

## Review Article

Mr C Heining takes responsibility for the integrity of the content of the paper

**Cite this article:** Heining CJ, Amlani A, Doshi J. Ambulatory management of common ENT emergencies – what's the evidence? *J Laryngol Otol* 2021;**135**:191–195. <https://doi.org/10.1017/S0022215121000554>

Accepted: 24 October 2020  
First published online: 17 February 2021

### Key words:

Tonsillitis; Peritonsillar Abscess; Epistaxis

### Author for correspondence:

Mr Christopher Heining, 82 Laynes Road, Huccelcote, Gloucester GL3 3PZ, UK  
E-mail: [chrishening@hotmail.co.uk](mailto:chrishening@hotmail.co.uk)

# Ambulatory management of common ENT emergencies – what's the evidence?

C J Heining, A Amlani and J Doshi

Department of ENT, Birmingham Heartlands Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

## Abstract

**Objectives.** The global pandemic of coronavirus disease 2019 has necessitated changes to 'usual' ways of practice in otolaryngology, with a view towards out-patient or ambulatory management of appropriate conditions. This paper reviews the available evidence for out-patient management of three of the most common causes for emergency referral to the otolaryngology team: tonsillitis, peri-tonsillar abscess and epistaxis.

**Methods.** A literature review was performed, searching all available online databases and resources. The Medical Subject Headings 'tonsillitis', 'pharyngotonsillitis', 'quinsy', 'peritonsillar abscess' and 'epistaxis' were used. Papers discussing out-patient management were reviewed by the authors.

**Results.** Out-patient and ambulatory pathways for tonsillitis and peritonsillar abscess are well described for patients meeting appropriate criteria. Safe discharge of select patients is safe and should be encouraged in the current clinical climate. Safe discharge of patients with epistaxis who have bleeding controlled is also well described.

**Conclusion.** In select cases, tonsillitis, quinsy and epistaxis patients can be safely managed out of hospital, with low re-admission rates.

## Introduction

The global pandemic of coronavirus disease 2019 (Covid-19) has placed unprecedented pressures on the National Health Service (NHS) and all professionals working within it. What was previously considered 'usual' care and 'normal' ways of working have changed in light of these extraordinary circumstances, and our professional bodies are encouraging us to consider alternative ways of caring for patients.<sup>1,2</sup> Minimising unnecessary in-patient admission has always been best practice<sup>3</sup> to minimise risks to patients (e.g. venous thromboembolism, infection, falls) and costs. The balance of risk versus benefit for hospital admission is even further skewed towards admission avoidance in the present pandemic environment.

We wanted to take this opportunity to review the evidence for out-patient management of three common causes for in-patient referral to the ENT team: tonsillitis, peritonsillar abscess (quinsy) and epistaxis.

## Materials and methods

A literature review was performed, searching all available online databases and resources. The Medical Subject Headings 'tonsillitis', 'pharyngotonsillitis', 'quinsy', 'peritonsillar abscess' and 'epistaxis' were used. Further keywords for each condition were 'ambulatory' and 'daycase management'. Only English language articles were assessed.

This search revealed 61 potentially relevant articles. Papers discussing out-patient or ambulatory management of the relevant conditions were reviewed by the authors. Articles were discounted if they did not discuss emergency management of the relevant conditions. This left us with 22 relevant articles meeting the inclusion criteria.

## Results and discussion

### Tonsillitis

Tonsillitis is often managed in the primary care setting, but up to 60 000 patients are admitted to UK hospitals each year with swallowing difficulties or systemic upset that cannot be managed by general practitioners.<sup>4</sup>

The Portsmouth tonsillitis protocol, first published in 2013,<sup>5</sup> suggests a treatment algorithm for patients presenting to hospitals with tonsillitis (Figure 1). Their results showed a reduction by more than half of their admission rate and more than half the length of in-patient stay for admitted patients. The protocol advocates aggressive, early treatment with intravenous antibiotics, steroids, analgesics and fluids, followed by prompt (at 2 hours) review to re-assess the patient and consider sending them home.

This approach has been validated by Harris and Ashman<sup>6</sup> who demonstrated a 42 per cent early discharge rate in patients treated with a similar protocol, with zero

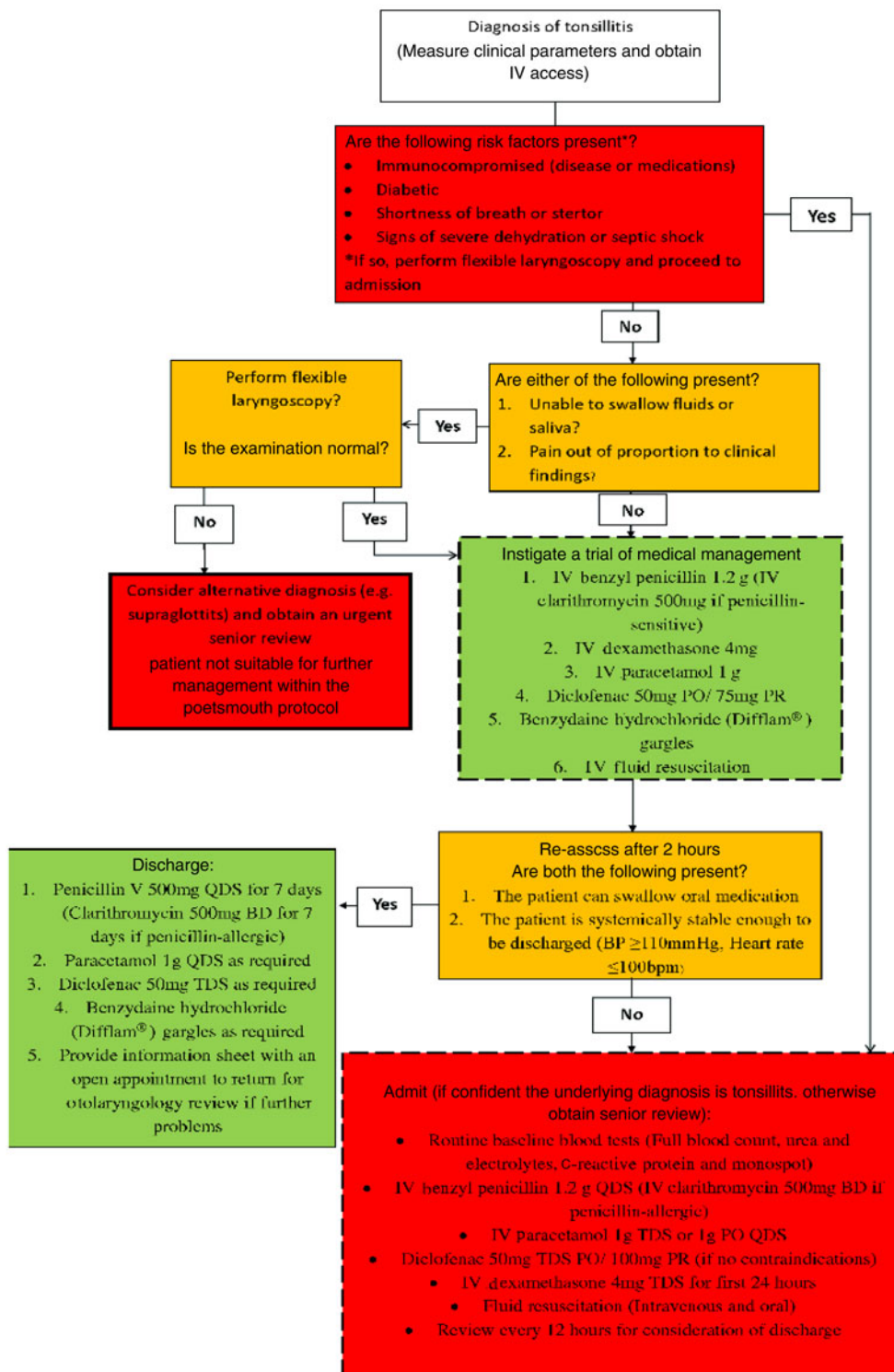


Fig. 1. The Portsmouth tonsillitis protocol. Reproduced with permission.<sup>5</sup> IV=intravenous; PO=per oral; PR=per rectum; BP = blood pressure; bpm = beats per minute; QDS = four times daily; BD = twice daily; TDS = three times daily

re-admissions. Perkins *et al.*<sup>7</sup> also showed similar results with their protocol, halving the length of admission and more than halving the admission rate. Larger studies have similarly demonstrated a decrease in admission rate with the introduction of an ambulant management pathway.<sup>8</sup>

One of the benefits of the Portsmouth tonsillitis protocol is that it does not require any specialist procedures or interventions, and could possibly be offered in an ambulatory care setting if resources allowed. This would be particularly beneficial in the current environment where we are trying to limit the

mixing of patients potentially at risk of Covid-19 with those not at risk. Tonsillitis patients could potentially be kept in separate (out-patient or ambulatory) parts of the hospital, and away from ENT wards. ENT wards, with nurses experienced in tracheostomy management, may soon become a critical resource that needs to be managed appropriately.

Current ENT UK guidance in the context of Covid-19 advocates starting treatment based on history alone (as relevant examination is potentially aerosol-generating). Should examination be necessary, personal protective equipment,

including a filtering facepiece code 3 (FFP3) or equivalent mask, should be worn.<sup>9</sup> A similar treatment strategy to the Portsmouth tonsillitis protocol is suggested, with intravenous antibiotics, intravenous steroids and fluid resuscitation, but they also advise testing these patients for Covid-19, as is now standard practice across the UK for all potential hospital admissions. After 3–4 hours of observation, if the patient is able to tolerate oral intake, discharge home is advised.

### Peritonsillar abscess

These patients are more usually managed as in-patients in the UK, as they can be more unwell than those with ‘uncomplicated’ tonsillitis (e.g. significant odynophagia, trismus and high temperatures).<sup>8,10</sup> However, out-patient management pathways exist for these patients; these were initially developed overseas,<sup>11,12</sup> but later applied to UK populations.<sup>13,14</sup> Some evidence suggests that as few as 12 per cent of patients who have successful needle aspiration of pus require in-patient admission.<sup>15</sup>

Peritonsillar abscess patients present more challenges than patients with uncomplicated tonsillitis for many reasons. The former patients are often more unwell and more in need of resuscitation because of dehydration. However, once a diagnosis of quinsy is made, and pus has been released by whatever method (discussed below), treatment is essentially the same as for tonsillitis: intravenous antibiotics, steroids, analgesics and fluid resuscitation. The above studies all demonstrate that if patients are able to swallow after aspiration, then discharging them with oral antibiotics and appropriate safety-netting advice is a robust, evidence-based management plan.

The critical difference in management is the need for a more specialist intervention (i.e. drainage of pus). Most centres advocate the use of needle aspiration of any collection, although an incision and drainage procedure has comparable results.<sup>13</sup> Most junior ENT team members are more comfortable with needle aspiration, and it is a more commonly performed technique that is well tolerated by patients.<sup>10</sup> This is something that could easily be performed in an ambulatory setting, away from emergency departments. The individuals can then be managed as out-patients with careful safety netting, on the proviso that they are more likely to require admission because of swallowing difficulties than uncomplicated tonsillitis patients.

These pathways universally recommend confirming the diagnosis of quinsy with the aspiration of pus. If attempted aspiration is unsuccessful, further attempts are possible, or incision and drainage can be considered. Naturally, imaging should be contemplated for recalcitrant cases, or if an alternative diagnosis such as a parapharyngeal abscess or malignancy is suspected.

### Epistaxis

Epistaxis is the most common reason for referral to ENT specialists in the UK, with about 25 000 acute presentations to NHS hospitals a year.<sup>16</sup> Over 90 per cent of bleeding is from the anterior part of the nose (most commonly Little’s area), with the remaining 10 per cent being posterior bleeds, which are more likely to require hospitalisation.<sup>17</sup>

Epistaxis patients should not be underestimated by ENT teams – patients with significant epistaxis are often elderly, frail, co-morbid and taking one or more antiplatelet or

anticoagulant medications, and can be a challenge to manage effectively. The UK national epistaxis audit suggests that 51 per cent of patients presenting to hospital with epistaxis are on anticoagulants or antiplatelet medications, and the median age of epistaxis patients is 73 years (interquartile range, 62–82).<sup>16</sup> Patients on anti-thrombotic medication also take longer to achieve successful haemostasis and to safely discharge than those not on medication.

First-line treatment for epistaxis remains ‘gold standard’ first aid.<sup>18</sup> This involves sitting the patient upright and applying firm pressure on the fleshy part of the nose for at least 20 minutes, while keeping the patient calm (to minimise hypertension). Patients are advised to spit out any blood (as it is emetogenic and vomiting would increase blood pressure).<sup>18</sup>

If first aid measures fail, topical treatment such as cauterisation (e.g. with silver nitrate) or application of topical vasoconstrictors (e.g. adrenaline-soaked cotton wool) is second-line treatment. Cautery is effective and safe, but it requires relative haemostasis, as active bleeding will wash the silver nitrate away. The cauterisation of large areas or bilateral parts of the septum is not advised given the risk of necrosis and perforation.

Rapid Rhino™ nasal tamponades have altered the management of epistaxis since their introduction.<sup>19,20</sup> They are comparatively well tolerated by patients, and easier to apply than previous methods of anterior and posterior nasal packing. Their ease of use has some drawbacks though; notably, non-specialists can pack a nose prior to referral to the ENT department. This makes discharging patients more difficult, as the pack traumatises the nasal mucosa, and makes identification of a bleeding point more complex. Many ENT units advocate leaving packs in situ for 24–48 hours after insertion, to allow the mucosa to heal and ensure haemostasis is secure. Some centres commence the patient on prophylactic antibiotics to mitigate the risk of toxic shock syndrome in these patients, although evidence is lacking.<sup>21</sup>

Evidence suggests that the majority of re-bleeding occurs less than 4 hours after pack removal.<sup>16</sup> Therefore, for select patients (e.g. presenting in the morning, with appropriate home support), there may be a role for ambulatory observation of these patients after pack removal and topical treatment by an ENT specialist. This does not necessarily have to be on a ward; a ‘short stay’ unit or other ambulatory care setting would be appropriate for some of these patients. Depending on local provision and service requirements, direct or early referral to ENT by the emergency department for patients with epistaxis could be considered, allowing early specialist topical intervention and hopefully, with that, a lower admission rate.

Some groups of patients may not be suitable for packing because of absolute or relative contraindications. These might include patients with very low platelet counts, base of skull fractures or hereditary haemorrhagic telangiectasia, or patient refusal. Floseal® may be useful in such cases.

Floseal is a haemostatic agent (thrombin and a gelatine matrix). It has been used in the primary management of epistaxis patients when conservative measures such as direct pressure and cauterisation have failed.<sup>22</sup> These researchers demonstrated a success rate of Floseal of 90 per cent, and the mean length of hospital stay for these patients was 2.75 hours. They also reported high levels of patient satisfaction with Floseal over packing. The researchers reported treatment success after pack removal in patients who had been packed prior to specialist review. In the haemorrhagic telangiectasia population, Floseal has been used in the domiciliary setting, with success

at reducing admissions and high patient satisfaction.<sup>23</sup> In that study, Floseal was applied by patients or family members after receiving appropriate training, suggesting that high levels of expertise are not required for it to be effective. Floseal does come with cost implications (approximately £100 per unit),<sup>22</sup> but this compares favourably with the cost of an overnight admission to hospital (approximately £220 per night at least).<sup>24</sup>

Adjuncts and alternatives to packing other than Floseal are also available. For example, topical and systemic tranexamic acid is used in select patient groups.<sup>16</sup> The national epistaxis audit found that tranexamic acid use was associated with longer haemostasis times and high re-bleeding rates, but it was being used in patients who were more unwell, and this may represent a confounding factor.<sup>16</sup> Use of topical tranexamic acid has been shown to reduce length of stay in emergency departments and decrease re-presentation rates, and it gives higher patient satisfaction rates than standard care.<sup>25–27</sup> Support for systemic tranexamic acid in epistaxis cases is more equivocal, but there is some evidence to support its use in select cases to reduce re-bleeding rates (e.g. in haemorrhagic telangiectasia), and there is no convincing evidence of adverse events when used for epistaxis.<sup>27,28</sup>

Other topical haemostatic agents, such as microporous polysaccharide hemospheres (e.g. Arista™ absorbable haemostatic powder), are licensed to control bleeding in certain surgical settings.<sup>29</sup> However, good quality randomised, controlled trials have not been conducted for these products in the context of epistaxis, and any use in this context would be ‘off licence’. It is notable that their use is not described in the national epistaxis audit,<sup>16</sup> and the British Rhinological Society multidisciplinary consensus document describes a paucity of quality evidence for these products at this time.<sup>30</sup> As such, we cannot make any recommendations as to their use.

Current ENT UK guidance in the context of Covid-19 advocates the stepwise approach described above,<sup>31</sup> but only favours admission if the patient has required bilateral packing, has significant medical co-morbidities or if surgical intervention may be required. Patients whose bleeding is controlled with unilateral packing and without significant co-morbidities can be safely discharged and reviewed by the ENT department the following day.

The authors are unaware of any published protocols for out-patient epistaxis management prior to the Covid-19 pandemic. This is probably because these patients can be complex with co-morbidities, and are often older and lack support at home to facilitate discharge. If epistaxis is appropriately controlled with topical methods, then discharge home should clearly be the goal.

The pros and cons of packing are discussed above. Once a patient was packed, a period of observation in a ward setting was the current standard of care in the UK.<sup>16</sup> The national epistaxis audit concluded that removing packs at the initial ENT review was a reasonable strategy in selected patients,<sup>16</sup> and did not significantly increase the length of hospital stay or re-admission rates.

While the British Rhinological Society acknowledge that there are no nationally agreed guidelines on the management of epistaxis, their multidisciplinary consensus recommendations are supportive of the stepwise approach to epistaxis management detailed above.<sup>30</sup> The British Rhinological Society document also accepts that many of its recommendations are made with weak evidence, and innovative approaches generating new evidence should be encouraged.

Now is an excellent opportunity for innovation in the health system, with most ENT departments working in entirely different ways to before the Covid-19 pandemic. The management of acute epistaxis is one example of a condition where safe discharge is possible, but new protocols and evidence would be welcomed.

## Conclusion

The NHS is under significant burden in light of the impact of Covid-19. Appropriate admission avoidance with low re-admission rates is ideal in the current climate. Not only is it potentially cost-saving, it also minimises patient and clinician exposure. In select cases (as discussed above), tonsillitis, quinsy and epistaxis patients can be safely managed out of hospital, with low re-admission rates. While the Covid-19 pandemic has emphasised the benefits of appropriate admission avoidance, clearly the benefits will not stop once the burden has passed. The challenges currently facing the healthcare service can potentially be an opportunity to embrace new ways of working that still have a good evidence base to support them.

**Acknowledgement.** The authors would like to thank the library services of University Hospitals Birmingham for their assistance in performing the literature search.

**Competing interests.** None declared

## References

- Royal College of Surgeons of England. Updated General Surgery Guidance on COVID-19. In: <https://www.rcseng.ac.uk/coronavirus/joint-guidance-for-surgeons-v2/> [11 February 2021]
- ENT UK. ENTUK Guidelines for changes in ENT during COVID-19 pandemic. In: <https://www.entuk.org/entuk-guidelines-changes-ent-during-covid-19-pandemic> [7 July 2020]
- Purdy S. *Avoiding Hospital Admissions: What Does the Research Say?* London: Kings Fund, 2010
- Millington AJ, Phillips JS. Current trends in tonsillitis and tonsillectomy. *Ann R Coll Surg Engl* 2014;**96**:586–9
- Bird JH, Biggs TC, Schulz C, Lower N, Faris C, Repanos C. Implementation of an evidence-based acute tonsillitis protocol: our experience in one hundred and twenty-six patients. *Clin Otolaryngol* 2013;**38**:410–15
- Harris R, Ashman A. Outpatient management of patients with acute tonsillitis and peritonsillar abscess in ninety adult patients. *Clin Otolaryngol* 2017;**42**:720–3
- Perkins C, Ray Brown F, Pohl K, McLaren O, Powles J, Thorley R. Implementing a guideline for acute tonsillitis using an ambulatory medical unit. *J Laryngol Otol* 2019;**133**:386–9
- Mohammed H, Jin X, Masterson L, Wickstead M. Ambulant management of acute tonsillitis in adult patients, a study on 330 patients. *Clin Otolaryngol* 2017;**42**:897–901
- ENT UK. ENT UK COVID-19 Adult Tonsillitis & Quinsy Guidelines. In: <https://www.entuk.org/sites/default/files/ENT%20UK%20COVID-19%20Tonsillitis%20%26%20Quinsy%20Guidelines%20FINAL.pdf> [17 July 2020]
- Al Yaghchi C, Cruise A, Kapoor K, Singh K, Harcourt J. Out-patient management of patients with a peritonsillar abscess. *Clin Otolaryngol* 2008;**33**:52–5
- Garas G, Ifeacho S, Cetto R, Arora A, Tolley N. Prospective audit on the outpatient management of patients with a peritonsillar abscess: closing the loop, how we do it. *Clin Otolaryngol* 2011;**36**:174–9
- Mehanna HM, Al-Bahnasawi L, White A. National audit of the management of peritonsillar abscess. *Postgrad Med J* 2002;**78**:545–8
- Herzon FS. Peritonsillar abscess: incidence, current management practices and a proposal for treatment guidelines. *Laryngoscope* 1995;**105**:1–17
- Stringer SP, Schaefer SD, Close LG. A randomised trial for outpatient management of peritonsillar abscess. *Arch Otolaryngol Head Neck Surg* 1988;**114**:296–8



- 15 Ophir D, Bawnik J, Poria Y, Porat M, Marshak G. Peritonsillar abscess. A prospective evaluation of outpatient management by needle aspiration. *Arch Otolaryngol Head Neck Surg* 1988;**114**:661–3
- 16 National ENT Trainee Research Network. Epistaxis 2016: national audit of management. *J Laryngol Otol* 2016;**131**:1131–41
- 17 Womack JP, Kropp J, Stabile MJ. Epistaxis: outpatient management. *Am Fam Physician* 2018;**98**:240–5
- 18 Tunkell DE, Anne S, Payne SC, Ishman SL, Rosenfeld RM, Abramson PJ *et al*. Clinical Practice Guideline: Nosebleed (Epistaxis) Executive Summary. *Otolaryngol Head Neck Surg* 2020;**162**:8–25
- 19 Moumoulidis I, Draper M, Patel H, Jani P, Price T. A prospective randomised controlled trial comparing Merocel and Rapid Rhino nasal tampons in the treatment of epistaxis. *Eur Arch Otorhinolaryngol* 2006;**263**:719–22
- 20 Iqbal IZ, Jones GH, Dawe N, Mamais C, Smith ME, Williams RJ *et al*. Intranasal packs and haemostatic agents for the management of adult epistaxis: systematic review. *J Laryngol Otol* 2017;**131**:1065–92
- 21 Lange JL, Peeden EH, Stringer SP. Are prophylactic systemic antibiotics necessary with nasal packing? A systematic review. *Am J Rhinol Allergy* 2017;**31**:240–7
- 22 Wakelam OC, Dimitriadis PA, Stephens J. The use of FloSeal haemostatic sealant in the management of epistaxis: a prospective clinical study and literature review. *Ann R Coll Surg Engl* 2017;**99**:28–30
- 23 Warner L, Halliday J, James K, de Carpentier J. Domiciliary floseal prevents admission for epistaxis in hereditary hemorrhagic telangiectasia. *Laryngoscope* 2014;**124**:2238–40
- 24 NICE. Costing statement: Implementing the NICE guideline on transition between inpatient hospital settings and community or care home settings for adults with social care needs (NG27). In: <https://www.nice.org.uk/guidance/ng27/resources/costing-statement-2187244909> [17 July 2020]
- 25 Gottlieb M, DeMott JM, Peksa GD. Topical tranexamic acid for the treatment of acute epistaxis: a systematic review and meta-analysis. *Ann Pharmacother* 2018;**53**:652–7
- 26 Zahed R, Jazayeri MHM, Naderi A, Naderpour Z, Saeedi M. Topical tranexamic acid compared with anterior nasal packing for treatment of epistaxis in patients taking antiplatelet drugs: randomized controlled trial. *Acad Emerg Med* 2018;**25**:261–6
- 27 Kamhieh Y, Fox H. Tranexamic acid in epistaxis: a systematic review. *Clin Otolaryngol* 2016;**41**:771–6
- 28 Geisthoff UW, Seyfert UT, Kübler M, Bieg B, Plinkert PK, König J. Treatment of epistaxis in hereditary hemorrhagic telangiectasia with tranexamic acid - a double-blind placebo-controlled cross-over phase IIIB study. *Thromb Res* 2014;**134**:565–71
- 29 Bruckner BA, Blau LN, Rodriguez L, Suarez EE, Ngo UQ, Reardon MJ *et al*. Microporous polysaccharide hemosphere absorbable hemostat use in cardiothoracic surgical procedures. *J Cardiothorac Surg* 2014;**9**:134
- 30 National ENT Trainee Research Network. The British Rhinological Society multidisciplinary consensus recommendations on the hospital management of epistaxis. *J Laryngol Otol* 2017;**131**:1142–56
- 31 ENT UK. COVID-19 Epistaxis Management. In: <https://www.entuk.org/sites/default/files/files/COVID%2019%20Epistaxis%20Management.pdf> [7 July 2020]