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Difficult Airway Management in a Pediatric Patient with Noma Disease

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Abstract

Noma disease (cancrum oris) is bacterial gangrenous necrotizing stomatitis caused by anaerobic microorganisms. The word "noma" comes from the Greek verb "nomein" meaning "to devour", with the rapidly progressing, aggressive "tissue-eating" expression of the disease. Complex dynamic interactions among immune disorders, malnutrition, inadequate oral hygiene, and low socio-economic factors constitute the pathogenesis of Noma [1]. WHO (World Health Organization) officially declared Noma as a public health problem in 1994 [2]. It is frequently seen in sub-Saharan Africa. Noma is mostly seen in children aged 2 - 7 years. It is a rare disease in children that results in gangrenous necrosis of the soft and solid tissues of the lip, cheek, face or mandible. Noma is not a recurrent and contagious disease. It has a severe course, and if it is not detected and treated adequately, 90% of affected children will die within the first two weeks.

Keywords

Editorial Letter

1. Introduction

Children with Noma disease have an increased risk of infections along with lymphatic atrophy and impaired cellular immune responses. This leads to pathogen invasion through the gingival mucosa. Once opportunistic infections occur, progression to Noma disease occurs in several stages. It begins with a simple gingivitis and ends with sequelae such as trismus, feeding difficulties and facial deformity. Surgical reconstructive procedures have become a widely used method to reduce the effects of diseases such as Noma.

Snakebite poisoning is a serious health threat worldwide. It can cause various conditions such as local tissue pain, cellulitis, infection, tissue necrosis, coagulopa-

thy, compartment syndrome, muscle contracture and physical deformities.

Definition of "difficult airway": In this case, "difficult airway" was anticipated due to factors such as inadequate mouth opening (<2 cm), expected high cormack-lehane grade, and also had hypertrophic scar tissue covering the right half of his mouth and lip and his right nostril. The selection of fiberoptic nasal intubation was made in accordance with the difficult airway management protocol recommended.

2. Case Presentation

In our case, the fact that our patient lived in the African region caused a complex picture that led to airway difficulty with Noma Disease, which occurred as a result of snake bite, in addition to nutritional and hygiene deficiency.

Our patient was a 5-year-old, 18 kg boy of a Somali family. As a result of a snake bite 3 months ago, tissue necrosis and hypertrophic scar tissue occurred, including half of the mouth area and nostril (**Figure 1**). Due to the need for reconstruction, he was admitted to the plastic surgery clinic of our hospital. The patient had hypertrophic scar tissue covering the right half of his mouth and lip and his right nostril. Mouth opening was 1 cm. The patient was evaluated as having a difficult airway-difficult intubation.

Consent and ethics committee approval: written informed consent was obtained from the child's parents.

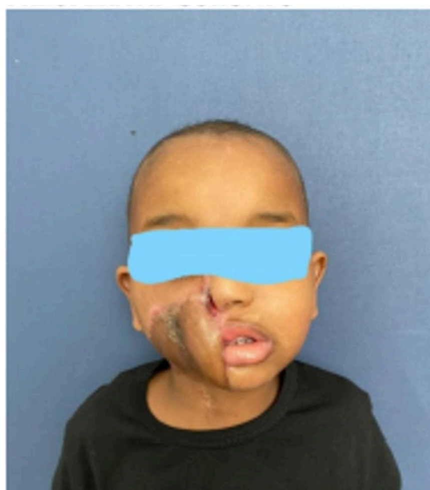

Figure 1. Preoperative image.

3. Anesthetic Management

For this reason, all difficult airway equipment was prepared in the operating room before being put to sleep. Following preoxygenation, anesthesia was induced with lidocaine and propofol, without giving muscle relaxants, to evaluate whether there was a difficult mask. Mask ventilation was comfortable. Since the mask was comfortable, 0.6 mg/kg rocuronium muscle relaxant was given and fiberoptic nasal intubation was performed through the left nostril with a 4.5-spiral tube (**Figure**

2). Anesthesia was maintained with sevoflurane inhalation anesthesia. At the end of the case, the patient was awakened with sugammadex, extubation was performed without any problems and the patient was taken to the service.

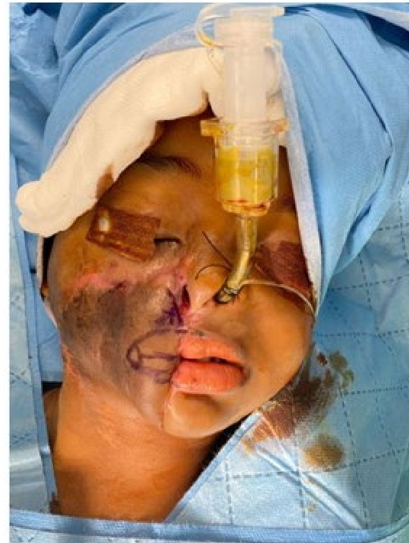

Figure 2. After intubation with Fiberoptic.

4. Discussion

In our case, we encountered a difficult airway caused by the combination of different causes that are not encountered very often. While investigating the etiology of difficult airway through this case, we wanted to emphasize that very rare diseases may occur in Turkey due to health tourism and the pediatric difficult airway algorithm.

We wanted to emphasize the importance of the anesthetist evaluating the differences between the adult airway in pediatric airway management. Preoperative evaluation of the patient must be carried out meticulously, and difficult airway equipment and medications must be prepared in the operating room. Another issue that should be taken into consideration is that the practitioner knows his own limits and requests help at the right time during the procedure.

5. Postoperative Recovery

The patient was transferred to intensive care unit after the surgery. Vital signs remained stable. Pain management was achieved with [pain management methods and medications]. No complications (e.g., infection, bleeding, respiratory distress) were observed. The patient was discharged after [number of days].

6. Clinical Implications

This case highlights the importance of healthcare professionals being prepared and acting with a multidisciplinary approach in situations that lead to rare and complex airway problems, especially in resource-limited areas. The use of tech-

niques such as fiberoptic nasal intubation can play a vital role in the management of such cases.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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