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An unusual intranasal foreign body in an unsuspecting 9-year old

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Summary. This report describes the incidental finding and removal of an unusual intranasal foreign body in a 9-year-old boy. The spectrum of items lost and found in the nasal cavity are reviewed before discussing the management of this case. Dental Practitioners should remain vigilant as radiopaque foreign bodies can be identified on commonly taken dental radiographic views. Patients should be referred promptly for foreign body removal in order to minimize potential complications.

Introduction

Inquisitive children often insert foreign bodies into their nose or other body orifices while they explore their own bodies in early childhood. Intranasal foreign bodies have been found in children, most commonly in 2–4-year olds [1]. Placement may be voluntary or accidental, but the problems presented to clinicians are the same.

The range of objects documented as being lost and found is vast. Frequently, such items include toys and toy parts (beads and marbles), food (corn, beans, peas, seeds and chewing gum) and other items such as paper, cotton wool, screws, pencils, rubbers, jewellery, magnets and button batteries [1–5]. Larger objects such as a signet ring [4] and a 5-cm nail [6] have been reported along with the complete intrusion of teeth through the floor of the nasal cavity [7]. Trauma may also result in objects such as glass fragments being forced into the nose [8].

This case report describes a case in which a 9-year-old boy presented with two magnetic ball bearings encased in a friable metal shell lodged in his nose.

Case report

A 9-year-old boy was referred by his General Dental Practitioner to the Child Dental Health Department at Newcastle Dental Hospital in June 2003 for treatment of a number of carious primary teeth. A dental panoramic tomogram (DPT) was taken to assess the caries and developmental status of his dentition prior to organizing multiple extractions under general anaesthesia. Radiographic assessment revealed an incidental finding of a large radiopaque mass present in the floor of the nose (Fig. 1). In order to localize this object, and to eliminate artefactual shadow from the diagnosis, a true lateral view of the maxilla was taken (Fig. 2). A foreign body in the floor of the nasal cavity beneath the inferior turbinate was confirmed.

The foreign body was asymptomatic and no history of voluntary placement or trauma could be elicited from the child or his father. Examination revealed no tenderness over the nasal bridge, no intranasal

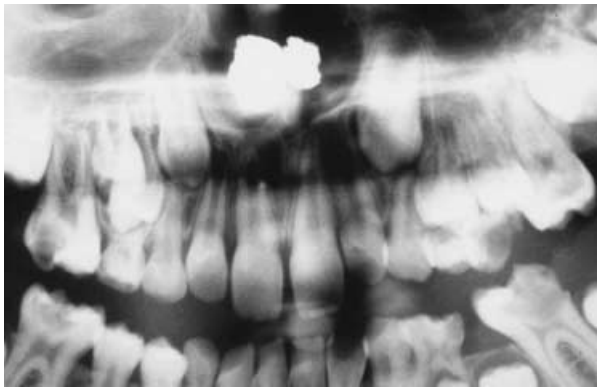

Fig. 1. Dental panoramic tomogram revealing large radiopaque mass in the floor of the nose.

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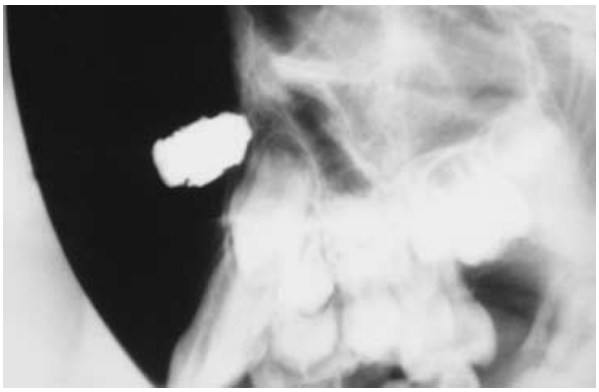

Fig. 2. True lateral view of maxilla confirming foreign body in the floor of the nose.

Fig. 3. Macroscopic appearance of foreign body.

discharge, no saddle deformity and surprisingly no nasal obstruction. The foreign body could be visualized upon inspection of the right nostril but could not be palpated.

Informed consent was given for removal of six carious teeth and also the intranasal foreign body under chairside general anaesthesia. The teeth were extracted without incident. The foreign object was removed using a Mitchell's trimmer (DENTSPLY Ash Instruments, Weybridge, UK). It was noted at operation that the nasal septum had been perforated by the foreign body.

The macroscopic appearance of the object is shown in Fig. 3. Pathological investigation revealed two magnetic ball bearings encased in a friable metal shell.

The patient was reviewed at 2 and 6 weeks postoperatively and the healing status of the nasal septum examined at each visit. At 6 weeks, complete septal continuity had been restored and the patient was discharged. Not surprisingly, he informed us that he could now breath through his nose more easily.

Discussion

This case report documents an unusual foreign body lodged in a child's nose. As this object was asymptomatic, it may never have been found if the dental referral and subsequent radiographic investigations had not been undertaken.

The majority of nasal foreign bodies are asymptomatic [1]. A small minority present with symptoms, including unilateral nasal discharge, nasal obstruction, pain, swelling, congestion or even snoring [1]. Septal haematomas, nasal polyps, nasal abscesses and nasal tumours may also cause unilateral nasal obstruction [1] and should be eliminated from the differential diagnosis.

Radiopaque foreign bodies can be readily localized by taking radiographs in two planes. In this case a true lateral of the maxilla was taken to supplement the conventional DPT. Newly developed reformatting programmes [9] with digital DPT technology will negate the need for a second view, thereby reducing dose exposure. Radiolucent items are more difficult to identify, and their removal is more challenging for the clinician.

Identification of the nasal foreign body in this patient was especially significant. Treatment under general anaesthesia was planned but carried some potential risks. These include dislodgement with possible aspiration of the foreign body and severe epistaxis. Fortunately in this case, no unwanted sequelae were invoked.

Foreign bodies left in the nose can also cause infection, which may present as sinusitis, otitis media, facial cellulitis, epiglottitis and tetanus [1,10–12]. Furthermore, button batteries [5] can cause liquefaction necrosis and subsequent local tissue destruction as a result of leaching of their alkaline contents. In order to prevent complications, referral to a local ENT or Oral and Maxillofacial Unit for prompt removal is advisable. Because the patient's airway is likely to be compromised, removal of foreign bodies in dental practice should be discouraged it is important to avoid forcing objects further into the nasal cavity or uncontrolled dislodgement and potential aspiration.

Orthograde removal through the nose is advocated when objects are in the anterior portion of the nose. This may be accomplished using a Mitchell's trimmer, forceps, hook, Howarth's periosteal elevator (DENTSPLY Ash Instruments, Weybridge, UK), magnets, positive pressure or even glue on the end of a wooden stick [1,13,14]. Foreign bodies in the posterior part of the nose may necessitate retrograde removal through the nasopharynx [6].

Dental Practitioners can play a significant role in the diagnosis of intranasal foreign bodies in children through careful clinical examination and interpretation of dental radiographs. Prompt referral to the appropriate hospital department and subsequent removal is essential to avoid complications. The significance of the vigilant dental professional must not be underestimated.

Acknowledgement

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Résumé. Les enfants curieux insèrent souvent des corps étrangers dans leur nez ou dans d'autres orifices du corps, lorsqu'ils explorent leur propre corps au moment de l'enfance initiale. Des corps étrangers intra-nasaux ont été trouvés chez des enfants, le plus souvent chez les 2–4 ans. Le placement peut être volontaire ou accidentel, mais les problèmes posés au clinicien sont identiques. La liste des objets perdus et trouvés est vaste. Fréquemment, de tels objets comprennent des jouets entiers ou des morceaux de jouets (perles, billes), nourriture (maïs, pois, petits pois, graines et chewing-gums) et d'autres choses telles du papier, coton, des vis, crayons, gommes, bijoux, aimants et piles bouton. Des objets plus volumineux comme une chevalière et un ongle de 5 cm ont été rapportés, de même que l'intrusion complète de dents à travers le plancher des fosses nasales. Il peut également s'agir d'objets tels que des fragments de verre forcés dans le nez. Le cas présenté décrit un garçon de 9 ans qui présentait, encastrés dans son nez, deux éléments magnétiques de roulements à bille enchassés dans un logement friable de métal.

Zusammenfassung. Neugierige Kleinkinder führen häufig Fremdkörper in die Nase oder andere Orifizien ein. Intranasale Fremdkörper werden am häufigsten im Alter von 2–4 Jahren festgestellt. Das Einbringen kann absichtlich oder zufällig erfolgen, die klinischen Folgen sind in beiden Fällen gleich. Die vorgefundenen Objekte decken ein breites Spektrum ab. Häufig sind es Spielzeuge oder Spielzeugteile, Nahrung und andere Dinge wie Papier, Baumwolle, Schrauben, Bleistifte, Radiergummis, Schmuck, Magnete oder Knopfzellen. Größere Objekte wie Siegelring und ein 5 cm Nagel wurden im Zusammenhang mit Zahnintrusionsverletzung und Penetration der Inzisiven in den Nasenboden berichtet. Trauma kann auch durch Glasscherben als Nasenfremdkörper verursacht werden. Im vorliegenden Fall wurde bei einem neunjährigen Jungen ein Fremdkörper bestehend aus zwei magnetischen Kugellagerkugeln in einer brüchigen Metallschale in der Nase lokalisiert.

Resumen. Los niños inquietos a menudo insertan cuerpos extraños en la nariz u otros orificios del cuerpo mientras se exploran el cuerpo en la infancia temprana. Los cuerpos extraños intranasales se han encontrado en niños más frecuentemente de 2–4 años de edad. La colocación puede ser voluntaria o accidental, pero los problemas presentados a los clínicos son los mismos. Es grande la variedad de objetos documentados que han sido perdidos y encontrados. Frecuentemente estos artículos incluyen juguetes y partes de juguetes (cuentas de una cadena y canicas), comida (granos de cereales, judías, guisantes, semillas y goma de mascar) y otros artículos tales como, papel, algodón, tornillos, lápices, gomas, joyas, imanes y botones de pila. Objetos más grandes como un anillo de sello y una uña de 5 cm se han comunicado junto con la completa intrusión de los dientes a través del suelo de la cavidad nasal. El traumatismo puede también producirse en objetos tales como fragmentos de vidrio que han sido forzados en la nariz. El informe de este artículo describe un caso en el que un niño de 9 años se presentó con dos bolas magnéticas unidas y revestidas en un armazón de metal friable alojado en la nariz.

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