International Journal Dental and Medical Sciences Research
Volume 6, Issue 2, Mar - Apr 2024 pp 716-719 www.ijdmsrjournal.com ISSN: 2582-6018

Navigating the Diagnostic Conundrum: Palatal Swelling in an 11-Month-Old Infant

Vritika Singh[1], Nikhil Marwah[2], Reema Sharma[3], Vipul Sharma[4], Riya Bafna[5], Harsha Patni[6]

[1,4,5,6]*Student, Mahatma Gandhi Dental College and Hospital, Jaipur,Rajasthan.*
[2]*Professor and Head, Mahatma Gandhi Dental College and Hospital, Jaipur, Rajasthan.*
[3]*Reader, Mahatma Gandhi Dental College and Hospital, Jaipur, Rajasthan.*
Corresponding Author: Dr.Vritika Singh, , Mahatma Gandhi Dental College and Hospital, Jaipur, Rajasthan

Date of Submission: 28-04-2024 Date of Acceptance: 08-05-2024

ABSTRACT: The case report discusses the presentation, diagnosis, and management of palatal foreign bodies in infants, focusing on an 11-month-old baby girl who presented with a painless swelling in the hard palate and feeding difficulties. Upon examination, a nut shell was found lodged in the palate, requiring prompt removal to prevent aspiration. The report highlights the challenges in diagnosing and managing such cases, emphasizing the importance of thorough evaluation and interdisciplinary collaboration. The discussion covers the prevalence of foreign body aspirations in infants, the risk of complications, and the various removal techniques employed. Overall, the case underscores the significance of timely intervention to ensure optimal outcomes in pediatric patients with palatal lesions.

KEYWORDS: Infant, Palatal swelling, Foreign body, Pediatric Dentistry.

I. INTRODUCTION

Infants have a natural tendency to explore their surroundings by placing objects in their mouths, with smaller items often being ingested and larger ones posing a risk of aspiration into the airway. This behaviour is particularly concerning for children, as they are more prone to ingestion and aspiration incidents. Unfortunately, aspiration represents one of the leading causes of infant deaths.[1]While foreign body ingestion or aspiration is relatively common in infants, palatal foreign bodies present distinct diagnostic and management considerations.

Children under the age of three years account for a significant majority, approximately 73%, of cases involving foreign body aspiration. Among the aspirated objects, nuts, particularly peanuts, constitute approximately one third of the cases. The most severe complication of foreign body aspiration is the complete obstruction of the airway, which can be life-threatening if not promptly addressed. Globular or round food objects, such as hotdogs, grapes, nuts, and candies, are frequently implicated in such incidents due to their shape and size, making them more likely to become lodged in the airway.[2]

This case report aims to document the presentation, diagnosis, and management of palatal foreign bodies in infants, shedding light on the challenges encountered and the strategies employed in clinical practice.

II. CASE REPORT

A 11-month-old baby girl was referred to the Dept of Pediatric and Preventive Dentistry, Mahatma Gandhi Dental College and Hospital with a chief complaint of painless swelling in the hard palate and difficulty in feeding for 10 days. She was a full-term, born to non-consanguineous parents, with no prior hospital admissions. Parents noticed a yellowish swelling over the hard palate. The swelling was sudden in onset and was not associated with fever or any secondary changes. There was no evidence of this swelling at the time of birth and no history of trauma was given by the parents.

Upon oral examination, a smooth, yellowish-colored lesion measuring approximately 20 mm was noted in the midline of the hard palate. (Figure 1) The lesion felt firm to hard upon palpation. Initially, the diagnosis of abscess or cyst was considered based on inspection, but upon further palpation, it did not align with these diagnoses. Other potential differentials included a tumour, Torus Palatinus and an impacted foreign body. Given the uncertainty surrounding the nature of the lesion, further diagnostic evaluation and management were warranted to accurately

International Journal Dental and Medical Sciences Research
Volume 6, Issue 2, Mar - Apr 2024 pp 716-719 www.ijdmsrjournal.com ISSN: 2582-6018

determine the underlying cause and provide appropriate treatment.

Figure 1: Yellowish lesion seen over the hard palate in the midline.

Radiograph was performed to rule out any bony prominence. However, no significant findings were observed. (Figure 2) Typically, a CT scan (Computed Tomography) is recommended under sedation to assess the extent of adhesion of the foreign body, and this was planned in our case as well. However, during the preparation for the CT scan, manipulation caused a reduction in suction around the foreign body, leading to its spontaneous detachment. Immediate measures were taken to prevent aspiration of the foreign body using a high-speed suction device and it was safely retrieved.

Figure 2: IOPAR shows eruption status of maxillary incisors and rules out bony prominence.

Upon examination, the foreign body was identified as a nut shell. The shell exhibited typical characteristics, featuring a hard and rough surface with irregular edges. Its coloration was observed to be a distinctive shade of yellowish-brown, contrasting against the surrounding oral mucosa. These characteristic features confirmed the nature of the foreign object. There was no post-op complications and patient was recalled after 15 days for follow up. (Figure 3)

Figure 3: Fifteen days post-op showing complete healing and no abnormalities on the palate.

III. DISCUSSION

Infants, in their exploratory phase, frequently engage in oral exploration, placing various objects into their mouths. This behaviour predisposes them to the risk of aspiration, where objects may inadvertently enter the airway. While infants may ingest smaller objects, larger items pose a greater risk of aspiration into the respiratory tract. Aspiration incidents are particularly prevalent among children under five years of age and represent one of the leading causes of infant mortality.The majority of foreign body aspirations occur in children under the age of five, with infants younger than one year accounting for 65% of deaths. Children under three years old represent 73% of cases.[3]

The identification of a foreign body lodged in the hard palate is a rare occurrence. A comprehensive literature review revealed only 27 reported cases within the past 41 years. These incidents primarily involved young children, indicating a propensity for oral exploration and inadvertent insertion of foreign objects into the mouth.[4] The range of foreign bodies encountered in these cases varied and included nut shells, a billiard cue tip, clothing buttons, emblems, screw caps, buttons, bhindi and false fingernails.[4-7] One-third of aspirated objects are nuts, especially peanuts. Additionally, fragments of raw carrot, apple, dried beans, popcorn, and seeds such as sunflower or watermelon seeds, as well as small toys or toy parts, are commonly aspirated. The most serious complication of foreign body aspiration is the complete obstruction of the airway.[2]

The concave shape of any object makes it more favourable for adherence to the palate in a similar way to that of a complete upper denture. This shape allows for the formation of a suction effect around the periphery of the object. Furthermore, anatomical differences in the child's palate, combined with feeding actions, habitual tongue positioning, and behaviours such as pacifier use or thumb-sucking, may all contribute to the

attachment and retention of foreign objects to the oral mucosa.[7] With prolonged retention, foreign bodies may lead to mucosal encroachment and eventual growth over them. Extended adherence can result in ulceration of the hard palate and, in severe instances, may even lead to the formation of a palatine fistula.[8,9]

In the reviewed case reports, most incidents involving foreign bodies were discovered incidentally. While obtaining relevant history is crucial for diagnosing palatine masses in children, it can be challenging to do so. In this particular case, the infant exhibited a sudden change in feeding habits, but the parents only examined the oral cavity a day later. The foreign body had undergone superficial dissolution and changed to a yellow color, making it difficult to identify visually.

Conducting a thorough clinical examination is crucial. When inspecting the edges of the lesion, if there is suspicion of a foreign body, it should be removed in a posteroanterior direction. It is advisable to position the patient in a way that minimizes the risk of swallowing or aspiration during the procedure. Typically, placing the child laterally in the parent's lap with the head slightly lowered is recommended.[10]

Over time, if the foreign body persists in the palate, the surrounding mucosa may gradually cover it. Prolonged presence can lead to ulceration of the hard palate due to constant irritation. In severe cases, it may even result in the formation of a palatine fistula, an abnormal opening between the oral and nasal cavities through the hard palate. To prevent such complications, prompt identification and removal of the foreign body are essential. Timely intervention minimizes the risk of tissue damage, ulceration, and fistula formation, preserving the integrity of the palate and preventing further complications.[8,9]

When evaluating a palatal lesion in an infant, it is imperative to include foreign bodies in the list of potential differential diagnoses. Previous cases have highlighted instances where foreign bodies have gone undiagnosed initially, emphasizing the importance of considering this possibility in the diagnostic process.[4] CT imaging, despite its potential risk of radiation exposure, is considered extremely valuable in clearly defining the nature of the lesion and in strategizing the surgical approach. While magnetic resonance imaging offers radiation-free imaging, it typically requires more time and may necessitate general anaesthesia in infants.[3]
In our case, a CT scan was scheduled under sedation to facilitate a more accurate diagnosis.

The primary concern with foreign bodies is the risk of aspiration, which can have fatal consequences. Given the uncertainty of the initial diagnosis and the high risk of aspiration during removal, the decision was made to remove the foreign body under general anaesthesia. Tumors and cysts in the oral cavity are exceedingly rare in infants, further supporting the suspicion of a foreign body in this case.[3]

The surgical removal of the Foreign body typically necessitates general anesthesia with endotracheal intubation to ensure airway protection and prevent accidental aspiration of the foreign body during extraction. Additionally, securing the airway with a throat pack further reduces the risk of aspiration. In some instances, a Heidemann spatula may be employed to delicately separate the foreign body from the underlying mucosa, followed by retrieval using high-speed suction.[10] This method allows for precise and controlled removal, minimizing trauma to the surrounding tissues.

However, in certain cases where the nut shell is easily accessible and not deeply embedded, removal with gentle finger pressure may be considered, particularly with the infant positioned in the sniffing position or positioned laterally in the parent's lap, with his head lightly down to optimize airway patency.[6] Despite this approach, the risk of aspiration remains elevated, underscoring the importance of caution and the preference for general anesthesia to mitigate such risks. Ultimately, the choice of removal technique should be tailored to the specific circumstances of each case, prioritizing patient safety and minimizing potential complications.

IV. CONCLUSION

The case of palatal swelling in an 11-month-old infant presents a diagnostic dilemma, emphasizing the challenges faced in identifying and managing such conditions in pediatric patients. Through careful clinical examination and imaging techniques such as CT, an accurate diagnosis can be achieved, guiding appropriate treatment strategies. In cases of suspected foreign bodies, prompt and careful removal is essential to prevent complications such as aspiration. Overall, this case underscores the importance of thorough evaluation and interdisciplinary collaboration in managing palatal lesions in infants, aiming to ensure optimal outcomes and patient well-being.

REFERENCES

[1]. Strange GR, Ahrens WR, Lelyveld S, Schafermeyer RW. Pediatric Emergency

Medicine. 2nd ed. New York: McGraw-Hill Medical; 2002.

[2]. Kliegman RM. Foreign bodies of the airway. Luren d. Holinger. In: Nelson Textbook of Pediatrics. 19th Ed. Saunders. 2011. p. 1453-4.

[3]. Shruthi M, Kantala SR, Mandali S, Burli P. Unusual hard palate swelling in an infant: A case of impacted pistachio shell. Indian J Case Reports. 2023;9(10):310-311.

[4]. Hussain K, Brown AJ, Chavda D. Case report: foreign body in the palate of an infant. Br Dent J. 2008 Jul 12;205(1):23-5.

[5]. Farhat A, Ravanshad Y, Mohammadzadeh A, Saedi R, Rezai M. Infant Foreign body of hard palate. Ann Clin Case Rep 2022;7:2269.

[6]. Jong A L, Moola F, Kramer D, Forte V. Foreign bodies of the hard palate. Int J Pediatr Otorhinolaryngol 1998; **43:** 27-31.

[7]. Ondik MP, Daw JL. Unusual foreign body of the hard palate in an infant. J Pediatr 2004;144:550.

[8]. Bundy M, Chegini S, Anand P. Paediatric case report: Foreign body mimicking aggressive palatal ulceration. Oral Surg 2017;10:109-11.

[9]. Eshete M, Abate F, Hailu T, Gessesse M, Butali A. Foreign bodies simulating a congenital palatal fistula and vascular anomaly. Case Rep Dent 2015;2015:387092.

[10]. Lada, Šumilin & Ivona, Žužul & Muhaxheri, Granita & Rogulj, Ana & Vidović Juras, Danica & Loncar Brzak, Bozana. (2019). Palatal Foreign Body - A Case Report. Journal of Advances in Medicine and Medical Research. 28. 1-4. 10.9734/ JAMMR/ 2018/ 46656.