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Case Report

Gingival hyperplasia: anaesthetic implications

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ABSTRACT

Gingival hyperplasia can be divided in four sub categories: Inflammatory, hereditary, drug induced and associated with systemic causes. It can be localized or generalized. Gingival hyperplasia can cause difficulty in swallowing, speech and mastication, delayed dentition and poor aesthetics. Maintenance of oral hygiene plays a major role in all varieties of gum hyperplasia especially in inflammatory types, which poses a great challenge to anaesthesiologists as the gums are friable, tender and prone to bleed. We report successful management of a child posted for gingivectomy under general anaesthesia.

Keywords: Gingival hyperplasia, general anaesthesia, aspiration

INTRODUCTION

Gingival enlargement, also known as gingival hyperplasia or hypertrophy, is an abnormal growth of gingival tissue. The etiology and pathogenesis are not well established. It can be hereditary, acquired, iatrogenic or idiopathic. Hereditary gingival hyperplasia is a rare condition which can occur either in isolated form or associated with syndrome. Acquired causes may be due to inflammatory response to accumulation of plaque on teeth, variety of systemic causes and may be drug induced. Gingival enlargement causes interference with normal mastication, development of speech, difficulty in swallowing and adverse aesthetic challenges.[1]

Poor oral hygiene, difficulty in mastication and swallowing leads to accumulation of plaque further aggravating the disease process. The management options include surgical and non-surgical treatment. Maintenance of oral hygiene is the most important factor, which reduces the severity. Surgery is usually done under local anaesthesia. But in an uncooperative patient, general anaesthesia becomes necessary.

CASE REPORT

We report a case of 13-year-old male child posted for gingivectomy for gingival hyperplasia. The child was a known case of cerebral palsy with mental retardation. As per the history elicited from parents, the child was born at full term gestation by normal vaginal delivery and cried immediately after birth. No history of maternal drug intake during pregnancy. The child was blind and deaf by birth and gave history of bilateral eye surgery at 3 months of age under general anaesthesia. No documents were available regarding the surgical history. The patient had difficulty in swallowing and mastication, associated with bleeding gums. He was poorly nourished, and all the developmental milestones were delayed. On general physical examination, the patient appeared to be mentally retarded, poorly nourished and pale.

On auscultation, bilateral air entry was equal and clear, heart sounds were normal with no murmur. Biochemical Investigations revealed anemia with Hb 8.2 gm%, rest all being normal. The patient was very uncooperative, so airway assessment could not be done. Pediatrician

consultation was done to rule out another congenital anomaly. No other congenital anomaly was present.

The patient was shifted to Pre-Warmed Operation Theatre. All standard monitors were attached. After securing a 20g cannula in dorsum of left hand, intravenous fluid was started. Anaesthesia was induced with 1mcg/kg of fentanyl, 2mg/kg of propofol and 0.1 mg/kg of vecuronium followed by mask ventilation. After achieving adequate plane of anaesthesia (MAC 1%), gentle larygoscopy was done with McIntosh blade 2, protecting the hyperplastic gums with gauge pieces and airway was secured with 6mm cuffed endotracheal tube. The anaesthesia was maintained with 2 % end tidal sevoflurane in 60% nitrous oxide in oxygen and intermittent vecuronium. The child was extubated in deep plane of anesthesia after gentle suctioning. Intraoperative and postoperative period was uneventful.

DISCUSSION

Gingival enlargement can be caused by a variety of factors which can be divided in four categories:

- Inflammatory,
- Medication induced,
- Hereditary gingival fibromatosis,
- Systemic causes.

Collection of food debris and bacteria due to poor oral hygiene leads to accumulation of plaque on teeth which can induce an inflammatory response leading to gingival hyperplasia. In inflammatory gingival hyperplasia, Gums are often soft, edematous, hyperemic or cyanotic, painful and quick to bleed.[2] Medications causing gingival hyperplasia belongs to three categories: anticonvulsants (Phenytoin), immunosuppressant (Cyclosporine A) and calcium channel blockers.[3] Hereditary gingival fibromatosis has autosomal dominant inheritance. It is a rare disease, affecting only one in 750,000 people.[4] It can develop as an isolated disorder or a feature of a syndrome. Systemic causes may include pregnancy, hormonal imbalances and leukemia.

In our case, there was no family history of similar condition and medication history was negative excluding the hereditary and drug induced gingival hyperplasia. Medical history excluded any systemic causes. Most likely cause was poor oral hygiene inducing an inflammatory response. As stated earlier, the gums affected are tender, red and bleed easily.

Challenges in securing a definitive airway were, non-assessment of airway preoperatively as the child was uncooperative, mental retardation and presence of friable gums. As the patient had history of bleeding on swallowing and mastication due to presence of friable gums, even slight pressure due to laryngoscopy could have caused bleeding, so laryngoscopy was done very cautiously with the help of gauze pieces in order to avoid any trauma and bleeding thus preventing the risk of aspiration.

Two other options for securing the airway could be awake fibreoptic intubation or by video laryngoscope. Awake FOB in children needs cooperation and communication with the child for application of topical anaesthesia to the airways.[5] Due to smaller airways in pediatric age group, mucosa can be easily touched leading to difficult visualization.[6] In our case, the child was not cooperative and mentally retarded, so communication was not possible. Awake fibreoptic intubation could not be done as the child was not cooperative and friable gums were prone to bleeding which could have obscured our field making fibreoptic intubation more difficult. Video laryngoscope was not available in our hospital settings. So, we secured the airway successfully with direct laryngoscopy.

CONCLUSION

We hereby conclude that, these types of cases with increased risk of aspiration, can be successfully managed with a good pre-operative evaluation, gentle laryngoscopy, avoiding multiple attempts at laryngoscopy and adequate suctioning.

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