonly used tests in worldwide terms are culture of throat swabs and rapid antigen testing (RAT).

12. Precise clinical diagnosis is difficult in practice. Distinguishing between a viral and bacterial aetiology is one of the main considerations. The most common bacterial pathogen is GABHS, for which antibiotic treatment may be considered.

13. Several studies have attempted to differentiate between GABHS and viral causes on the basis of symptoms and clinical signs. No single symptom or sign is useful when used alone, but combinations of factors have been used in several clinical prediction rules. A systematic review of these studies has shown that the Centor scoring system (Box 1) may help categorise the individual patient's risk level for GABHS infection.

### **Box 1. The Centor Score**

The Centor score gives one point each for:

- tonsillar exudate
- tender anterior cervical lymph nodes
- history of fever
- absence of cough.

The likelihood of GABHS infection increases with increasing score, and is between 25-86% with a score of 4 and 2-23% with a score of 1, depending upon age, local prevalence and seasonal variation. Streptococcal infection is most likely in the 5–15 year age group and gets progressively less likely in younger or older patients. The score is not validated for use in children under three years.

14. The use of a clinical prediction rule such as the Centor score gives a clinician a rational basis on which to estimate the probability that a sore throat is due to GABHS, but cannot be relied upon for a precise diagnosis. It may assist the decision on whether to prescribe an antibiotic (recommendation grade C).

15. In addition to clinical examination, assessment of a patient with sore throat should take account of other medical conditions and medication, which may suggest an increased susceptibility to infection and lower the threshold for treatment.

16. Occasionally, sore throat may be a presenting symptom of acute epiglottitis or other serious upper airway disease. If breathing difficulty is present, urgent

referral to hospital is mandatory and attempts to examine the throat should be avoided (recommended best practice).

17. In young adults, glandular fever (infectious mononucleosis) is a common reason for hospital admission as these patients are often unable to swallow.

### **Investigation**

18. A positive throat culture for GABHS makes the diagnosis of streptococcal sore throat likely but a negative culture does not rule out the diagnosis. There are cases where streptococcus is isolated from sore throats but there is no serological evidence of infection. There is also a high asymptomatic carrier rate for GABHS of up to 40%. The flora of bacteria recovered from the surface of the tonsil correlates poorly with that of those deep in the tonsillar crypts which are most likely to be causing the infection.

19. Symptoms also correlate poorly with results of throat swab culture. Throat swabs are neither sensitive nor specific for serologically confirmed infection, considerably increase costs, may medicalise illness, and alter few management decisions. Throat swabs should not be carried out routinely in primary care management of sore throat (recommendation grade C).

20. Throat swabs may be used to establish aetiology of recurrent severe episodes in adults when considering referral for tonsillectomy.

21. Rapid antigen testing is commonly used in North America to identify GABHS. These tests are taken from a throat swab and results are available within 10 minutes. Tests available in 2003 showed sensitivities between 59 and 95% and specificities over 90%. It is likely that the polymerase chain reaction (PCR) based tests now available are equivalent or superior to culture.

22. Neither RAT nor throat swab culture can differentiate between the streptococcal carrier state and invasive infection. A study in Canada showed

that RAT use reduced antibiotic prescribing. The rate of antibiotic prescribing for sore throat in the control group was 58.2%. A Swiss study showed lower antibiotic use after RAT when compared to giving antibiotics for all patients with Centor score 3 or 4. The findings cannot be generalised to Scotland because the rate of antibiotic prescribing for sore throat in Scotland is unknown. Further studies are required to evaluate the cost-effectiveness and clinical benefit of RAT in Scotland, and SIGN found insufficient evidence to make a recommendation.

### **General management of sore throat**

Diagnosis of a sore throat does not mean that an antibiotic has to be administered. Adequate analgesia will usually be all that is required.

#### **SIMPLE ANALGESICS**

23. The majority of patients with sore throat probably never attend a general practitioner but instead obtain symptomatic relief with ibuprofen or paracetamol. The recognised complications of aspirin therapy make this agent less suitable for general use, and its use as an analgesic is contraindicated in patients under 16 years.

24. There is minimal literature regarding the use of stronger analgesics for sore throat. Combination preparations (such as paracetamol with codeine) are known to be associated with nausea, disorientation and severe constipation, but may be useful for some patients. In hospital and in general practice, weak opioids such as dihydrocodeine, sometimes in combination with other agents, are occasionally used but the risks of abuse limit their value in general practice.

#### **PAIN RELIEF IN ADULTS**

25. In adults, diclofenac and ibuprofen are superior to paracetamol and aspirin in reducing throat pain as early as one hour post dose. Ibuprofen is available over the counter and from various retail sources. It is only minimally more expensive than paracetamol. A large blinded RCT involving 8,633 European adult patients

showed that ibuprofen is as well tolerated as paracetamol and there are fewer serious gastrointestinal adverse effects with ibuprofen than paracetamol, irrespective of age, in short courses for acute pain.

26. Ibuprofen should not be routinely given to adults with or at risk of dehydration due to concerns regarding renal toxicity although this serious adverse effect is rare. No trials compared ibuprofen and diclofenac against each other for effectiveness.

27. Ibuprofen 400 mg three times daily is recommended for relief of fever, headache and throat pain in adults with sore throat (recommendation grade A). A systematic review has shown that ibuprofen does not exacerbate asthma morbidity in a paediatric population. Caution is advised using ibuprofen in asthmatic adults as similar evidence in adults could not be found.

28. In adults with sore throat who are intolerant to ibuprofen, paracetamol 1 g four times daily when required is recommended for symptom relief (recommendation grade A). Ibuprofen and paracetamol are often used together. Evidence concerning the safety and efficacy of this combination in adults is lacking.

#### **PAIN RELIEF IN CHILDREN**

29. In children with sore throat, an adequate dose of paracetamol should be used as first line treatment for pain relief (recommended best practice). There is insufficient evidence to choose between ibuprofen, paracetamol, or their combination for pain relief in children. NICE guideline CG47 (Feverish illness in children) notes that the potential drug interactions of this combination are unknown and that polypharmacy increases the risk of drug administration errors.

30. A systematic review and meta-analysis of ibuprofen and paracetamol use in febrile children and occurrence of asthma-related symptoms showed that there is a low risk for asthma-related morbidity associated with ibuprofen use in children.

31. Recent case reports have highlighted the concern about renal toxicity in dehydrated children given ibuprofen. Ibuprofen should not be given routinely to children with or at risk of dehydration (recommendation grade D). Diclofenac should not be used routinely for the relief of sore throat in children as so far there is insufficient evidence to establish safety.

32. Ibuprofen can be used as a safe and effective alternative to paracetamol in children, and in febrile children (recommendation grade A).

#### ADJUNCTIVE THERAPY

33. Throat sprays, lozenges and gargles are widely used and available over the counter. There is no good quality evidence on the effectiveness of these products. No studies provided evidence of lasting benefit. No trials compared these products with conventional analgesics. The community pharmacist is a useful source of advice on the management of uncomplicated sore throat in the community.

34. Trials on the effectiveness of a single dose of oral dexamethasone have produced conflicting results. Larger, well-designed trials are required. SIGN did not find enough evidence to support a recommendation on the use of dexamethasone. In patients with acute glandular fever (infectious mononucleosis) requiring hospitalisation, corticosteroids may have a role when pain and swelling threaten the airway or where there is very severe dysphagia.

35. A double blind placebo controlled RCT of Echinacea Purpurea therapy for throat pain in common cold did not reduce the symptoms or duration of common cold symptoms and is not recommended (recommendation grade B)

#### ANTIBIOTICS

36. In the UK, the significance of the presence of bacterial pathogens in cases of sore throat remains in doubt. It is therefore illogical to treat all sore throats with antibiotics and there is a favourable outcome in the majority of cases even when antibiotics are

withheld. Even if the sore throat persists, a throat swab to identify GABHS may not be helpful, as the poor specificity and sensitivity of throat swabs limit their usefulness.

37. Nevertheless, randomised controlled trials of antibiotic therapy in patients with acute sore throat in whom GABHS has or has not been isolated (whether or not causative) have been reported. The limited information available is insufficient to support a recommendation on the routine use of antibiotics in acute sore throat. The following four statements are “recommended best practice”:

- In view of increases in healthcare-acquired infections and antibiotic resistance in the community, unnecessary prescribing of antibiotics for minor self limiting illness should be avoided.
- In severe cases, where the practitioner is concerned about the clinical condition of the patient, antibiotics should not be withheld. (Penicillin V 500 mg four times daily for 10 days is the dosage used in the majority of studies. A macrolide should be considered as an alternative first line treatment, keeping in mind local guidance.)
- In certain unusual circumstances, such as epidemics, more widespread prescription of antibiotics may be recommended and public health guidance should be followed.
- Ampicillin-based antibiotics, including co-amoxiclav, should not be used for sore throat because these antibiotics may cause a rash when used in the presence of glandular fever.

38. When infective sore throat recurs in patients who have received antibiotic treatment, the reasons may include inappropriate antibiotic therapy, inadequate dose or duration of previous therapy, patient non-compliance/non-concordance, re-infection, and local breakdown of penicillin by beta-lactamase-producing commensals. Benzylpenicillin (only available parenterally), cefuroxime, and clindamycin (the latter has risks which need to be taken into consideration) have been shown to be superior to penicillin V in the management of children with this

problem, and may reduce the frequency of episodes.

39. There is no evidence to support a recommendation on the use of antibiotics in recurrent non-streptococcal sore throat. In cases of recurrent sore throat associated with GABHS (not necessarily causal) the limited evidence of benefit available suggests that a 10-day course of antibiotic may reduce the number and frequency of attacks. However, diagnosis of GABHS is not reliable, so antibiotic prophylaxis for recurrent sore throat is not recommended, particularly taking account of the risks and potential adverse effects of the increased use of antibiotics in this condition (recommended best practice).

40. It has been contended that the primary clinical rationale for treating streptococcal pharyngitis with antibiotics is the prevention of rheumatic fever, glomerulonephritis and suppurative complications such as quinsy. The incidence of rheumatic fever in the UK is extremely low and there is no support in the literature for the routine treatment of sore throat with penicillin to prevent the development of rheumatic fever. Similar considerations apply to the prevention of glomerulonephritis (recommendation grade C).

41. There is no evidence that the routine administration of antibiotics to individuals with sore throats will reduce the occurrence of suppurative complications such as quinsy (recommended best practice)

42. Although antibiotic therapy has been shown to alleviate symptoms even in sore throats not caused by bacteria, the superiority of antibiotics over simple analgesics is marginal in reducing duration or severity. Even in proven GABHS infection, the symptomatic improvement following penicillin, although superior to that following placebo in some studies, has been unimpressive in others, especially when compared to simple analgesics. In summary, antibiotics should not be used to secure symptomatic relief in sore throat (recommendation grade A)

43. The evidence in favour of the use of antibiotics to prevent cross infection in sore throat comes mainly from army barracks and other closed institutions and there is no recent evidence from this country. There is

no evidence that trying to eradicate GABHS with routine antibiotic therapy for sore throat will produce any measurable health gain in the general public, and some danger in encouraging the emergence of antibiotic resistant strains of other organisms, although GABHS remains sensitive to penicillin despite its widespread use. Antibiotics may prevent cross infection with GABHS in closed institutions (such as barracks, boarding schools) but should not be used routinely to prevent cross infection in the general community (recommendation grade C).

### **Tonsillectomy**

Tonsillectomy is a common procedure in Scotland.

44. a) Between 2002 and 2005 a prospective audit concerning the safety of all adenotonsillar surgery in Scotland with the use of disposable instruments was undertaken. In the three years of the audit the total number of tonsillectomies and adenotonsillectomies undertaken in Scotland was 14,530.

b) In the period of the audit, a total of 619 patients were readmitted to an ENT unit within 28 days of adenotonsillar surgery, a readmission rate of 4.3%. Of the readmissions, 72.6% were due to haemorrhage and 12.7% were due to pain.

45. The current widely accepted criteria for surgery are of the order of seven episodes of tonsillitis in the preceding year, five episodes in each of the preceding two years, or three episodes in each of the preceding three years, and these have been arrived at arbitrarily. They take no account of whether the condition is worsening or improving and make no distinction between children and adults, in whom the disease may behave differently. The small amount of information about adult sore throat and the effect of tonsillectomy is not scientifically robust by current standards but suggests that surgery is beneficial.

### **CHILDREN**

46. No study demonstrates clear clinical benefit of tonsillectomy in children. An RCT of 300 children

with mild to moderate sore throat in the Netherlands found that adenotonsillectomy was not cost effective in mild to moderate sore throat and did not result in significant clinical benefit (Level of Evidence 1+).

47. In 328 children with moderate sore throat, an RCT of tonsillectomy or adenotonsillectomy versus watchful waiting found a statistically significant reduction in the incidence of mild sore throats in the surgical group, but the clinical significance of this reduction has to be balanced against the risk of complication of the procedure. (Level of Evidence 1++)

48. Although rare complications have been reported, the risk of these occurring should not be a barrier to decision making in the group for whom tonsillectomy is felt to be beneficial. Watchful waiting is more appropriate for children with mild sore throats than tonsillectomy (recommendation grade A)

49. Evidence on exactly which children with sore throats benefit from tonsillectomy is not available, but from current evidence it would seem that the benefit of tonsillectomy increases with the severity and frequency of sore throats prior to tonsillectomy. Adenotonsillectomy remains a procedure that is indicated in children with obstructive sleep apnoea and in patients with rare conditions such as periodic fever.

## ADULTS

50. A Cochrane review found limited evidence for benefit of tonsillectomy in adults (Level of Evidence 1++). Nevertheless, tonsillectomy is recommended for recurrent severe sore throat in adults (recommendation grade A).

## REFERRAL CRITERIA FOR TONSILLECTOMY FOR THE TREATMENT OF RECURRENT TONSILLITIS

51. It seems reasonable to assume that recurrent acute attacks of tonsillitis can be prevented by tonsillectomy, but tonsillectomy will not prevent recurrent sore throats

due to other reasons. Hence, before considering tonsillectomy, the diagnosis of recurrent tonsillitis should be confirmed by history and clinical examination; and, if possible, differentiated from generalised pharyngitis.

52. The natural history of tonsillitis is for the episodes to get less frequent with time, but epidemiological data are lacking in all age groups to allow a prediction of this to be made in individual patients.

53. Tonsillectomy requires a short admission to hospital and a general anaesthetic, is painful, and is occasionally complicated by bleeding. Return to usual activities takes on average two weeks, with a corresponding loss of time from education or work.

54. Box 2 summarises the referral criteria. Doctors should note whether the frequency of episodes is increasing or decreasing.

55. Note that, in considering whether a patient meets these criteria, the GP (or ENT surgeon) may have difficulty in documenting the frequency of episodes because patients do not always consult when they have an episode. There may also be uncertainty about whether the sore throats are due to acute tonsillitis.

56. There are situations in which tonsillectomy may be appropriate outwith these criteria. The ultimate judgement must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan.

57. In some cases a period of watchful waiting of at least six months will be advised by the ENT team, during which the patient or parent can more objectively record the number, duration and severity of the episodes, may be suggested. This would allow a more balanced judgement to be made as to the likely benefit or otherwise of tonsillectomy. This could either be reported to the GP after six months, who would then re-refer if appropriate, or be reported by the patient at a pre-arranged review



hospital appointment (recommended best practice).

**Box 2.** The following are recommended as reasonable indications for consideration of tonsillectomy for recurrent acute sore throat in children and adults (recommendation grade D)

- 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 3 preceding years

## POSTOPERATIVE PROBLEMS

Patients frequently experience significant postoperative morbidity. This can include throat and ear pain, fever, poor oral intake, halitosis, and decreased activity levels following a tonsillectomy.

58. Pain is associated with a delay in return to normal activity and diet for patients. This problem could have an impact on the recovery of tonsil beds and lead to secondary bleed.

59. Following tonsillectomy, patients or carers may be reluctant to use analgesics for more than a few days because of fears of tolerance and side effects.

60. After tonsillectomy, in most cases pain will reduce in the first few days, but is likely to increase at day 4 or 5 before finally tailing off from day 6 onwards. The reason for the increase in pain is not known, but it is not thought to be due to infection (Level of Evidence 1+). GPs should be made aware of the potential for

pain to increase for up to six days following tonsillectomy and be able to reassure patients, who should also be warned to expect this (recommendation grade D).

### THE BOTTOM LINE

Antibiotics should not be prescribed for symptomatic relief of sore throat. Analgesia is the mainstay of treatment. However some patients will require treatment - and occasionally emergency assessment and admission are required.

Tonsillectomy has complications and there are doubts about its benefits. However it should not be with-held from those patients who would benefit from the procedure.

## CASE COMMENTARIES

### Case 1: Jane S., a 21-year-old student

#### Part 1

*What other information would help with the assessment of this patient?*

Be aware that psychosocial factors are important here (Info points 6 and 7). Calculating a Centor Score may help with the decision whether to prescribe antibiotics (Info Points 12, 13, 14 and Box 1). Issuing a patient info sheet might help with self-management of future episodes (Info Point 7, Appx 2).

*What treatment would you recommend?*

As her Centor score is low, she would not be likely to benefit from antibiotics and requires some education on the value of these medicines (Info Points 36, 37, 41, 42). She also needs to be advised on the usefulness of simple analgesics such as Ibuprofen or Paracetamol (Info Points 23-26). Her asthma is unlikely to be an issue but she should be

advised to use Ibuprofen with caution (Info Point 27).

## **Part 2**

### ***How would you manage this situation?***

Increased pain level alone is not evidence that she has a bacterial infection (Info Point 9) and she should be reassessed as before with the Centor score. Throat swabs are unlikely to be helpful and the only investigation that might be useful, along with appropriate history and examination, might be a Monospot (Info Points 9, 18, 19, 20), though that would not alter management in the short term.

Glandular fever is a possibility (info point 9) though these patients normally have quite striking tonsillar enlargement and can be unable to swallow – indeed they may require hospital admission and possibly pre-admission corticosteroids (info points 17, 34). For the less ill glandular fever cases, the only important issue apart from symptomatic treatment, is to remember to avoid amoxicillin (info point 37).

Prophylactic antibiotics are unlikely to be of assistance though their use is sometimes justified in some institutions and epidemics (Info Points 37, 43). Probably she simply requires more reassurance and analgesia, though her concerns may go beyond her sore throat to the exam pressure she is under, and each consultation has to take factors like this into account (Info points 6 and 7). There is no evidence of benefit from OTC lozenges, steroids, nor complementary therapies (Info Points 33 – 35). She could be advised to use paracetamol plus ibuprofen for her increased pain, though evidence is lacking in adults for the usefulness of this combination (info point 28).

## **Case 2: Douglas M., 8 years old**

### **Part 1**

#### ***What would your management options include?***

All cases require adequate analgesia with Paracetamol - or, as an alternative, Ibuprofen (info points 29, 30, 31, 32). Ensure that lethargy is secondary to fever and not

dehydration before recommending ibuprofen (info point 31). His Centor Score is 3 and you may be tempted to prescribe antibiotics if you are concerned about his clinical condition (info point 37). If he is very ill, some patients require admission (info point 8 gives common reasons for admission)

### ***How do you advise Mrs M ?***

Insufficient courses of antibiotics can be a cause of failure of therapy (Info Point 38) – a recommended course would be 10 days long (BNF, March 2009). A 10-day course could be given on this occasion or an alternative treatment issued such as cefuroxime (info Point 38).

The indications for tonsillectomy are in Box 2. and depend upon episodes of sore throat being confirmed as tonsillitis (info point 51) though this may be difficult (info point 55). The pros and cons of surgery in children need to be carefully discussed (Info points 45-49) and even if you refer for ENT opinion, these criteria may or may not be taken into consideration and a period of watchful waiting might be introduced (info points 56 and 57). A patient info leaflet on tonsillectomy might be of assistance (Appx 3).

### ***What would you do if he presented with stridor on this occasion?***

Stridor is an absolute indication for admission to hospital in a feverish child with severe sore throat (info point 8). The throat should not be examined if he has respiratory difficulty (info point 16).

## **Part 2**

### ***What is your advice now?***

First ensure that he has been taking adequate doses as many patients do not do so (info point 59). Pain increases for unknown reasons on day 4 or 5, and then reduces - so if the patient is well and no other complication arises, he can be reassured that things will settle and reviewed in the community (info point 60). However readmission is not uncommon

(info point 44 b).

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Disclaimer:

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Enquires on the Information Points should be directed to [www.sign.ac.uk](http://www.sign.ac.uk)

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## APPX 1: KEY TO EVIDENCE STATEMENTS AND GRADES OF RECOMMENDATIONS

### LEVELS OF EVIDENCE

1 <sup>++</sup>	High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1 <sup>+</sup>	Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1 <sup>-</sup>	Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2 <sup>++</sup>	High quality systematic reviews of case control or cohort studies High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal
2 <sup>+</sup>	Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal
2 <sup>-</sup>	Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal
3	Non-analytic studies, eg case reports, case series
4	Expert opinion

### GRADES OF RECOMMENDATION

*Note: The grade of recommendation relates to the strength of the supporting evidence on which the evidence is based. It does not reflect the clinical importance of the recommendation.*

<b>A</b>	At least one meta-analysis, systematic review, or RCT rated as 1 <sup>++</sup> , and directly applicable to the target population; <i>or</i> A body of evidence consisting principally of studies rated as 1 <sup>+</sup> , directly applicable to the target population, and demonstrating overall consistency of results
<b>B</b>	A body of evidence including studies rated as 2 <sup>++</sup> , directly applicable to the target population, and demonstrating overall consistency of results; <i>or</i> Extrapolated evidence from studies rated as 1 <sup>++</sup> or 1 <sup>+</sup>
<b>C</b>	A body of evidence including studies rated as 2 <sup>+</sup> , directly applicable to the target population and demonstrating overall consistency of results; <i>or</i> Extrapolated evidence from studies rated as 2 <sup>++</sup>
<b>D</b>	Evidence level 3 or 4; <i>or</i> Extrapolated evidence from studies rated as 2 <sup>+</sup>

In addition to the above, a number of “recommended best practice” points, based on the clinical experience of the Guideline Development Group, are described in SIGN, and these have been noted in the information section.

# Appx 2: Sore throat information leaflet

A sore throat usually goes after a few days. Simple treatments that you can buy can ease symptoms until the sore throat goes. Usually, you would only need to see a doctor if symptoms are severe, unusual, or if they do not ease within 3-4 days.

## What is a sore throat?

**Sore throat (pharyngitis)** is very common. It is usually caused by an infection in the throat. Soreness in the throat may be the only symptom. In addition, you may also have a hoarse voice, mild cough, fever, headache, feel sick, feel tired, and the glands in your neck may swell. It may be painful to swallow. The soreness typically gets worse over 2-3 days and then usually gradually goes within a week. In about 1 in 10 cases the soreness lasts longer than a week. You may also develop a sore throat if you have a cold or flu-like illness.

**Tonsillitis** is an infection of the tonsils at the back of the mouth. Symptoms are similar to a sore throat, but may be more severe. In particular, fever and generally feeling unwell tend to be worse. You may be able to see white spots on the enlarged red tonsils

## What is the treatment for sore throat and tonsillitis?

- **Not treating** is an option as many throat infections are mild and soon get better.
- **Have plenty to drink.** It is tempting not to drink very much if it is painful to swallow. You may become mildly dehydrated if you don't drink much, particularly if you also have a fever. Mild dehydration can make headaches and tiredness much worse.
- **Paracetamol or ibuprofen** ease pain, headache, and fever. To keep symptoms to a minimum it is best to take a dose at regular intervals as recommended on the packet of medication rather than 'now and then'. For example, take paracetamol four times a day until symptoms ease.
- **Aspirin gargles** may ease the soreness. (There is little research evidence that confirms this. However, it is a popular treatment and may be worth a try.) Dissolve some soluble aspirin in water and gargle for 3-4 minutes. You can do this 3-4 times a day. Spit out the aspirin after gargling. (Note: you should not give aspirin to children under 16.)
- **Other gargles, lozenges, and sprays** that you can buy at pharmacies may help to soothe a sore throat. However, they do not shorten the illness.

## Do I need an antibiotic?

Usually not. Most throat and tonsil infections are caused by viruses, although some are caused by bacteria. Without tests, it is usually not possible to tell if it is a viral or bacterial infection. Antibiotics kill bacteria, but do not kill viruses. However, even if bacteria are the cause, an antibiotic does not make much difference in most cases. Your immune system usually clears these infections within a few days whether caused by a virus or a bacterium. Also, antibiotics can sometimes cause side-effects such as diarrhoea, feeling sick, rash, and stomach upsets.

Therefore, most doctors do not prescribe antibiotics for most cases of sore throat or tonsillitis.

An antibiotic may be advised if the infection is severe, if it is not easing after a few days, or if your immune system is not working properly (for example, if you have had your spleen removed, if you are having chemotherapy, etc).

## Things to look out for

In nearly all cases, a sore throat or tonsillitis clears away without leaving any problems. However, occasionally a typical sore throat may progress to cause complications. Also, a sore throat is sometimes due to an unusual, but more serious, illness. Therefore, for the sake of completeness, the sort of things to look out for include the following:

### Possible complications

Sometimes the infection can spread from the throat or tonsils to other nearby tissues. For example, to cause an ear infection, sinus infection or chest infection.

### Infectious mononucleosis (glandular fever)

Infectious mononucleosis is caused by a virus (the Epstein-Barr virus). It tends to cause a severe bout of tonsillitis in addition to other symptoms. See separate leaflet called '*Glandular Fever*' for more details.

### Quinsy - also known as peritonsillar abscess

Quinsy is an uncommon condition where an abscess (a collection of pus) develops next to a tonsil due to a bacterial infection. It usually develops just on one side. It may follow a tonsillitis or develop without having had tonsillitis. The tonsil on the affected side may be swollen or look normal, but is pushed towards the midline by the abscess next to the tonsil. Quinsy is very painful and can make you feel very unwell. It is treated with antibiotics, but also the pus often needs to be drained with a small operation.

### Other uncommon causes of throat or tonsil infections

Other infections can sometimes cause a sore throat or tonsillitis. For example, a thrush infection of the throat, or certain sexually transmitted infections.

### Non-infective causes of sore throat

An allergy such as hay fever can cause a sore throat. A sore throat can be the first symptom of throat cancer (but this is rare and mainly affects older smokers).

### Medication such as carbimazole

Carbimazole is a drug that is used to treat an overactive thyroid gland. If you are taking carbimazole and develop a sore throat then you should have an urgent blood test. This is because a sore throat may be the first warning of a serious side-effect to carbimazole (agranulocytosis - which is a low level of white blood cells). This serious side-effect needs urgent treatment. Agranulocytosis can occur as a side-effect of various other drugs.

*The 'take home' message is ... see a doctor if symptoms of a sore throat are severe, unusual, or if they do not ease within 3-4 days. In particular, seek urgent medical attention if you develop any difficulty breathing, drooling, a muffled voice, severe pain, difficulty swallowing or become very unwell.*

Feel Free to Copy this leaflet for Patients and Colleagues

## References

- [Sore throat - acute](#), Clinical Knowledge Summaries (April 2008)
- [Respiratory tract infections](#), NICE Clinical Guideline (July 2008); *Prescribing of antibiotics for self-limiting respiratory tract infections in adults and children in primary care*
- [Management of Sore Throat and Indications for Tonsillectomy](#), SIGN (1999)

Comprehensive patient resources are available at [www.patient.co.uk](http://www.patient.co.uk)

**Disclaimer:** This article is for information only and should not be used for the diagnosis or treatment of medical conditions. For details see our [conditions](#).

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## **Appx 3 – Patient information leaflet – tonsillectomy**

### **What are tonsils?**

Tonsils are small glands in the throat, one on each side. They are there to fight germs when you are a young child. After the age of about three years, the tonsils become less important in fighting germs and usually shrink. Your body can still fight germs without them. We only take them out if they are doing more harm than good.

### **Why take them out?**

We will only take tonsils out if they cause recurrent sore throats despite treatment with antibiotics. The other main reason for removing tonsils is if they are large and block the airway. Sometimes small children have tonsils so big that they block their breathing at night.

A quinsy is an abscess that develops alongside the tonsil, as a result of tonsil infection, and is most unpleasant. People who have had a quinsy therefore often choose to have a tonsillectomy to prevent having another.

Tonsils are also removed if we suspect there is a tumour. A rapid increase in the size of a tonsil or ulceration or bleeding occurs if a tumour of the tonsil develops. Tumours of the tonsil are rare.

### **Do I have to have my tonsils out?**

It is not always necessary to remove the tonsils. You may want to just wait and see if the tonsil problem gets better by itself. The doctor should explain to you why he or she feels that surgery is the best treatment.

You may change your mind about the operation at any time, and signing a consent form does not mean that you have to have the operation. If you would like to have a second opinion about the treatment, you can ask your specialist. He or she will not mind arranging this for you. You may wish to ask your own GP to arrange a second opinion with another specialist.

### **Before the operation**

Arrange for two weeks off work or school. Let us know if you have a chest infection or tonsillitis before the admission date because it may be better to postpone the operation. It is very important to tell us if you have any unusual bleeding or bruising problems, or if this type of problem might run in the family.

### **How is the operation done?**

You will be asleep under general anaesthesia. We take the tonsils out through the mouth, and then stop the bleeding. This takes about 30 minutes. A child who has had a tonsillectomy will then be taken to a recovery area to be watched carefully as he or she wakes up from the anaesthetic.

### **How long will I be in hospital?**

In most hospitals, surgeons prefer tonsillectomy patients to stay in hospital for one night. In some hospitals tonsil surgery is done as a day case, if your home is close to the hospital. Either way, we will only let you go home when you are eating and drinking and feel well enough.

## Possible complications

Tonsil surgery is very safe, but every operation has a small risk. The most serious problem is bleeding. This may need a second operation to stop it. About two out of every 100 children who have their tonsils out will need to be taken back into hospital because of bleeding, and one of these will need a second operation. As many as five adults out of every 100 who have their tonsils out will need to be taken back into hospital because of bleeding, but only one adult out of every 100 will need a second operation. During the operation, there is a very small chance that we may chip or knock out a tooth, especially if it is loose, capped or crowned. Please let us know if you have any teeth like this.

## After the operation

Some children feel sick after the operation, and may need to be given medicine for this, but it usually settles quickly.

Your throat will sore for approximately ten days. It is important to take painkillers regularly, half an hour before meals for at least the first week. Do not take aspirin because it may make you bleed. If you are giving painkillers to your child following tonsillectomy do not give more than it says on the label. Aspirin is not safe for children and should never be given to children under 16, unless prescribed by a doctor.

Eat normal food - it will help your throat to heal. It will help the pain too. Drink plenty and stick to bland non spicy food. Chewing gum may also help the pain.

You may have sore ears. This is normal - it happens because your throat and ears have the same nerves. It does not mean that you have an ear infection.

Your throat will look white - this is normal while your throat heals. You may also see small threads in your throat – they are used to help stop the bleeding during the operation, and they will fall out by themselves.

Some people get a throat infection after surgery, usually if they have not been eating properly. If this happens you may notice a fever and a bad smell from your throat. Call your GP or the hospital for advice if this happens.

Adults and children will need 10 to 14 days off work or school. Make sure you rest at home away from crowds and smoky places. Keep away from people with coughs and colds. You may feel tired for the first few days.

## Bleeding can be serious

If you notice any bleeding from your throat, you must see a doctor. Call your GP, call the ward, or go to your nearest hospital casualty department.

**Feel free to copy this sheet for your patients and colleagues**

Adapted from: [http://www.entuk.org/patient\\_info/throat/tonsil\\_html](http://www.entuk.org/patient_info/throat/tonsil_html), accessed July 09