british association for paediatric otorhinolaryngology

British Association for Paediatric Otorhinolaryngology

Day Case Paediatric Adenotonsillectomy Consensus Guideline

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ENTUK

BRITISH ASSOCIATION OF DAY SURGERY

Association of Paediatric Anaesthetists of Great Britain and Ireland

GIRFT GETTING IT RIGHT FIRST TIME

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Foreword

All of those involved in treating children wish to provide a safe, efficient service with excellent outcomes alongside the best possible patient and carer experience. Traditionally adenotonsillectomy surgery in children has been viewed as requiring at least an overnight stay post operatively. This was to monitor for bleeding and airway issues and to ensure adequate pain relief was achieved with a return to normal eating and drinking. However, numerous studies have been published showing that same day discharge is safe for the majority and is actually preferred by families. In the current climate there are also cost implications both to the NHS and to patients linked to a prolonged hospital stay. Day case surgery should allow more children to be treated in a timely fashion to help address the backlog for elective procedures which has arisen post COVID.

In 2023 the British Association for Paediatric Otorhinolaryngology (BAPO) was asked to form a working group to produce consensus guidelines for those units undertaking adenotonsillectomy in children. This was to support them in achieving the targets for day case surgery as recommended by the NHS England Getting in Right First Time Programme (GIRFT).

On behalf of BAPO I would like to offer my sincerest thanks to all those clinicians who gave so much of their time to contribute to this valuable document. There was representation from both adult and paediatric ENT surgeons alongside anaesthetic and nursing colleagues. I particularly wish to mention Mat Daniel from Nottingham and Steven Powell from Newcastle, their extensive knowledge of the literature on this subject and strong scientific backgrounds allowed a thorough assessment of the existing evidence on the topic to be made. Simon Courtman from Plymouth was heavily involved from an anaesthetic perspective and Andrew Hoey provided valuable input reflecting his time working with NHS England. Finally, the document would not be available today without Ravi Thevasagayam who, as BAPO secretary, worked tirelessly to get the document over the line.

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Executive Summary 2023

Historically, children undergoing tonsillectomy (and adenotonsillectomy) have been admitted overnight for observation post-operatively. This was primarily due to the risk of bleeding, pain management and monitoring return to oral intake. In the case of children with obstructed sleep disturbance, they were mainly admitted as a result of the perceived risks of respiratory complications and in particular a supplemental oxygen requirement following surgery. Despite concerns about the move to increasing numbers performed as day-case procedures in the 90s [1] the safety of day-case tonsillectomy has been demonstrated in multiple studies for the majority of children. In November 2019, the *Getting It Right First Time* (GIRFT) [2] report identified variations in day-case rates for tonsillectomy across the country with the national average rate being just above 40%. The highest quartile performing providers were achieving rates above 80%. Non-specialist Trusts had an average day-case rate of 62%, whereas specialist Trusts had an average rate of 50%. It appears that same-day discharge is not independently associated with an increased readmission rate at non- specialist Trusts and a modest increase in specialist Trusts. Multiple single centre series suggest that selected patients with obstructive sleep apnoea (OSA) can be done safely as day surgery without an increased risk of complications [3,4].

A UK survey suggested that half the ENT surgeons routinely admitted children for having tonsillectomy for sleep disordered breathing [5].

The move to increasing day case rates seems beneficial to both the child and family and also the wider healthcare system. It is desirable from the point of view of satisfaction of the child and carers where inpatient stays create increased childcare burdens for families. There are also significant costs associated with an overnight stay in hospital. This has a significant impact on resource allocation. More importantly, with pressures on inpatient beds, day-case surgery will facilitate more timely surgery and free resources to support the elective recovery of children's surgery following the pandemic.

This has led to a move towards a "default day-case" approach to tonsillectomy surgery. This approach means that all patients are treated as potential day of surgery discharge unless there are certain specific contra-indications or perioperative factors that might necessitate inpatient observation or treatment. GIRFT have proposed a target day-case tonsillectomy rate of 80%. It has been suggested that a 70% rate might be appropriate in specialist centres, bearing in mind the increased likelihood of co-morbidity in this patient group [6]. It has to be emphasised that these suggested rates may not be possible for all patient populations, but provides some indication of what might be achievable.

There are a range of tonsillectomy techniques in use, with dissection by cold steel, bipolar or Coblation as the most established techniques. Intracapsular tonsillectomy is being used more commonly, especially in paediatric centres. Intracapsular techniques have been demonstrated in large cohort data to have lower in hospital complications and lower readmissions within 28 days compared with the data for dissection tonsillectomy. Local expertise and outcomes will vary and the most appropriate method for day case tonsillectomy is best determined by the individual units. Regular audit of outcomes for complications of tonsillectomy is encouraged [7,8].

The British Association for Paediatric Otorhinolaryngology (BAPO) were tasked with forming a working group to provide guidance about how to support centres achieving these day-case targets safely.

This guidance will apply to both tonsillectomy and adenotonsillectomy. This executive summary highlights the key parts of the guidance.

Key Points

- Day-case tonsillectomy is safe and effective for the majority of children with minimal co-morbidities, even those with obstructed sleep disordered breathing. It is desirable with regards the utilisation of resources, cost and the preference of most families. It will also facilitate more timely access to surgical treatment.
- An effective pre-assessment service for children helps to identify children who fulfil day case criteria in order to optimise day case rates and minimise unexpected admissions and day of surgery cancellations. Access to printed/online information should be provided for parents and children with regards to their care before, during and after surgery.
- Each department should have a clear day-case standard operating policy clarifying local implementation of all aspects of these recommendations from pre-operative preparation through to discharge.
- If a sleep study has been undertaken, sleep apnoea severity would not on its own determine suitability for day case surgery.
- Children with significant co-morbidities may not be suitable due the potential for early post-operative complications, especially respiratory distress (see Appendix 1). Children at extremes of weight, especially above the 98th centile for weight/BMI, should be considered for observation overnight.
- Children should live or can stay overnight within 45 mins of a unit with ENT out of hours cover with the ability to return to theatre if required. In regions with significant travel distances between hospitals and homes, specific care pathways, approved by the regional ODN and ICB, can be put in place to optimise the safe delivery of day-case procedures in an appropriate cohort of children. Assessing access to transport by the parent should form part of the preassessment prior to the day of surgery.
- Where safeguarding concerns are identified preoperatively or there are concerns raised as to parental ability to deliver appropriate post-operative care in the home environment, it may not be appropriate to proceed with a day case pathway for the child.
- For all units, in the absence of comorbidities and care giver factors, most children over 3 years and over and 14 kg and over should be potentially suitable for day of surgery discharge.
- Level 2 and 3 centres may consider day surgery for children 2 years and older (and greater than or equal to 12kg) if there are no other relative contraindications.
- The most frequent risks immediately post operatively are “primary” haemorrhage, poor oral intake, a persistent oxygen requirement and unanticipated respiratory distress.
- Children should be observed for a minimum of 3 hours with oxygen saturation monitoring. If there are concerns regarding bleeding, poorly controlled pain, unsatisfactory oral intake or oxygen requirement, this should be increased to 4 to 6 hours.
- If conditions for discharge are not met after extended observation, the child should be admitted to an in-patient bed. Where there are no paediatric in-patient beds at the local hospital, there should be an agreement in place for transfer to an appropriate nearby hospital and shared care provided by consultant paediatricians at this hospital.
- Children should be discharged home with sufficient weight-based analgesia to encourage maintenance of oral intake. Clear instructions should be provided to the parents at discharge.
- There should be clear instructions for parents regarding who to contact and where to present if a postoperative complication occurs after discharge. This should be provided in the printed/online instructions at discharge.

Glossary

Levels of Care Definitions

- **Level 1 –** Facilities that provide basic paediatric surgical care, typically as a part of a mixed adult/paediatric surgery department, and often rely on higher-level facilities for complex cases and additional support services. This includes 5 day units and ENT units with no paediatric inpatient beds or paediatric services.

- **Level 2 –** District general hospitals with inpatient paediatric surgical capabilities for less complex conditions, typically without 24/7 availability of all support services but still having a range of specialists with provision of a paediatric High Dependency Unit (HDU)

- **Level 3 –** Tertiary centres equipped to manage highly complex paediatric surgical conditions, with sub-specialist surgeons and a full range of support services available 24/7 with provision of a Paediatric Intensive Care Unit (PICU)

Introduction

There has been a long history of children undergoing tonsillectomy and adenotonsillectomy (AT) being admitted overnight for observation. This was primarily due to the risk of bleeding, managing pain and monitoring return to oral intake. In the case of obstructive sleep apnoea (OSA) and obstructive sleep disordered breathing (oSDB), this was mainly due to concerns about the risks of respiratory complications, in particular an oxygen requirement. Despite concerns about the move to increasing day case procedures in the nineties [1], the safety of day case tonsillectomy has been demonstrated in multiple studies for the majority of children. In November 2019 the *Getting it Right First Time* (GIRFT) report [2], identified variations in day case rates for tonsillectomy across the country, with the National average rate being just above 40%. The highest quartile performing providers achieving rates above 80%. Non-specialist Trusts had a day case average of 62%, whereas specialist Trusts had an average of 50%.

It appears that same day discharge is not independently associated with increased readmission rate at non-specialist Trusts and a modest increase in specialist Trusts [3]. Multiple single centre series suggest that selected OSA patients can be done safely as day surgery without increase in complications [4,5].

A UK survey suggested that half the ENT surgeons routinely admitted children for having tonsillectomy for sleep disordered breathing [6].

The move to increasing day case rates seems desirable from the point of view of patient satisfaction with inpatient stays creating increased childcare burdens for families. There are costs for Trusts associated with overnight stays, which has a significant impact on resource allocation. More importantly, with pressures on inpatient beds, day case surgery will result in more timely surgery and offers opportunities to address the waiting list backlog created by the COVID-19 pandemic.

These factors have led to a move towards a “default day case” approach to tonsillectomy surgery. This approach means that all patients are treated as a potential day of surgery discharge unless there are certain specific contraindications or peri- and post-operative factors that might necessitate inpatient observation/treatment.

GIRFT have suggested a target of 80% day case rate for tonsillectomy, although current top decile rates (Q2 23/24) are over 90%. A 70% rate might be appropriate in specialist centres, bearing in mind the increased likelihood of co-morbidities in this patient group [3]. It must be emphasised that these may not reflect certain populations but provides some indication of what could be possible.

There are a range of tonsillectomy techniques in use, with “cold steel” dissection, bipolar or extracapsular Coblation® as the most established techniques. However, intracapsular tonsillectomy is used more commonly, especially in paediatric centres. This technique is most commonly done using radiofrequency ablation although microdebrider techniques are also described. Intracapsular techniques have been demonstrated, in large cohort data, to have lower in-hospital complications and lower readmissions within 28 days compared with the data for dissection tonsillectomy. Local expertise and outcomes will vary and the most appropriate method for day case tonsillectomy is best determined by the individual units. Regular audit of outcomes for complications of tonsillectomy is encouraged [7,8].

The British Association for Paediatric Otorhinolaryngology (BAPO) was tasked with forming a working group to provide guidance about how to achieve this target safely.

This guidance will apply to both tonsillectomy and adenotonsillectomy.

Day Case Selection Criteria

Age

Many units use 3 years of age as a lower cut off for day case tonsillectomy [1,2]. Other units have moved to a lower age limit of 2 years of age [3,4] and demonstrated safety in this age group. However, there is evidence that children under the age of 3 have an increased rate of post-operative complications [5,6]. The working group took the view that level 2 and 3 units could proceed to operate on 2-year children weighing over 12kg safely as a day surgery procedure. It was considered that these units might be better placed to deal with unplanned admissions or escalations in care requirements. Considering the potential increased complications, it is recommended that level 1 units operate on children over the age of 3 years. Respiratory complications are significantly higher in the under 2 age group [7], and as such the working group recommends that under 2-year-old children should be admitted for overnight observation. The reduced morbidity, especially with regard to bleeding, makes the intracapsular technique attractive particularly in younger children [8].

Weight

In terms of weight, 14kg was deemed a minimum safe weight for day case tonsillectomy. AT on children below 14kg has been associated with a higher rate of post-operative respiratory complications [9]. For lower weight children, the low circulating blood volume might result in more risk should a child have a post-tonsillectomy bleed following discharge.

Distance From Emergent Care

One of the reasons for setting arbitrary distances to emergent care is to enable children prompt access to care in the event of complications, and in particular post-tonsillectomy bleeding. It was determined that this should ideally be within 45 minutes of a hospital with the ability to return to theatre by ENT staff. The patient might wish to stay with friends or in a hotel if they live outside this area rather than in an inpatient bed. Some Trusts fund local hotel accommodation if a patient lives too far away as it is more economical and protects inpatient beds. It is acknowledged that in some regions distances may be greater and, in that situation, local ODN policy should be agreed and adhered to. Discussing transport options in the event of a need to return to care should take place in during preadmission assessment.

Co-morbidities

It is widely accepted that children with significant co-morbidities or healthcare needs are likely to be unsuitable for day surgery (see Appendix 1). Children with Down syndrome and those with craniofacial abnormalities are not suitable especially in view of a high rate of post-operative oxygen requirements [10]. This might also include children with neuromuscular disorders, significant clotting or bleeding orders as well as behavioural factors that might predict poor oral intake or difficulty managing pain [11].

Obesity

Obesity is a major and increasingly common cause of post-operative oxygen requirement and has been shown to be much more common in obese versus non-obese children [12]. Obese children are more likely to have intra-operative oxygen desaturations; multiple attempts at laryngoscopy; difficult mask ventilation and upper airway obstruction post-induction and in the Post-Anaesthetic Care Unit (PACU) [13]. Obesity is an independent predictor of increased complications and post-operative length of stay. The other issue is that AT is less likely to completely correct the underlying obstruction. The working group felt that patients above the 98th centile should be admitted for observation in view of the likelihood of post-operative complications. That said, overweight children below the 98th centile with other co-morbidities should be considered for inpatient admission on a case-by-case basis. It is vital that the decision is taken in consultation between the anaesthetist and surgeon, ideally in the context of a preadmission clinic setting.

The Role of Sleep Studies

The benefits of performing AT surgery on day case basis need to be balanced against the risks. Numerous factors influence decision making, with the possibility of post-operative respiratory complications being one. Previous UK guidance suggested the use of overnight pulse oximetry to identify the likelihood of respiratory complications, especially in units that didn't have access to paediatric HDU facilities [1]. It was also suggested that significantly abnormal overnight oximetry would identify children who might require a HDU bed post-operatively. More recent guidance has moved towards clinical assessment in decision making and suggested that overnight oximetry is not routinely recommended for most children with obstructed sleep disordered breathing [2].

AT for OSA/oSDB has a greater incidence of respiratory complications than non-OSA/oSDB surgery. Examining whether sleep apnoea severity predicts those complications is therefore important when determining who can have surgery on a day case basis.

There are three key questions when it comes to investigating OSA/oSDB severity as a risk factor for respiratory complications that might affect day-case suitability.

1. Is there a group of children that have such a high post-operative respiratory complication rate, within the usual 3 to 4hour day case observation period that can be realistically identified pre-operatively? Day case surgery therefore may not appropriate in such children.
2. How severe are these complications do pre-operative sleep investigations reliably identify at risk children? The potential benefit of oximetry and especially polysomnography (PSG) must be weight against cost and availability and potential delays to treatment.
3. Is there a group of children that are at risk of significant complications after being discharged i.e., between 3 or 4 hours and 24 hours? These children seem fine initially but suffer complications at home after discharge.

Regarding the first question, there is enough evidence that patients identified in Appendix 1 are so likely to have post-operative issues that day surgery is inappropriate for them, and elective inpatient admission should be planned. A pre-operative sleep study is unlikely to change that.

A recent meta-analysis summarised data from more than 120,000 children having AT surgery divided complications into major and minor complications [3]. Major complications included: laryngospasm, bronchospasm, pulmonary oedema, pneumonia, or desaturations requiring intervention (for example intubation or naso- or oropharyngeal airway insertion). Minor complications included: temporary desaturations, pain and emesis. Most complications were found to be minor.

In the context of determining who is safe for day case surgery, the major complications are of interest, as a child may suffer harm. The minor complications would not necessarily preclude day case suitability. For example, if a child has post-operative desaturations that do not require any intervention or have a transient oxygen requirement then this would not be sufficient on its own for admission. It is worth remembering that children with OSA are likely to already have been desaturating at home for a period of months or longer. However, minor desaturations after adenotonsillectomy may indicate that OSA/oSDB has not been resolved, emphasising the importance of counselling parents that they should initiate re-contact with clinicians in cases of non-resolution of symptoms, perhaps using patient-initiated follow-up (PIFU).

Patients with moderate or severe OSA/oSDB are associated with a greater risk of any respiratory complications compared to those without OSA/oSDB. However, when examining major respiratory complications, they found that the incidence was no greater in children having AT for OSA compared to those having adenotonsillectomy for non-OSA/oSDB reasons. If the starting point is that adenotonsillectomy for non-OSA reasons can safely be done as day case, and that it is only major (not

minor) respiratory complications that determine day case suitability, then we conclude presence of OSA/oSDB (irrespective of severity) is irrelevant when deciding on day case suitability.

A systematic review examined how polysomnography (PSG) results compare with clinical factors in predicting respiratory complications after adenotonsillectomy [4], and they were particularly interested in the major complications. The defined major events are those "that required significant medical intervention for the patient by a physician or nursing staff, including re-intubation, continuous positive airway pressure (CPAP) therapy, Bilevel Positive Airway Pressure Therapy (BiPAP), insertion of a nasopharyngeal or oropharyngeal airway, bag mask ventilation, an unplanned admission, elevation of care to the ICU, pulmonary oedema, or death. Post-operative desaturations, supplemental oxygen requirements, or need for repositioning, were not included as major respiratory complications. They identified an overall rate of major respiratory complications of 5.8%, but only 8.9% of those with major respiratory complications had moderate or severe OSA on PSG as the only factor suggestive of significant complications; this meant that in an unselected population, only 0.5% of children would experience a major respiratory complication with moderate or severe OSA on PSG as the only predicting factor, and 192 PSGs would be required to predict one major respiratory complication that wouldn't otherwise be predictable. Importantly for UK context, this is based on PSG and not overnight pulse oximetry. Multiple studies have demonstrated that readily identifiable clinical factors were all that were necessary to predict respiratory complications [5-15]. The main predictor of complications appears to be comorbidities, extremes of weight, and young age, rather than OSA severity.

Finally, the question of when major respiratory complications occur is also relevant. The experience of the BAPO working group is that children with major respiratory complications are readily identified in recovery or in the early post-operative period [16].

From a patient safety point of view, what matters is that those complications are identified. Any day case guideline needs to be robust enough to identify children with significant respiratory complications, and not send them home. Every unit using this approach must accept that there will be an unplanned admission rate and a clear policy and pathway for the threshold for admission (see post-operative care).

Key Points

Day Case Criteria

- Age
  - Level 1 Centre: 3 years and older
  - Level 2 and 3 Centres: 2 years and older
- Weight ≥14kg
- Distance from emergent care ideally within 45 minutes
- Co-morbidities (especially those in Appendix 1 ***NOT*** present
- Obesity (>98th centile) ***NOT*** suitable

Preassessment of Children

It is recommended that all children and young people should be pre-assessed prior to the day of their procedure. Children have significantly different emotional needs, physical needs and comorbidities requiring skilled assessment and preparation for their procedure.

All hospitals (district general hospitals, larger teaching hospitals or specialised children's hospitals) should develop a preassessment service for children who are attending for surgery. While most children are fit and appear well (ASA 1 or 2), effective preassessment in this group will still have benefits for children, parents and carers, and the organisation.

Pre-assessment of children booked for tonsillectomy surgery will ensure improvements in safety, quality and efficiency and support improvements in day case rates. The immediate benefits are:

- Reduction in cancellations on the day of their procedure and optimising theatre utilisation
- Reduction in tasks on the day of the procedure leading to improved start times for theatre lists and reduced changes to list order.
- Ensuring all children are booked on to appropriate lists to enable completion of the day case pathway i.e. preferential use of morning lists.

Pre-assessment achieves this by providing an opportunity to:

- Provide assessment of comorbidities and identification of all children suitable for the day case pathway. Obesity is a growing problem and maybe a significant cofactor in obstructed sleep disordered breathing. The weight and BMI of all children should be calculated to ensure that extremes requiring inpatient stay (> 98th centile) can be identified. Children with obesity should be referred to local services for weight management and if possible, family support for weight reduction prior to surgery. A wider ICB led strategy to encourage healthy eating should be developed. This also allows for a check about whether the comorbidity will necessitate an inpatient bed. When grey areas are encountered these decisions should be made in consultation with the listing clinician and anaesthetist.
- Identify patients with significant anxiety issues. When identified preoperatively strategies can be in place for anxiety management which may include increase anaesthetic time scheduling. This may be particularly relevant for children who are neurodivergent. This should reduce day of surgery cancellations and help mitigate potential long-term challenges for future procedures.
- Ensure appropriate information regarding the surgery (see Patient Information Leaflet Section), anaesthesia, pain relief (see Analgesia) and discharge information is provided to parents and young people.
- Opportunity to health screen children, especially with regard to immunisation, parental smoking, oral health and obesity. This is also a forum to identify sibling childcare needs and transport to hospital issues parents may have, in order to promote equity of access. Safeguarding issues may come to light in this environment that may have been missed during the clinical focus of the ENT appointment. Concerns regarding parents' ability to cope with or escalate concerns about post-operative complications at home might result in a recommendation for overnight stay.
- Improve multi-disciplinary team working.

More detailed information on providing preassessment for children is available at https://www.apagbi.org.uk/news/best-practice-preassessment-guidance

Complications Following Day Case Surgery

Readmission following adenotonsillectomy has been shown to be the leading cause for paediatric readmission [1]. There is still ongoing concern from many units who operate on children with OSA/oSDB and therefore children are routinely admitted for overnight observation.

The safety of day case adenotonsillectomy in children without co-morbidities has been demonstrated in retrospective cohort studies [3,4]. These findings have been mirrored by the recent Hospital Episode Statistic (HES) data analysis of 101,180 children undergoing adenotonsillectomy between 2014 to 2019 [5]. In this analysis, any co-morbidity which might contraindicate day case surgery was excluded (including congenital conditions, neurological conditions, and cardiovascular disease). They found no evidence in poorer outcomes between day case and inpatient adenotonsillectomy. Additionally, they found that complication rates were similar between centres performing high rates of day case surgery (>70%) compared with those performing low rates of day case surgery (<50%).

Respiratory complications are seen at a higher rate in children with co-morbidities and those under 2. Heward et al found a significant increase in complications in comorbid children (15.7%) compared to non-comorbid children (6.7%) undergoing adenotonsillectomy [4]. Gan et al found 21.6% of children with mild to moderate OSA had desaturations requiring supplementary oxygen [2], while Chorney and Zur found complications more likely in children with an AHI >5 [6]. Similarly, Marrugo Pardo et al found the majority of respiratory complications occurred within the first 24 hours and 5 of their 6 children who suffered major respiratory complications had severe OSA on pre-operative PSG [7].

However, the data for need for airway intervention in the event of post-operative complications is very poor. In a 2022 systematic review, only 5 studies reported on need for intervention, but the details of this were not consistently documented [8].

Of children admitted overnight for observation, Heward et al saw minor complications in 16.7% of <2s, 10.5% of 2s and 4.1% of >3s [4]. Three moderate complications were seen in children aged 2 and one severe complication in a child aged 11. Similarly, Chorney et al found complications more likely in children under 1.5 years [6].

Day case surgery has not been shown not to be an independent factor in readmission rate in non-specialist centres, with a modest increase (8.0% vs 7.7% in specialist centres) [5]. This finding in UK centres is mirrored in data from Australia, where no statistically significant difference between ED visits (day case rate 9.17% vs inpatient rates 10.2%) and readmission (day case rates 5.19% vs inpatient rates 5.92%) [1]. In their 2022 series, Heward et al concluded that in the case of their 3 readmissions within 28 days of surgery, none would have been prevented by overnight observation [4].

Data on the timing of post-operative complications during the observation period is very poor. Two studies suggest that the majority of events occur within 3 hours [9] and 6 hours [7] of surgery. The safety of same day discharge rates could therefore be improved by the early prioritising of younger children with OSA to ensure adequate post-operative monitoring time is available.

In a recent systematic review [8] demonstrated that in 7 studies, the successful planned day case rate was 96.1%. However, this series was largely limited to retrospective cohort studies. It may be that larger, prospective studies would reinforce the evidence for the safety of day case surgery for adenotonsillectomy in children.

Key Points

Complications

- Major respiratory complications are readily identifiable in recovery or in the early post-operative period.
- Minor Respiratory complications that do not require intervention or only required transient oxygen requirements are not an indication for admission.
- Children at high risk of post-operative respiratory complications (see Appendix 1) are not suitable for day case surgery.
- Clinical factors (co-morbidities, extremes of weight and young age) are the main predictors of complications rather than severity of OSA/oSDB.

Patient Information Leaflets

The use of patient information leaflets (PILS) is highly encouraged. The use of written information has been shown to improve patient and parent recall of information especially regarding operative risks [1].

Paediatric consultations may be disrupted by the demands of siblings who are present. PILS may provide the opportunity to convey risks to parents that may be upsetting to discuss in the presence of the child. The information provides a reference for patients and may be of value in a medico-legal context if there is a claim of non-disclosure of risk.

The leaflet also provides a resource for parents to plan post-operative care. It will hopefully prevent re-presentation for events that are expected sequalae of surgery, by managing parental expectations about recovery from an operation where pain and issues with eating and halitosis are commonplace. Thresholds for re-presenting to care should be included for example with regard to frank oral bleeding. A locally appropriate care pathway should be agreed and presented in the PIL to ensure that parents seek medical advice or attention in an appropriate place.

Information leaflets should be readable and easy to understand. Parental comprehension of online ENT information resources has been demonstrated to be poor [2]. A UK study of PILS suggest that a significant number are written above national reading levels. It is recommended that readability tools should be used to assess PILS that are developed [3].

Leaflets may be hard copy but increasingly QR codes are used to access an online information leaflets. Example PILS used at Portsmouth and Sheffield are included. Also included is an information leaflet developed by ENTUK with BAPO.

Increasingly, centres are developing online resources with videos of the care they will receive and include relevant information which can be viewed on phones.

Post-Operative Management

In the immediate post-operative period, while patients are still drowsy, having an oxygen requirement is not unusual. In this period, waking the patient up, controlling pain and nausea, watching for bleeding and maintaining saturations are key priorities. As patients become more awake, preparing them for discharge becomes a key goal. Once awake, children should have regular observations and be encouraged to eat and drink. Any signs of bleeding should prompt an examination by medical staff. Most units have an observation period of between 2 to 6 hours for day case.

A meta-analysis of adults and children undergoing tonsillectomy, showed that over half of all primary bleeds had occurred by 3 hrs with only 1 in 14 occurring after 8 hours (an overall risk of 0.1%) [1]. It must be acknowledged that some studies have 75% of primary bleed occurring after 4 hours [2]. Obesity is a risk factor for post-operative bleeding and therefore another potential indication for overnight observation [3]. Regarding observation for primary haemorrhage, 3 hours seems reasonable and allows more patients to potentially be operated on an afternoon list. Parents need to be counselled to seek urgent help if there is post-operative bleeding after discharge with clear instructions of where to go to based on local/regional ED and ENT out of hours' services. For adenoidectomy alone using a direct vision technique such as suction monopolar or Coblation®, a 2-hour observation period is reasonable [3]. Units doing intracapsular tonsillectomy may feel that a 2-hour observation period is sufficient given that the risk of return to theatre for primary haemorrhage may be as low as one in a thousand [5].

Regarding respiratory complications in unselected patients the rate of post-operative adverse respiratory events is very low (in the order of 2%) [6]. In selected patients without comorbidities the expectation would be that this rate would be even lower. The causes for this include bronchospasm, laryngospasm, apnoea and hypoxaemia. Patients who do not have significant respiratory problems in a Post Anaesthetic Care Unit (PACU) are unlikely to develop respiratory problems after transfer out of PACU [6].

The group therefore recommends a minimum 3-hour post-operative observation period to be safe [7,8] with a view to discharge if there are no complications during that period.

Patients who have a poorly controlled pain, emesis and poor oral intake at 3 hours should be observed for a further period of up to 3 hours and may be discharged at that point. If there is a continuing oxygen requirement at 3 hours, plans should be made for a medical assessment and unplanned admission. Children of Afro-Caribbean heritage have a higher rate of post-operative oxygen requirement, and this may affect pre-operative discharge planning [6,9]. This should also be the case if the other criteria for discharge are not met.

Pain Management

Managing pain after a tonsillectomy is crucial for a smoother recovery process and promoting same day discharge. The post-operative period can be uncomfortable and painful. Employing effective pain management strategies is vital to ensure patients can recover comfortably and reduce the risk of complications.

Almost one in five post-discharge presentations to emergency care are for acute pain [1]. Therefore, prescribing sufficient analgesia is important to maintain smooth post-operative recovery and promote regular oral intake. It is crucial for patients to adhere to the prescribed dosage and frequency to ensure the effectiveness of pain relief. Using regular, rather than on demand analgesia, for at least the first 72 hours is recommended as this tends to be most painful period [2]. If a child is allowed to develop poorly controlled oral pain, convincing them to accept oral analgesia may become challenging.

Providing detailed information via PILS is also important to manage parental expectations and prevent unnecessary unplanned admissions and readmissions. Simple advice such as maintaining proper hydration by drinking plenty of fluids, preferably water, can help keep the throat moist and aid in swallowing, which can minimize discomfort.

While advice to promote as close to a normal diet is now standard practice, it may be anticipated that a child's unwillingness to attempt eating might be tempered by offering "treat" foods which would still be preferable to not eating anything. Cold or cool foods like ice cream, lollipops/popsicles, and yogurt can provide relief to the inflamed throat while also ensuring adequate nutrition.

Poorly controlled pain may lead to poor oral intake which may then result in slough infection causing more pain and other potential complications. This may be the result of poor compliance by care givers. Multiple studies have demonstrated under-dosing is a significant issue with possibly more than half of all children receiving two or fewer doses on post op day two [3], which is potentially more painful than day one.

Intra-operative IV paracetamol and non-steroidal anti-inflammatory drug (NSAID) treatment as well as dexamethasone is recommended to improve pain control on waking and reduce nausea [4]. Two meta-analysis confirmed that NSAID use during tonsillectomy is not associated with an increased bleed risk [5,6].

There is evidence that a single dose of intra-operative dexamethasone reduces post-operative nausea and vomiting as well as reduces immediate post-operative pain. This is helpful in early return to oral diet and making achieving day case discharge more favourable. There is no evidence that it increases post-operative bleed risk [7].

The mainstays of post-tonsillectomy analgesia would be paracetamol, NSAID with an opioid for rescue/breakthrough pain. Paracetamol and ibuprofen prescribed as alternating doses provides effective control of post-tonsillectomy pain in the majority (but not all) of children and does not increase rate of bleeding [8].

Paracetamol can be prescribed using two dosing strategies: age-banded dosing (as in "over the counter" paracetamol) and weight-based dosing.

Age-banded doing ("over the counter") paracetamol has the advantage of being easy to comply with and simple volumes to administer. For a very short duration treatment by parents for mild pain it is safe but risks under-dosing in as many as a quarter of children (as doses of 10mg/kg or below are considered sub therapeutic). There is also potential for supratherapeutic dosing in a smaller number of children [9].

For post operating pain weight-based dosing is therefore much preferred with 15-20mg/kg per dose of paracetamol up to a maximum of 1g per dose four times a day [10].

Ibuprofen is also a commonly used NSAID. Outside of a hospital setting, age-banded doses are used with similar issues of under-dosing. The BNF for Children suggests a maximum dose of 30 mg/kg per day given in 3 to 4 divided doses. Higher doses (30-40mg/kg per day in 3-4 doses) have been deemed appropriate in juvenile arthritis and for short term in the post-operative recovery window. The disadvantage of weight-based dosing is the potentially unwieldy volumes. One approach is to use a weight range approach with simpler dosing volumes to aid parental compliance (see Sheffield Vignette).

Codeine was in widespread use until some high-profile deaths after tonsillectomy which led to the US Food and Drug Administration stating that codeine should not be used in children following tonsillectomy. This was followed by cautionary warnings issued by the Royal College of Anaesthetists and the Royal College of Paediatrics. As such Codeine should not be prescribed for breakthrough pain in children.

The options for an orally administered synthetic opioid are tramadol, dihydrocodeine, oxycodeine and oral morphine. Oral morphine is a reasonable choice as we have lots of experience with this [9]. 0.1-0.2mg/kg 6 hourly up to 5mg is a reasonable dose. Care should be taken to dispense only enough for between 8 and 12 doses and parents should be advised to discard unused morphine after 10 days post-operatively.

There is no evidence that peri-operative or post-operative antibiotic use has any impact bleed rates or post-operative pain [7]. In view of the of potential adverse reactions the use of routine antibiotic prophylaxis is not recommended.

Children should have their weight and height measured at preassessment to identify children classified as obese (BMI >98th centile) as these children may require close consideration of the doses of analgesics being prescribed. Dose adjustments may be required and further information to support this is provided by the RCPCH [11]. Departments should have a locally agreed policy on this to reduce variability and to ensure optimal effectiveness and safety. For children >40kg, care should be taken not to exceed the maximum recommended dose for an adult.

Key Points

Analgesia

- **Paracetamol**:
  - Oral weight-based dosing (15-20mg/kg) up to a maximum dose of 1g per dose, four times a day, is recommended rather than age-banded doses.
  - Paracetamol is not licenced under 2 months of age orally

- **Ibuprofen**:
  - Oral weight-based dosing (30mg/kg) in 3 to 4 divided doses

- **Codeine should not be prescribed.**

Post-Operative Follow-Up

The results for successful resolution of sleep disordered breathing after tonsillectomy / adenotonsillectomy are excellent. The Childhood Adenotonsillectomy Trial (CHAT) study, the first randomised controlled trial between surgery and observation, had a resolution of symptoms was 79% [1]. For otherwise healthy children, the expectation would be for complete resolution of symptoms in the vast majority. The group recommends no follow-up or Patient-Initiated Follow-Up (PIFU) for these children.

Patients with comorbidities, especially obesity [2], will have a higher rate of non-resolution or partial improvement of symptoms. These patients should be counselled pre-operatively about the risk of residual symptoms. These patients could receive a review or indeed PIFU.

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Appendix 1

Relative Risk Factors Co-Morbidities for Day Case Surgery:

- Down's Syndrome
- Achondroplasia
- Significant comorbidity including:
  - Severe Cerebral Palsy
  - Significant Respiratory Disease
  - Craniofacial abnormality
  - Congenital heart disease
  - Haematological /clotting abnormality
  - Neuromuscular disorder
- Significant co-existing upper airway abnormality
- Safeguarding concerns

Appendix 2

Paediatric Growth Charts are available here:

https://www.rcpch.ac.uk/resources/growth-charts

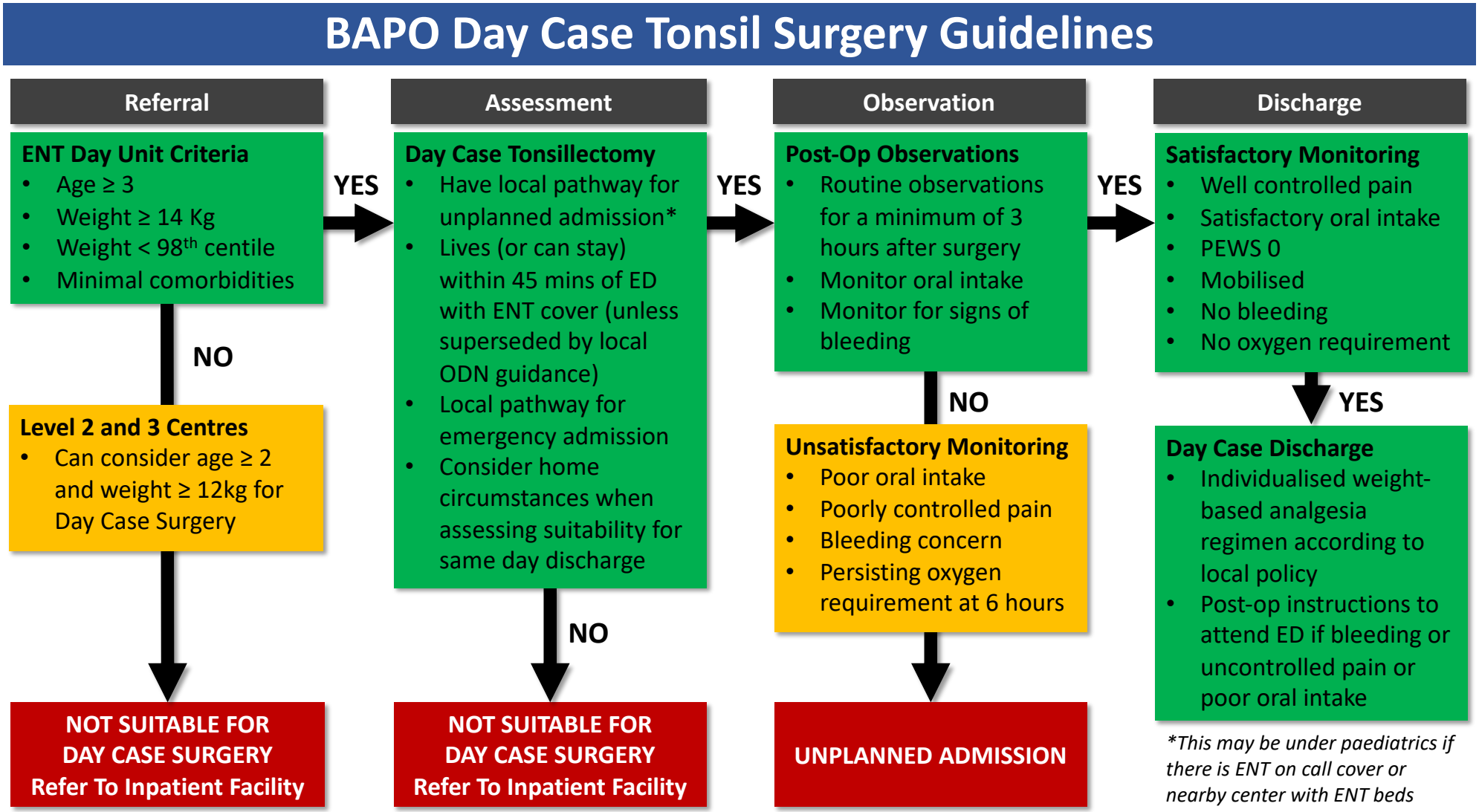
Appendix 3

The GIRFT Paediatric Tonsillectomy Pathway is available here:

https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/07/Day-Case-Paediatrics-Tonsillectomy-Pathway-FINAL-V1-June-2023.html

Appendix 4

BAPO Day Case Tonsil Surgery Guidelines



Appendix 5

ENT UK/BAPO Tonsillectomy Aftercare Guidance for Parents

After your child's tonsil surgery: tips for parents - NEW

QUICK FACTS

- Taking their tonsils out will give your child a sore throat.
- Your child needs to take regular painkillers after surgery.
- This will let them eat normal food, including bread.
- Your child will need two weeks off school and social activities to recover from surgery.
- There is a one in six chance of bleeding after the surgery. If this happens, please go to the nearest A&E department.
- One in 100 children may need to have a second operation to stop bleeding.

When your tonsils are taken out, it is called a tonsillectomy. This e-leaflet lets you know what to look out for when your child has had their tonsils taken out. There are some useful tips on how to care for their symptoms and who to contact in an emergency.

How long does my child need to stay in hospital?

Before your child's operation, your surgeon will talk to you about the surgery. Together, you will decide if the operation can be done as a day case. This means your child will be able to go home later on the same day.

If the surgery cannot be a day case, your child will need to stay in hospital overnight.

Day case surgery

Before the child goes home, the doctors must keep an eye on their recovery. For a day case, there must be enough time for this on the same day. It will be at least six hours after the operation before your child is able to go home.

If you live a long way from the hospital, your child may not be able to go home the same day and will have to stay in the hospital overnight.

There are set goals that your child must reach before going home. The nurse looking after your child will check how they are doing after surgery. If they meet the goals, they will be able to go home.

Some children feel sick for a while after the operation. Your surgeon may need to give your child some medicine for this. Your surgeon will let your child go home when they feel well enough and are eating and drinking a good amount.

What problems could I see after the operation of my child?

Tonsil surgery is very safe. But there are risks to all operations. Your surgeon will tell you about the risks before the operation.

The most serious problem is bleeding. Bleeding can happen at any time in the two weeks after the operation.

If you see any bleeding from your child's throat, you must see a doctor. Either call your GP, call the ward, or go to your nearest hospital emergency department.

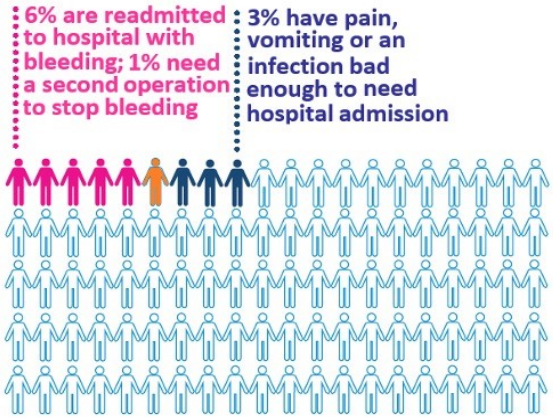
Go straight to your nearest A&E department if your child has any of the following:

- **Spitting out bright red blood or clots.**
- **Difficulty breathing.**
- **Vomiting bright red, black or brown vomit. This could be blood and needs to be checked.**

About six children out of every 100 who have their tonsils out will need to go back to hospital because of bleeding. One child out of every 100 will need a second operation to stop the bleeding.

What can I do about the pain my child feels after the operation?

Your child will have a sore throat for up to two weeks. It is important to give your child pain medication every



day, following a regular pattern.

- Make sure that you have enough medicine at home and that you know when to give it.
- It is best to give the medicine half an hour before meals for the first few days.
- Do not give more than it says on the label.
- Do not give your child aspirin. Aspirin could make your child bleed. It is not safe to give to children under 16 years old at any time, unless prescribed by a doctor.

What kind of food should I give my child after the operation?

Eating normal food will help your child's throat to heal. It will help the pain as well. Always give your child a drink with every meal. Chewing gum may also help the pain.

Some children will not want to eat or drink after the operation. Sometimes they might get dehydrated. If that happens, your child might need to go back to the hospital for help with hydration and nutrition. This happens in about three out of 100 children.

If your child eats and drinks as normally as possible after their tonsils are removed, there is less chance of getting an infection or bleeding.

What happens when my child complains about sore ears?

After a couple of days, your child might complain about sore ears. This is normal. It happens because your throat and ears have the same nerves. It does not usually mean that your child has an ear infection.

Why does my child's throat look white?

The white colour is normal while the throat heals. It is not pus and you do not need antibiotics.

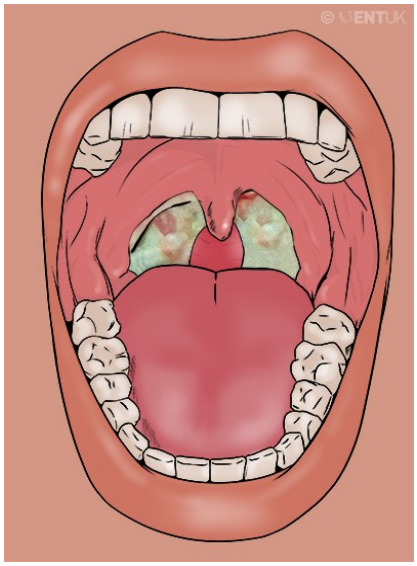


Figure 1. A normal-looking throat after tonsillectomy

You may see small threads in your child's throat. These are sometimes used to help stop bleeding during the operation and fall out by themselves.

Infection

Look out for throat infections in the two weeks after the operation. Fever is common in the first 24-48 hours after tonsillectomy. This happens to up to half of patients. A high temperature of **38^{O}C (100^{O}F) or more** should not need antibiotics if it quickly goes back to normal. If the fever does not go down, it could be caused by an infection.

Often when children get a throat infection after surgery, they have not been eating properly. If this happens, you may notice a fever and a bad smell from your child's throat. Call your GP or the hospital for advice if this happens. Your child may need a course of antibiotics if they have an infection.

Swelling of the uvula

The dangly bit at the back of your child's throat, called the uvula, can swell up after the operation. They might feel like they have something stuck at the back of their throat. This gets better within a few days.

Damage to teeth, lips and gums

The instrument used to keep your child's mouth open during the operation sits on the teeth. Please let us know if they have any loose teeth.

How long should I keep my child off school?

Your child may feel tired for the first few days and should stay at home for 10-14 days. Make sure they rest at home, away from crowds and smoky places. Keep your child away from people with coughs and colds.

Can my child brush their teeth?

Yes. It is important to brush the teeth after the operation, to keep your child's mouth clean.

Will my child need to be seen in the clinic after the operation?

No. We will tell you before you go home if an appointment is needed.

Who do I contact if I have problems in the two weeks after my child's tonsils are taken out?

Please contact the day surgery unit or your GP if your child has any of these problems:

- Difficulty swallowing liquids.
- Painkillers don't stop the pain.
- A fever of 38°C/100°F or more that won't go away.

Author: Astrid Koenig

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Appendix 6

Sheffield Children's Hospital Guidelines for Analgesia Prescribing for Day Case Tonsillectomy

Guidelines for Analgesia Prescribing for Day-case Tonsillectomy

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Introduction:

Post-tonsillectomy pain is a challenge for many children and their families, with severe pain being well-documented in the first 10 days post operation. Simple analgesia, such as paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs), is insufficient for moderate to severe pain [(1,2)]. Rescue analgesia used to be provided by codeine, until this was discontinued in 2013 due to opiate toxicity fears[(3)]. There followed a dilemma, in provision of postoperative analgesia, with some centres opting to provide oral morphine, while others felt opioids were unnecessary. In addition to pain, there is a considerable burden on sleep and eating and drinking patterns for these children. Moreover, it is known that parents and carers may struggle to assess and manage their children's pain and symptoms during recovery[4]. While we opted to provide low dose oral morphine, we wished to audit this practice to determine its necessity. We designed a process whereby we could collect data from families at home on each postoperative day for 10 days. This involved a set of automated SMS text messages, requesting responses on pain score, analgesia given, and incidence of postoperative nausea and vomiting (PONV).

The Audit Cycle :

33 post-tonsillectomy patients were recruited to the SMS text audit, who had been discharged with a 10 day supply of paracetamol and ibuprofen, along with enough oral morphine to provide 10 doses at 0.1mg/kg. There was a response rate of 84%.

Results showed that:

- Morphine was used in most patients (>70%)
- Morphine was more frequently required a few days into recovery rather than first 24 hours.
- Moderate to severe pain was found in up to 10 days post op (most severe scores up between day 2-7) despite simple analgesia.
- PONV rates are high but not related to morphine use.
- Intra-capsular Coblation technique may be associated with reduced postoperative pain - which may be useful to aid in recovery in patients aged 3 and under with OSA.

The audit confirmed that morphine provided useful rescue analgesia for a large majority of patients and justified its continued inclusion in the discharge prescription.

After discussion between the ENT surgeons, anaesthetists and pharmacists at the hospital, a consensus guideline was created for take-home analgesia after tonsillectomy.

There were four important aspects of this package:

- Simple analgesia – this was provided in the form of paracetamol and ibuprofen. For both drugs, a dosing chart was used, based on the patient's weight, as dosing by age is known to be inadequate for postoperative analgesia. The aims of the dosing chart are to prescribe a volume of drug which can be easily drawn up and administered by a non-medical carer, using a graduated oral syringe or medicine spoon, while delivering as close to the maximum daily dose, in four divided doses. A 10-day supply of each drug was provided. Ibuprofen was prescribed for use 6 hourly (qds) rather than the more traditional 8 hourly to help parents manage two medications (paracetamol and ibuprofen) on the same timing schedule to reduce administrating confusion. Parents were advised to use both medications on a g hourly schedule or alternate both agents 3 hourly.

- Opioid rescue – this was provided as oral morphine (0.1mg/kg) up to 4 times a day (6 hourly) for 3 days (12 doses total) for patients >3years ***without severe OSA.*** The hospital pharmacy dispensed a volume suitable for this purpose, avoiding a situation where families may be left with excess unused morphine.
- Topical analgesia – this was provided as Benzydamine spray in an appropriate dose for age.
- Parent / carer advice – a new written information resource was created to encourage regular use of simple analgesia for 10 days postop, with advice on the use of rescue analgesia and symptom relief for nausea and vomiting.

A re-audit was conducted in 2019, focusing on changes made to parent/patient information from the previous audit as well as assessing the changes made in the take-home analgesia. A greater proportion of tonsillectomies were being carried out by intracapsular Coblation during this timeframe, so a further focus was to determine whether the need for rescue morphine was influenced by surgical technique.

51 patients were recruited to this second postoperative study using automated SMS text messaging and, again, the response rate was excellent at 78.4%.
The daily average pain scores confirmed that less pain was experienced by patients who had intracapsular tonsillectomy (70% of the patients), compared to the bipolar diathermy technique. 63% of patients received rescue morphine, including 52% of intracapsular technique patients and 92% of diathermy patients, and the audit found that pain scores were still relatively high despite low dose morphine. This confirmed that morphine was required for a significant enough proportion of patients receiving intracapsular technique to justify providing it. Nausea and vomiting was still an issue, likely due to the severely emetic nature of the surgery rather than the use of morphine for analgesia. PONV was highest in the first 5 days (up to 21%) and less than 10% after day 5 despite ongoing use of morphine. 38% patients reported some positive benefit from Benzydamine spray.

The resulting changes from this audit to the local guidelines:
- Allow low-dose morphine for <3 years old, with appropriate advice.
- One bottle of difflam per patient only, with a suggestion to purchase more over the counter if felt to be helpful.
- Improve the patient information resource, to provide advice on symptom relief and reiterate the importance of regular analgesia for 7-10 days.
- Children with concerns regarding severe OSA, may still have morphine, but with assessment overnight as an inpatient prior to discharge with TTO morphine.

Guideline content

Children aged 3 years and under:
- **Paracetamol** 6 hourly for 10 days (dose by weight as per TTO chart)
- **Ibuprofen** 6 hourly for 10 days (dose by weight as per TTO chart)
- Consider **Difflam** oral spray, 1 spray/every 4kg weight to tonsillar wounds before mealtimes and in between meals, 1.5-3 hourly for 7 days
- **Morphine Sulphate oral solution** 0.1mg/kg (max 5mg) to be used as required, up to 6 hourly for 3 days

Children aged 4-11 years:
- **Paracetamol** 6 hourly for 10 days (dose by weight as per TTO chart)
- **Ibuprofen** 6 hourly for 10 days (dose by weight as per TTO chart)
- Consider **Difflam** oral spray 4 sprays to tonsillar wounds before mealtimes and in between meals, 1.5-3 hourly for 7 days
- **Morphine Sulphate oral solution** 0.1mg/kg (max 5mg) to be used as required, up to 6 hourly for 3 days

Children aged 12 years and over:
- **Paracetamol** 6 hourly for 10 days (dose by weight as per TTO chart)
- **Ibuprofen** 6 hourly for 10 days (dose by weight as per TTO chart). 8 hourly once maximum 400mg dose reached.
- **Difflam** oral spray 4-8 sprays to tonsillar wounds before mealtimes and in between meals, 1.5-3 hourly OR **Difflam** mouthwash – rinse or gargle 15ml 1.5-3 hourly for 7 days

- **Morphine Sulphate oral solution** 0.1mg/kg (max 5mg) to be used as required, up to 6 hourly for 3 days

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- Stewart DW et al. The severity and duration of postoperative pain and analgesia requirements in children after tonsillectomy, orchidopexy, or inguinal hernia repair. Pediatric Anesthesia 2012; 22: 136-143
- MHRA 2013. Codeine for analgesia: restricted use in children because of reports of morphine toxicity
- Longard J et al. Parents' experiences of managing their child's postoperative pain at home: an exploratory qualitative study. Journal of Clinical Nursing 2016; 25: 2619-2628

Appendix 1 – Simple analgesia doses by weight

PARACETAMOL (prescribe 6 hourly)

Weight	Dose 15-20 mg/kg qds	Formulation
5.0-6.9 kg	84mg (3.5ml)	**AGE 3 months-6 years**
7.0-9.9 kg	120mg (5ml)	Max 75mg/Kg/day
10.0-12.9 kg	180mg (7.5ml)	Paracetamol (Calpol Infant)
13.0-16.9 kg	240mg (10ml)	120mg/5ml liquid
17.0-19.9kg	300mg (12.5ml)	
20.0-24.9kg	360mg (15ml)	
14.0-16.9 kg	250mg (5ml)	**AGE 6-12 years**
17.0-19.9 kg	300mg (6ml)	Max 75mg/Kg/day
20.0-26.9 kg	375mg (7.5ml)	Paracetamol (Calpol 6+)
27.0-33.9 kg	500mg (10ml) or 1 tablet	250mg/5ml liquid
34.0-39.9 kg	625mg (12.5ml)	
40.0-53.9 kg	750mg (15ml)	
>54 kg	1g (20ml) or 2 tablets	
Over 54 kg	1g (20ml) or 2 tablets	**AGE >12 years**
		Max no more than 4g/day
		Calpol 6+ or 500mg tablets

IBUPROFEN (prescribe 6 hourly)

Weight	Dose 5-7.5mg/kg qds	Formulation
5.0-5.3kg	30mg (1.5ml)	
5.4-6.9 kg	40mg (2ml)	**AGE 3 months-12 years**
7.0-8.4 kg	50mg (2.5ml)	Max 30mg/Kg/day
8.5-9.4 kg	60mg (3ml)	
9.5-10.6 kg	70mg (3.5ml)	Ibuprofen liquid 100mg/5ml
10.7-13.3 kg	80mg (4ml)	
13.4-17.3 kg	100mg (5ml)	
17.4-19.9 kg	130mg (6.5ml)	
20.0-26.9 kg	150mg (7.5ml)	
>27 kg	200mg (10ml) or 1 tablet	200mg tablet
>53 kg	200mg -400mg (10-20ml)	**AGE >12 years**
Adult dose (400mg) usually prescribed tds	Or 1-2 200mg tablets (400mg dose 8 hourly)	Ibuprofen liquid or 200mg tablets

Dose adjustments are required for patients whose BMI is ≥98th centile for age.

Appendix 2:
Parent / carer information resources

It is very important that children are given regular painkillers after having a tonsillectomy, so that they can recover comfortablyand begin to eat and drink normally as soon as possible. Here are some commonly asked questions and answers:

Will my child experience a lot of pain?
It is common for children to have pain and feel uncomfortable for 10 to 14 days after tonsillectomy. Pain may increase each day after the operation, with the worst discomfort occurring about 3 to 5 days after the operation. They will experience discomfort on swallowing and may also notice some jaw pain and earache.

What should I do to treat the pain?
You will be given a package of painkillers to take home, and it is very important that you follow the instructions about doses from the hospital pharmacy.

Please give paracetamol and ibuprofen regularly, around the clock including during the night, for at least 7 days, to make surethat your child always has some painkiller working. Paracetamol and ibuprofen work well when given together, 4 times in 24 hours (every 4 to 6 hours), but it is also possible to stagger the doses to give the medicines separately. Some people find it useful to set a timer to remind them when the next dose is due.

What is Difflam (benzydamine)?
Difflam (benzydamine) is a throat spray that can be helpful to reduce discomfort on swallowing, and we may supply a bottle totake home. We suggest using it before meals and up to every 2 hours as required.

It is important to try to direct the spray onto the areas where the tonsils were removed, though this may be tricky in smallchildren. If your child finds it helpful and you need a further bottle, you can buy it over-the-counter from the chemist.

What if my child is in severe pain?
You will be given a small quantity of oral morphine solution, which should be used if your child experiences severe pain afterparacetamol and ibuprofen have already been given. It can be particularly helpful during days 3 to 5 after the operation.

Please follow the instructions on the additional morphine information you will be given by the pharmacy.

Do I need to change my child's diet at home?
Your child's appetite may take a few days to return, but it is important to encourage them to eat and drink regularly. It is best toeat a normal diet, including rough foods like toast, to help healing and reduce the risk of infection and bleeding.

Encourage your child to have a drink of water after eating to keep the healing area clean. Ice lollies can be soothing and olderchildren may find chewing gum helpful for a sore throat.

What if my child feels sick or vomits?
It is common for children to feel sick on occasions while recovering from a tonsillectomy.

Make sure your child gets plenty of rest, as sometimes lying down for a few hours can be enough to help.Encourage small sips of water or diluted squash, but not hot or fizzy drinks.
Avoid large gulps of water, as these can cause the stomach to expand quickly and may trigger vomiting.

If your child does vomit, take a break from solid foods for a few hours and then offer bland foods that are easy to digest onceyour child feels better, such as crackers, toast or bananas.

What should I do if I am worried about my child at home?

We suggest you ring the Theatre Admissions Unit (xxxx xxx xxxx) between 7.30am and 8pm, Ward 1 (xxxx xxx xxxx) or yourGP. Your local Emergency Department will help in an emergency.

When do I need to seek medical advice?

Bleeding: If there is fresh blood from the nose or mouth.

Noisy breathing: If your child's breathing becomes noisy or difficult.

Pain: If your child has severe pain that is not responding to the painkillers you were given on discharge.

Vomiting: If your child is being frequently sick and even water is causing sickness, or there is blood in the vomit.

Infection: It is usual for a whitish membrane to form over the areas where the tonsils were removed, and for your child's breath to be a littleoffensive while they are recovering. However, extremely bad smelling breath, a fever or temperature, or increasing pain especially in the second week after the operation, may be signs of infection which needs attention.

When can my child go back to school or nursery?

Keep your child off school or nursery for 2 weeks after the operation, with very few visitors. Try to avoid anyone with an infectionand smoky or crowded environments.

Introduction

This resource is about the use of morphine to reduce moderate to severe pain. This might be pain from an injury, after an operation or due to an illness.

This information has been written specifically about the use of this medicine in children. The information may differ from that provided by the manufacturer. Please read this information carefully. Keep it somewhere safe so that you can read it again.

Do not give extra doses of morphine, as this can be dangerous.

Name of medicine
Morphine

Common brand name
Oramorph

Why is it important for my child to take this medicine?

Morphine will help to control your child's pain.

When should I give morphine?

Give your child a dose of morphine when other painkillers have not worked and your child is still in pain. If you give your child morphine continue to give the other painkillers prescribed by your doctor when your child went home. The label will tell you how often you can give it. If you are not sure, check with your pharmacist or doctor first.

Top tip: Write down the time that you give each dose, to help you remember.
It is important that you follow your doctor's instructions about how much to give.

How much morphine should I give?

Your doctor will work out the amount of morphine (the dose) that is right for your child. The dose will be shown on the medicine label

How should I give morphine?

Start with the lowest dose given on the label. If this does not work you can give the bigger dose stated on the label when the next dose is due.
Do not give a dose if your child is sleepy.
Do not give a dose if your child is sleepy.

Giving liquid medicine
Measure out the right amount using an oral syringe or medicine spoon. You can get these from your pharmacist.

Do not use a kitchen teaspoon as it will not give the right amount.

When should the medicine start working?

Your child should start to feel less pain within 1 hour of taking the first dose of morphine.

What if my child is sick (vomits) after morphine?

Some children may be sick or feel sick after taking morphine.
If your child is sick after taking a dose, **do not** give another dose. Wait until the next normal dose.
If your child is sick after taking a dose, **do not** give another dose. Wait until the next normal dose.

What if I forget to give the morphine?

Don't worry if you forget a dose. Morphine stays in the body for a while and will continue to work.

Only give a dose of morphine if your child is in pain and **never** give doses more often than every 4 hours.

What if I give too much morphine?

Call 999

It can be dangerous to give your child too much morphine.

If you think you may have given your child too much morphine, contact your doctor straight away. If your child seems very sleepy, or if they have problems with their breathing, your child may have had too much morphine. Phone 999 for an ambulance straight away. Take the medicine container or pack with you, even if it is empty. This will be useful to the doctor.

We use medicines to make our children better but sometimes they have other effects that we don't want (side-effects).

Side-effects you must do something about

If your child has difficulty breathing, stops breathing or seems very sleepy, phone 999 for an ambulance straight away.

If your child has difficulty breathing, stops breathing or seems very sleepy, phone 999 for an ambulance straight away.

Other side-effects you need to know about

After taking morphine, your child may

- feel sick or be sick (vomit)
- get headaches, have a dry mouth or sweat, and their skin may flush (go red) have changes in mood
- feel dizzy and they may feel light-headed when they stand up
- find it difficult to pass urine (do a wee) – contact your doctor if this happens find it difficult having a poo (constipation)

You can help with constipation by giving your child plenty to drink. Your doctor may suggest that your child also takes laxatives – medicine that will help them go to the toilet. It is important that your child doesn't strain on the toilet.

Can other medicines be given at the same time as morphine?

Some painkillers and cough medicines contain codeine or dihydrocodeine (you can find this information on the label). **Do not** give these to your child.

Morphine should not be taken with some common medicines that you get on prescription. It is important to tell your doctor and pharmacist that your child is taking morphine.

You can give your child medicine that contains paracetamol or ibuprofen, unless your doctor has told you not to.

Check with your doctor or pharmacist before giving any other medicines to your child. This includes herbal or complementary medicines.

Is there anything else that I need to know about this medicine?

You may have heard that some people become addicted to morphine or dependent on it. This is unlikely to happen when morphine is given to children in pain.

Morphine is often given to children and adults with life threatening or terminal illnesses. Morphine does not shorten the person's life.

An antidote can be given to someone who has had too much morphine. This has to be done in hospital.

General advice about morphine
If you are not sure that a medicine is working, contact your doctor. **Do not** give extra doses of morphine. Only give morphine to your child. Never give it to anyone else, even if their condition appears to be the same, as this could do harm.

If you think someone else may have taken the medicine by accident, contact your doctor straight away.

Write down the times that you give morphine, to help you remember, and to make sure that you don't give too much.
Make sure that the medicine is not older than the 'use by' date on the packaging. Give old medicines to your pharmacists to dispose of

Where should I keep this medicine?
Keep the medicine in a cupboard, away from heat and direct sunlight. It does not need to be kept in the fridge. Make sure that children cannot see or reach it.
Keep the medicine in the container it came in.

Who can I contact for more information about morphine?
Your doctor or pharmacist will be able to give you more information about morphine and other medicines or methods of pain relief.

Disclaimer
Please note: this is a generic information sheet relating to care at Sheffield Children's NHS FT. These details may not reflect treatment at other hospitals. This information is not intended as a substitute for professional medical care. Always follow your healthcare professionals' instructions. If this resource relates to medicines, please read it alongside the medicine manufacturer's patient information leaflet. If this information has been translated into another language from English, efforts have been made to maintain accuracy, but there may still be some translation errors. If you are unsure about any of the guidance in this resource or have specific questions about how it relates to your child, always ask your healthcare professional for further advice.

Appendix 7

Sheffield Children's Hospital Advice for Parents of Children Having Tonsil Surgery

Before and after your child has had their tonsils or adenoids removed

The operation day

What time should I bring my child to the ward?

You will have received a letter telling you the date of your child's operation and the time you need to bring them into hospital.

If your child's operation is in the morning you need to arrive at 7.45am if your child is being admitted to the Theatre Admissions Unit (TAU).

If your child's operation is in the afternoon you need to arrive at 12pm (midday) if your child is being admitted to Theatre Admissions Unit.

What should I do if my child is unwell or has a temperature a few days before or the day of their operation?

You need to telephone the hospital on xxxx xxx xxxx (tel: xxxx xxx xxxx) and tell us. You will then be told whether it would be safe for your child to have their operat .

What time should I give my child their last food and drink?

If your child's operation is in the morning they can eat until midnight and then have clear juice or water until 6am.

> If the operation is in the morning they must not have anything after 6am or their operation may be cancelled. This includes no chewing gum.

If your child's operation is in the afternoon they must have finished their breakfast by 7.30am. They can continue to drink clear juice or water until 11am.

> If the operation is in the afternoon they must not have anything after 11am or their operation may be cancelled. This includes no chewing gum.

What will happen when we arrive on the ward?

An anaesthetist will visit your child and make sure they are fit for their operation. They may prescribe some numbing cream for your child's hand so that it does not hurt when a tiny tube is inserted into your child's had to allow the anaesthetic to be given. This tube is inserted when they are in the anaesthetic room.

The surgeon will also see you and your child before their operation.

A nurse will take your child's temperature, weigh them and put their name band on their wrist. Your child will be asked to put on a theatre gown or their pyjamas. If your child has long hair they will need to tie it up in a ponytail with a non-metallic band. All jewellery and nail varnish must be removed. The nurse will then apply the numbing cream to their hands.

Your child will either walk or be taken to theatre on a trolley. One parent or guardian may go to the anaesthetic room and stay with them until they are asleep.

How long will the operation take?

Your child will be away from the ward for about 2 hours all together.

After the operation

Will I be there when my child wakes up?

The nurse in the Post Anaesthetic Care Unit (PACU) will contact you so that you can be with your child.

Will my child have any pain?

Your child will have been given some strong painkillers in theatre before they wake up.

They may have some pain later but the nurse will give them some medication to ease this.

When can my child have something to eat or drink?

As soon as your child is fully awake they will be able to have a drink.

> It is best to avoid fizzy drinks until the day after their operation.

Your child may feel or be sick after their operation and you may notice that it is very dark red or brown in colour. This is normal. It is due to the small amount of blood your child will have swallowed during their operation.

Once your child has had a drink and not been sick they will be able to have a small amount to eat.

When can my child go home?

Your surgeon or nurse will have told you whether it is safe for your child to go home on the same day as their operation or whether they need to spend that night in hospital.

If your child has to stay in hospital you can sleep in a parent bed next to them.

At home

Is there anything special I have to do to look after them at home?

> You must keep your child away from smoky environments and other people who have coughs and colds for the next 2 weeks

If you look in your child's mouth after they have had their tonsils removed you will notice that their breath smells and that the area their tonsils were removed from looks white or yellowish in colour. This is quite normal.

You should not fly for about 2 to 3 weeks after surgery. Other travel within this time should be limited to areas where medical support is easily available.

Will my child have any pain at home?

If your child has only had their adenoids removed the pain is usually quite mild and lasts for only a few days.

A tonsillectomy is more painful. The pain can last for 7 to 10 days, and usually at its worst 3 to 5 days after their operation.

Your child may complain of jaw and earache as well as a sore throat. This is normal.

You will be given some medicines which you must give to your child at home before they are discharged. It is extremely important that you give your child these medicines as it will help them to eat and drink. By eating and drinking normally this helps to reduce the risk of your child developing an infection and bleeding after their operation.

Encourage your child to drink as much fluid as possible (as long as they do not have another medical condition where fluids are restricted) in the days after surgery. Their urine should be pale or colourless, showing that it is nice and dilute and therefore they are drinking enough.

> If your child has had their tonsils removed and you are finding it difficult to control their pain try giving them some chewing gum (if they are old enough), it often helps.

What are the complications I must look out for once we have been discharged home?

If you are unable to control your child's pain despite giving them regular pain relief and they stop eating and drinking you need to telephone the hospital.

If your child develops a high temperature (above 38 degrees Celsius) you need to telephone the ENT ward 1 on xxxx xxx xxxx (tel: xxxx xxx xxxx) .

If you notice any clots or bleeding more than half a teaspoon-full from your child's nose or mouth you need to go to your nearest Emergency Department.

When can my child return to school or nursery?

If your child has only had their adenoids removed there is a lower risk of complications and so they can return 3 days after their operation.

If your child has had their tonsils removed it will take them longer to recover and there is a higher risk of infection. It is always sensible to inform schools that they may need up to 2 weeks off.

Will my child need to see their surgeon again?

After the operation the surgeon will decide whether this is needed.

If your child does need to be seen again you will be informed about this before your child is discharged home and an appointment will be sent to you in the post.

Contacts for more advice

Sheffield Children's NHS Foundation Trust

Hospital switchboard

Available 24 hours every day

xxxx xxx xxxx (tel: xxxx xxx xxxx) (main hospital number)

ENT nurse specialist

Monday to Friday, 9am to 5pm

Call xxxx xxx xxxx (tel: xxxx xxx xxxx) and ask to bleep 573

Call xxxx xxx xxxx (tel: xxxx xxx xxxx) (answer machine)

Disclaimer

Please note: this is a generic information sheet relating to care at Sheffield Children's NHS FT. These details may not reflect treatment at other hospitals. This information is not intended as a substitute for professional medical care. Always follow your healthcare professionals' instructions. If this resource relates to medicines, please read it alongside the medicine manufacturer's patient information leaflet. If this information has been translated into another language from English, efforts have been made to maintain accuracy, but there may still be some translation errors. If you are unsure about any of the guidance in this resource or have specific questions about how it relates to your child, always ask your healthcare professional for further advice.

Appendix 8

Queen Alexandra Hospital Advice for Parents of Children Having Tonsil Surgery

The Paediatric Unit
Queen Alexandra Hospital

NHS
Portsmouth Hospitals University
NHS Trust

After your child's Adenotonsillectomy

(removal of the tonsils and adenoids)

Information for parents and carers

Specialist Support
This leaflet can be made available in another language, large print or another format. Please speak to the Ward Manager who can advise you.

Pain

If your child has had a traditional tonsillectomy they will have pain in the throat for 2 weeks after surgery. Sometimes this throat pain is felt in the ear (as the nerves are shared in this area). They will need paracetamol (Calpol) and ibuprofen (Nurofen) 4 times a day for the first week unless they cannot take these medications. It is best to stagger giving these so they don't both stop working at the same time. You may want to use the chart at the end of this leaflet to record when you give each, as it can be easy to forget! Save one of the paracetamol doses up in case your child wakes up during the night in pain, or you may wake your child when you go to bed to give them the 4th dose of paracetamol. You will also be given Difflam spray as a rescue pain killer. This can be particularly helpful just before food to encourage your child to eat. We find day 5 tends to be the worst so don't worry if the pain gets worse before it starts to improve.

If your child has had a coblation operation the pain is normally less. Give paracetamol 4 times a day to start with and ibuprofen as needed. Slowly reduce the ibuprofen first and then the paracetamol.

Bleeding

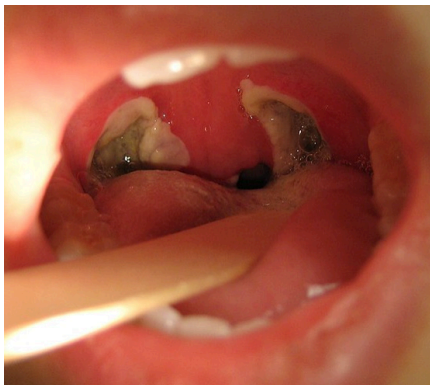
There is a 1 in 20 risk of bleeding from the tonsils after a traditional tonsil operation. Usually this settles without treatment but 1 in 100 children need to have another operation to stop this bleeding. Coblation tonsillectomy has a lower bleeding risk of 1 in 250.

2

If your child spits any fresh blood bring your child straight to your nearest Emergency Department. If this is not Queen Alexandra Hospital, your child may be transferred once they have been assessed. Bleeding can occur up to 2 weeks after the operation. This is usually due to an infection, which can be caused by not regularly eating rough bulky food.

Infection

The best way to stop your child getting an infection is for them to eat rough, bulky food (bread, toast, potatoes, pasta) after the operation. Your child will find this hard because of the pain and will need lots of encouragement! This bulky food drags the debris out of the healing area at the back of the throat. Temperature is the best way to tell if your child has an infection. All children have white debris on the back of the throat after the operation as shown in this photo. This is normal and not an infection.



See your GP for assessment if your child has a temperature you cannot explain by any other problem. If they do think they have a tonsil bed infection they will give you antibiotics. Occasionally children need to come into hospital with an infection for antibiotics into a vein.

Food and drink

It is very important that your child eats and drinks as normally as possible after the operation. This will help keep their mouth and throat clear and free from infection. Textured

foods with bulk to them, such as bread, toast, potatoes and pasta are especially good at cleaning the back of the throat. Cold drinks, sucking on ice chips or ice lollies can be good for soothing the throat. Some children find acidic things such as orange juice can sting.

School / Nursery

A few days indoors taking it easy is recommended initially. Try to avoid contact with large crowds and anyone with an obvious infection such as a cough or cold for at least a week.

The risk of bleeding continues for 2 weeks and so staying away from school or nursery during this time is essential if your child has had a traditional tonsillectomy. If they have had a coblation tonsillectomy they can return once they are back to normal as long as the childcare provider understands your child needs to go to the emergency department if they spit any blood.

Exercise (and swimming) is best avoided for at least two weeks.

Useful numbers

ENT Secretaries xxxxx xxxxxx **/ A8 Ward** xxxxx xxxxxx

Write the time in the box each time a medicine is given.

	Mon	Tues	Wed	Thurs	Friday	Sat	Sun
Week 1							
Paracetamol Every 4 to 6 hours Maximum of 4 doses in 24 hours							
Ibuprofen Every 4 to 6 hours Maximum of 4 doses in 24 hours							
Difflam spray Every 2 hours if needed							
Week 2							
Paracetamol Every 4 to 6 hours Maximum of 4 doses in 24 hours							
Ibuprofen Every 4 to 6 hours Maximum of 4 doses in 24 hours							
Difflam spray Every 2 hours if needed							

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Please download this ‘Little Journey’ app for further information about your child’s general anaesthetic. It includes interactive pictures of the hospital and cartoons to help both of you prepare for the operation.

Notes

Notes

How to comment on your treatment
We aim to provide the best possible service and if you have a question or a concern about your treatment then the Patient Advice and Liaison Service (PALS) are always happy to try to help you get answers you need. You can contact PALS on **xxxx xxx xxxx** or E-mail: **PHT.pals@porthosp.nhs.uk** who will contact the department concerned on your behalf.

Data Protection Legislation – Privacy Notice
Further information on how we look after your personal information can be found on the Trust Information Governance webpage at **www.porthosp.nhs.uk** or alternatively, please speak to the ward manager who can access this information on your behalf.

Consent - What does this mean?
Before any health professional examines or treats you they must have your consent or permission. Consent may be implied (e.g. offering a wrist for taking a pulse) or written (where you sign a form agreeing the treatment / operation). Young people are presumed to be able to give consent depending on their maturity and the nature of the decision. Where a child is not competent to give consent, only a person (or body) with parental responsibility may consent on the child's behalf. More detailed information is available www.dh.gov.uk

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