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Swallowed nasal pack: a rare but serious complication of the management of epistaxis

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Abstract
Packing of the nose with a suitable material remains a popular method of treating epistaxis. The authors report a serious complication of a new design of nasal pack; Rapid Rhino®, which was swallowed during the treatment of a patient with epistaxis, resulting in bowel perforation.

Key words: Epistaxis; Prostheses & Implants; Intestinal Perforation

Case report

An 81-year-old male was referred to the ENT department with epistaxis. The patient was on warfarin for atrial fibrillation. A nasal pack Rapid Rhino® anterior pack 750 (Figure 1) was inserted into the nasal cavity. As soon as the balloon was inflated with air and before the cuff was taped on the cheek of the agitated patient, the pack disappeared and the patient said that he had swallowed it. The patient had only minor ooze from his right nostril after this event and was subsequently packed with a Merocel® sponge pack and admitted to the hospital.

By late evening of the next day the patient had the clinical signs of peritonitis and a laparotomy was performed. The findings at operation were a small bowel perforation (Figure 2) with a dilated and blood-filled small bowel. The Rapid Rhino® was removed through the perforation in the ileum. The Medical Devices Agency was informed immediately.

Discussion

Different types of nasal packs are in use including ribbon gauze impregnated with bismuth iodoform paraffin paste (BIPP), Alginate wool (Kaltostat®), Merocel® and various balloons (often Foley's catheter[1]). Other nasal balloons in use include Simpson's®, Brighton® and Epistat®.[2] Beck[3] first described the use of nasal balloons in 1917. Nasal packs are associated with a number of complications such as adhesion formation and crusting,[4] toxic shock syndrome, hypoxia, obstructive sleep apnoea (particularly in the elderly)[5] and aspiration of nasal pack[6] but there were no reports of bowel perforation.

An ideal nasal pack should be effective in controlling epistaxis, easy to use, with a minimum risk of aspiration and should be comfortable during both insertion and removal.[7] Rapid Rhino® seemed to match these properties and the pack had been used in this department for several months with promising results before this incident.

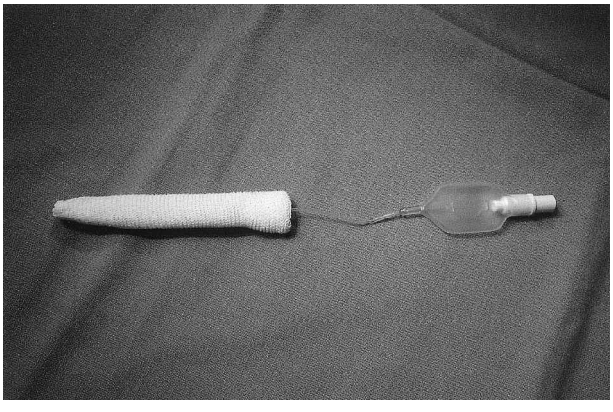

Fig. 1
Rapid Rhino® nasal pack.

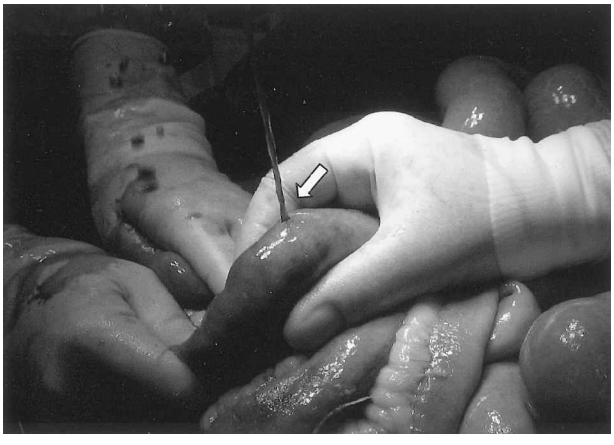

Fig. 2
Peri-operative photograph showing perforation in small bowel.

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Rapid Rhino® as described by the manufacturer (Applied Therapeutics Inc. Florida USA, www.rapid rhino.com) is a single cuffed PVC nasal catheter. A shroud of reinforced weft knitted hydrofibre is put on over the nasal catheter. The fabric, by its design, wicks to form a gel controlling minor bleeding and providing a moist environment, which facilitates ease of placement and removal. The fabric shroud is elastic and able to stretch on inflation of cuff to fill the nasal cavity. A safety cuff (pilot cuff) is located between the inflation leur valve and the nasal catheter (Figure 1) to be inflated by air only. Rapid Rhino® is available in different sizes according to the length of the balloon 45 mm, 55 mm and 75 mm without airway (identified as its catalogue number 450, 550 and 750 respectively). After inflating the cuff it should be taped on the cheek. The nasal pack used in this case was Rapid Rhino® 750.

Considering the cause of this complication it can be assumed that the patient had a large nasal cavity in relation to the size of Rapid Rhino® used. The other possibility is that the amount of air inflated was insufficient. This is assessed only by tactile feedback of the cuff pressure. If the pilot cuff is not appropriately inflated (maximum diameter 2.5 mm on full inflation) and remains small enough then it may slip through the large anterior nasal cavity. Therefore a potential risk of aspiration or ingestion persists if the pack is left in the nose for a second or two unattended.

Conclusion

In the authors' experience the Rapid Rhino® nasal pack was easy to use, comfortable and very effective in controlling most epistaxis. This is a report of an isolated incident with a new medical device but the consequences of this complication were so serious that it is felt that it merits the attention of those who care for patients with the potentially life-threatening problem of epistaxis.

- **This is a case report of the use of a nasal balloon pack in a patient with epistaxis**
- **The pack became dislodged and the patient swallowed it and developed an intestinal perforation**
- **It is not clear whether this mishap was due to the balloon design or to erroneous placement**
- **This case is reported solely due to the significant and serious nature of the complication**

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