

Nasal alar ecchymosis secondary to nasotracheal intubation in orthognathic surgery – case report

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Abstract

Nasotracheal intubation is most commonly used in oral and maxillofacial surgeries when intermaxillary fixation and in need of maintaining or attaining proper occlusion during the intraoperative procedures. Complications such as epistaxis, turbinectomy, retropharyngeal dissection, nasal pressure sore or necrosis, flaring of ala of nose may occur mainly due to blind insertion of nasotreacheal tube, wrong tube size, manipulation of tube during surgery and prolonged placement of tube in position. Nasal alar ecchymosis is one of the uncommon complications of the orthognathic surgery with nasotracheal intubation, which was managed conservatively with regular followup. Aesthetic complication during an aesthetic surgery is unacceptable by the patients which need extra care and alternatives techniques to avoid such complications.

Keywords: Aesthetic, ecchymosis, nasotracheal, orthognathic, complication.

Introduction

Nasal intubation technique is usually suggested for controlled ventilation and removal of secretions in critically ill and post-operative care patients.^{1,2} In case of cervical spine injuries and reduced mouth opening, fiberoptic intubation is used.³ Nasal intubation technique was explained by Kuhn in 1902 and others who contributed were Macewen, Rosenberg, Meltzer and Auer, and Elsberg. During the World War I, Rowbotham And Magill developed and practiced the technique of ‘blind’ nasal intubation and coined the term. It was popularized by Magill in 1920's.⁴ It is commonly used in dental procedure, maxillofacial surgeries, oropharyngeal and minor otolaryngeal surgeries. Nasotracheal intubation may leads to various complications such as epistaxis, turbinectomy, retropharyngeal dissection, tymphanities, nasal alar pressure sores or necrosis, alar collapse, subglottic stenosis, especially in prolonged nasotracheal intubation.^{5,6,7} Nasal alar

ecchymosis is a localized damage to the skin and underlying soft tissue which occurs post operatively due to compression of nasal alar cartilage for a long period which may leads to pressure sore or necrosis, if not managed adequately. The literature has several studies on complication of nasotracheal intubation but no studies have complications regarding nasal alar ecchymosis. This paper describes the cause of nasal alar ecchymosis following an orthognathic surgery, its management, prevention and alternatives.

Case report

Twenty years old female patient came to department of oral and maxillofacial surgery with complaint of forwardly placed upper front tooth. Prognathic maxilla and esthetic problems since 5years, currently patient was undergoing orthodontic treatment since one and half year in private dental hospital, later came to our department for surgical consultation. She was diagnosed as angle's class II malocclusion with sub division I on class II skeletal base with prognathic maxilla, vertical maxillary excess, prognathic mandible, proclined upper & lower incisors, with vertical growth pattern, for which she underwent Lefort I osteotomy and anterior maxillary osteotomy by 6mm after extraction of premolar bilaterally followed by classical alar cinch suturing. During postoperative period she developed nasal alar ecchymosis (Fig 1).

Examination

On examination, nasal alar ecchymosis which was measuring 1x0.5cm in size, irregular in shape, bluish red in color, non-tender noted over the ala of nose on the right side. There is no increase in size of the ecchymosis and the discoloration persist till the time of discharge. There was decrease in hue of the ecchymosis during follow up after one month and after three months of follow up, it completely disappeared with minimal discolored borders (Fig 2).

Discussion

Nasotracheal intubation is routinely used in oral and maxillofacial surgeries, when orotracheal intubation is not feasible. It is preferred route for prolonged intubation in critical care units. Patients with questionable cervical spine injuries, reduced mouth opening and patients with intraoral mass lesion/ structural abnormality are intubated using awake fiber optic intubation technique. Nasotracheal intubations are absolutely contraindicated in certain cases such as history of previous nasal septal surgery, rhinoplasty⁸, suspected epiglottitis, midface instability, coagulopathy, suspected basal skull fracture and patients with apnea. Tubes used for intubation are available in several materials and come in various designs. These tubes are made of polyvinyl chloride (PVC), rubber, polyurethane or silicone. Complications that occurs due to nasotracheal intubation are divided into two, i.e. intraoperative complications which occurs during the time of surgery and post operative complications which occurs due to prolonged placement of nasotracheal tube to maintain patent airway. In this case prolonged placement of nasotracheal tube for a day postoperatively to maintaining airway after extensive orthognathic surgery with excessive tension with against the nose which compress the ala of nose lead to rupture of minor capillaries, cause seepage of blood into the surrounding tissue (Nasal alar ecchymosis). Simple precautions should be taken to prevent these complications. Use of smaller size nasotracheal tube to prevent excessive pressure on the nose unilaterally. Distal end of the NT tube should not be secured tightly which may cause tension at site of contact of naso-tracheal tube with ala of nose. In order to inspect the external nares at regular intervals, alar junction should not be covered with plasters. We also should not use a delivery tube support to avoid traction on the nose when the patient moves. Use of modified nasotracheal tube in

which direction of the tube angulation is towards the lateral side of the nose which will prevent nasal skin compression and avoid these types of complications.⁹

Submental intubation is an alternative to nasotracheal intubation, can be used for orthognathic surgeries which avoids such complications but complications due to submental intubation also makes surgeons to think before selecting route of anesthesia.¹⁰

Complications such as nasal alar ecchymosis in a aesthetic jaw correction surgery, may affect the patient more psychologically than physiologically. Surgeons who assistant those surgeries, anesthesiologists who post pone's extubation for patent airway and nursing staffs in post operative ICU/ward should pay attention to avoid such complications.

Conclusion

As the reported cases and those in the surgical literature indicate various factors like existing nasal septal defects, route of anesthesia, material , size, pattern, handling during and after the surgery and duration of the NT tube secured for patent airway to be considered to prevent complications like nasal alar ecchymosis, pressure ulcer, necrosis of skin over the nose and deviation of the nose.

Use of modified nasotracheal tube and timely monitoring of nasotracheal tube both intra operatively and post operatively care may avoid these complications.

Prevention is better than cure.

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Legend Figures



Fig 1: shows ecchymosis in right ala of nose on 2nd post operative day



Fig 2: shows reduced ecchymosis in right ala of nose on 3rd month postoperatively