CASE REPORT

Aspiration of Nasopore nasal packing

Jonathan Smith, Ekambar Reddy

Department of ENT, Craigavon Hospital, Southern Health and Social Care Trust, Portadown, Northern Ireland, UK

Correspondence to
Dr Jonathan Smith,
jgsmith@outlook.com

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SUMMARY

We present a case of postoperative Nasopore aspiration in an otherwise fit and well 11-year-old. An endoscopic adenoidectomy had been performed without incident and Nasopore packing placed into each nasal cavity. Immediately after extubation, there was marked hypoxia, tachypnoea and high clinical suspicion of pack aspiration. The patient returned to theatre for emergency rigid bronchoscopy and retrieval of nasal packing.

BACKGROUND

This case highlights the potential dangers of nasal packing, particularly those that dissolve spontaneously and lack an external thread. It is important to consider the type of packing used, along with relevant indications, rather than use it on a routine basis. This is a pertinent patient safety point and may be useful in guiding other clinicians in future choices regarding nasal packing.

CASE PRESENTATION

A healthy 11-year-old was admitted electively for endoscopic adenoidectomy to the local district general hospital. The patient had a surgical history of adenotonsillectomy and grommet insertion, but no medical history of note. Previous anaesthetics were administered without incident. The patient was again anaesthetised without concern and endoscopic adenoidectomy was performed successfully using a microdebrider. This was largely due to unusual findings with the residual adenoid tissue found predominantly in the choanae and arising from the roof of the postnasal space rather than the posterior wall. After debridement, a full 4 cm piece of Nasopore was placed in the posterior part of nasal cavity between the inferior turbinate and septum on each side, slightly protruding into the choana and nasopharynx.

The patient was then transferred to recovery where, on extubation, was noted to have a rattly chest and tachypnoea. Saturations dropped to 86% despite the use of a Mapleson C-circuit and face mask, and auscultation of the chest revealed a marked reduction in breath sounds on the right side of the chest. Nasendoscopy was performed, and despite the left Nasopore packing being visible, the right-sided packing had seemingly dislodged. There was high clinical suspicion of aspiration of the Nasopore packing.

TREATMENT

The patient was therefore returned to theatre for an emergency rigid bronchoscopy. Nasopore packing was found lodged in the right main bronchus and

was removed with suction as it was already disintegrating. The patient was recovered and discharged later that day with no long lasting complications.

DISCUSSION

The use of nasal packing is an important component in a variety of nasal procedures, including septoplasty and functional endoscopic sinus surgery. It can offer numerous benefits to the patient, including minimising the risk nasal adhesions and providing a tamponade effect on bleeding points.¹

Nasopore has been used by this surgeon in numerous other nasal surgeries without incident. In a septoplasty, for instance, a 4 cm piece is standard, and for trimming of the inferior turbinates, 8 cm is used for each side. After functional endoscopic sinus surgery (FESS), 2 cm pieces can be placed in the middle meatus and/or sphenoethmoid recess as required. There have not been any reported dislodgements of Nasopore packing in this unit to date, but it is possible some patients could have swallowed disintegrating bits of Nasopore and this may have gone unreported, if noticed at all by the patient.

Nasopore itself is a biosynthetic biodegradable polyurethane foam with a hydrophilic component that can adapt to the shape of the nasal cavity.² These chemical properties give it a high compressive strength and also encourage moisture absorption and subsequent fragmentation.³ This importantly means that it does not require removal and may improve quality of life in the immediate postoperative phase.⁴ Studies suggest it can reduce levels of pack associated discomfort.³ It does however rely solely on local adhesion through moisture contact to secure it in place, and there is no external thread that may be used to secure it or prevent it from becoming dislodged.

The aspiration of nasal packing is itself a rarely reported event with only one fully documented case found in the literature. This involved an unsecured antibiotic soaked gauze in a patient with a medical history of Alzheimers disease and the authors recommended that unsecured packing should be used in caution in patients with neurodegenerative disorders or reduced levels of consciousness.⁵ This highlights the potential mechanism of morbidity in the above case, with reduced levels of consciousness in the early postoperative phase possibly contributing to aspiration of the nasal pack.⁶ The process of anaesthesia itself has also been recognised as increasing the chance of aspiration.⁷ This may be even more relevant in nasal surgeries, given the common use of topical lignocaine, leading to reduced pharyngeal sensation. Additionally,

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relaxation of the upper airway musculature⁸ along with the possibility of an induced cough⁹ may also be a factor. Patient's age must also be considered.

This case highlights the importance of good postoperative clinical care and also reinforces the need for timely access to emergency resources in case of unexpected events. It has been noted that accepted standards for intraoperative nasal packing are lacking, and therefore it is wise to consider the risks and benefits of packing of any sort rather than deploying them on a routine basis.¹⁰ Further thought should also be given to the merit of Nasopore packing, given its lack of external thread. It may be prudent to adopt a cautious approach, particularly in at-risk groups, and in scenarios where it is deemed necessary, an externally securable pack may be a safer option.⁵ Equally, if Nasopore itself is indicated, thought should be given to the size of pack used, as smaller packs logically may be more inclined to remove themselves from the nasal cavity. Such steps may mitigate the risk of further aspiration in future cases.

With hindsight, we recognise that it is not prudent to use Nasopore so far posteriorly in the nose. The clear learning point is that when packing is required in such areas, it would be advisable to use a non-dissolvable pack with an externally securable thread. It is also important to recognise that a high index of

suspicion and early action in the immediate postoperative period rescued both the medical team and patient.

Contributors JS was responsible for collection of the data via notes, interpretation into a start-to-finish case, research of the mechanism of morbidity and of similar cases in the literature and penned the first draft of the case report. ER was the initiator of the case and provided guidance for planning of the case, how to conduct the research while also providing a paper to reference, provided aspects of data interpretation and also gave a thorough critique of the case report with substantial addition to the text prior to admission. Both authors have also given final approval for publication if accepted.

Competing interests None declared.

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Learning points

- The use of nasal packing should be considered on a case by case basis and not used routinely.
- Nasopore packing should only be used in appropriate cases.
- In certain cases, the use of non-dissolvable, securable packs may be a safer option.
- A high index of clinical suspicion is key to early recognition of packing aspiration.

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