

## Proboscis Nose (Giant Rhinophyma): Challenges to Facemask Fit and Bag Ventilation

Sandhu HS<sup>1</sup>, Tripathi M<sup>1\*</sup>, Agarwal A<sup>1</sup> and Tripathi N<sup>2</sup>

<sup>1</sup>Department of Anaesthesiology, All India Institute of Medical Sciences-RISH, Rishikesh, India

<sup>2</sup>Internist, KGMU, Lucknow, India

\*Corresponding author: Mukesh Tripathi, Professor and Head, Department of Anaesthesiology, All India Institute of Medical Sciences, Virbhadra, Rishikesh, Uttarakhand, India, Tel: 00919917119333; E-mail: [mukesh\\_tripathi@yahoo.com](mailto:mukesh_tripathi@yahoo.com)

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### Abstract

Rhinophyma is painless benign swelling due to hypertrophy of the sebaceous gland of the face and nose in particular. In a neglected case, it presented as 'Proboscis-nose'. As it was hanging in front of nose it was compromising breathing ability of the patient during sleep. It was posing difficulty in placing normal size anatomical face-mask. We placed naso-pharyngeal airway under local anesthesia to retain nasal patency and largest size facemask (size-5) in a manner that its air filled cushion was kept deflated and wide mandibular arch was placed nasally to encase the swelling inside mask and then cushion was inflated to make it air tight fit on face. This helped us to get airtight fitting of the anatomical face mask and through nasopharyngeal airway allowed ventilation of the lungs during induction of general anesthesia before intubation. Rest of management and orotracheal intubation was achieved uneventful. We suggest use of nasal and oropharyngeal air way use and reverse uses of large facemask to attain bag-mask ventilation during induction of anesthesia in such cases.

**Keywords:** Rhinophyma; Proboscis nose; Face-mask; Bag and mask ventilation; General anesthesia; Airway

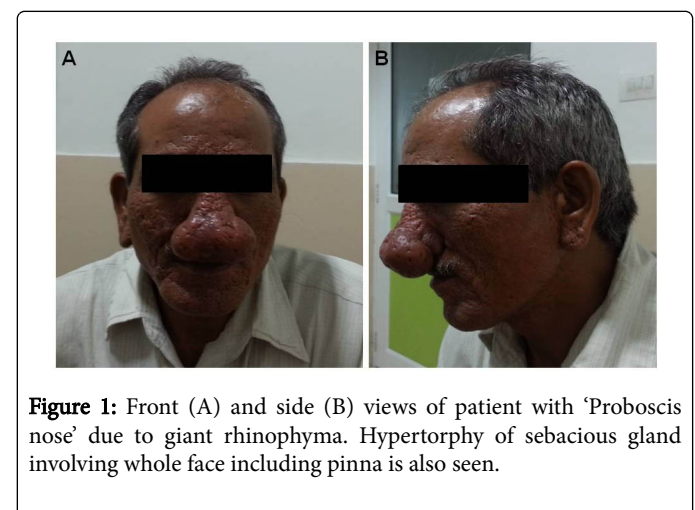
### Introduction

Ventilation of patient using facemask is a basic skill to provide goals of pre-oxygenation and improve apnoea tolerance during endotracheal intubation [1]. The ability to achieve adequate mask seal is thus a significant first step in difficult airway algorithm [2]. Any tumour [3,4], or deformity [5], or injury on the face [6] will impose difficulty in obtaining airtight mask seal for bag-mask ventilation. We would like to share our experience of such a situation in patient with 'Proboscis-nose' due to a giant rhinophyma hanging in front of nares.

### Case Report

A 48 year male patient (body weight-62 kg, height-161 cm) presented accelerated increase in size of swelling at the tip of nose since last eight to nine months. The informed written consent was obtained from the patient for publishing images with adequate measure to obscure the identity. The swelling started a pea sized and grew up gradually to cover entire nasolabial fold and was hanging to lay in front nares 'Proboscis-nose' (Figures 1A and 1B). The swelling was painless and the gently lifting it upward revealed that the nares were clear from any infiltration by the swelling (Figure 2A). It was attached with upper and lateral surface of the nose by a wide (2 x 2 cm) base. The patient also complained of difficulty in breathing through nose on lying down. The past medical and surgical history was insignificant. His personal history revealed that he was chronic tobacco smoker and consumed alcohol too. The family history was negative for any such disease in either siblings or parents. He was diagnosed to have giant rhinophyma with generalized hypertrophied sebaceous

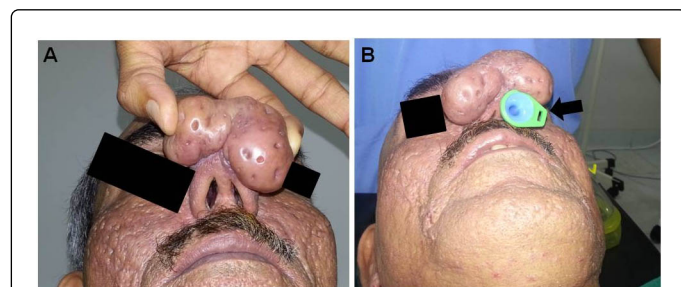
glands all over the face. Routine blood investigation revealed haemoglobin of 15 gm%.



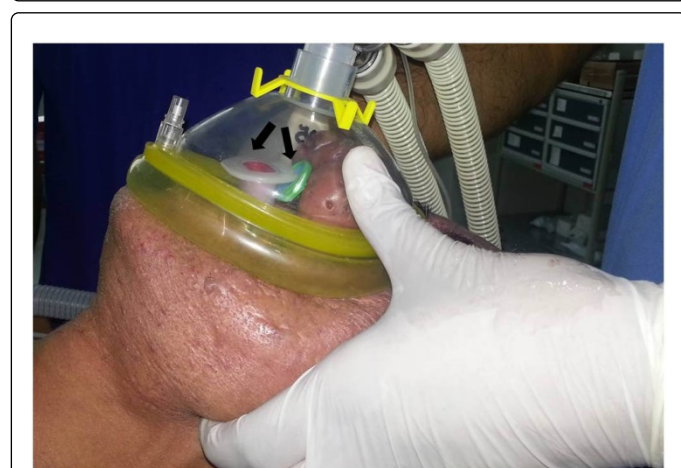
**Figure 1:** Front (A) and side (B) views of patient with 'Proboscis nose' due to giant rhinophyma. Hypertrophy of sebaceous gland involving whole face including pinna is also seen.

In airway assessment we observed mouth opening 3 cm, Mallampati grade-2, normal neck mobility and patent naso-pharynx. Our primary approach was to ensure adequate airtight fit facemask to ensure bag-mask ventilation. We first decongested patient's nasopharynx with topical oxymetazoline hydrochloride 0.05% solution. Lignocaine 2% topical gel was used to anaesthetise nares before introduction of size 7 nasal airway under local anesthesia (Figure 2B). After ensuring nasal patency a transparent disposable facemask-size 5 (Venticaire®, Flexicare Medical Ltd.) was deflated and was kept in reverse orientation with wider mandibular end on the nasal side to totally encase the swelling inside the mask (Figure 3). The air cushion of facemask was then re-inflated with 140 ml of air to ensure adequate

mask seal. We preoxygenated the patient for 3 min with 100% oxygen at flow 6 litres/min.



**Figure 2:** A) Painless swelling sparing nares, when lifted up showing patent normal nares; (B) black arrow marked nasopharyngeal airway in place from the left nares placed under local anesthesia.



**Figure 3:** Placement of facemask with nasal curvature on mandibular side helped to encase the nasal swelling inside mask inside wider mandibular curvatures. Black arrows marking nasal and oropharyngeal airways.

We gave intravenous fentanyl (2 µg/kg) followed by intravenous slow injection of propofol (1.5 mg/kg). We placed oropharyngeal airway also during propofol apnoea (Figure 3). After confirming patency of airway for assisted bag mask ventilation with airtight mask fitting, vecuronium bromide (0.1 mg/kg) was given. We ventilated both the lungs by bag and mask technique for next three minutes to ensure adequate muscle relaxation. The patency of the airway and ventilation during bag-mask ventilation was monitored by ensuring typical square wave capnograph using side-stream capnography placed near patient end. We performed endotracheal intubation under direct laryngoscopy using Macintosh curved blade laryngoscope to place 8.5 mm oral endotracheal tube. Anesthesia was maintained using titrated doses of fentanyl and sevoflurane (end expiratory levels of 2%) in oxygen (50%) in nitrous oxide. At the end of surgery, trachea was extubated successfully after reversing the muscle relaxant effect by neostigmine (2.5 mg) and glycopyrrolate (0.5 mg). The post-operative period remained uneventful and patient was discharged on second post-operative day.

## Discussion

Rosacea is a skin condition characterised by facial erythema and hypertrophy of sebaceous glands. Phymatous rosacea is a subtype, most commonly occurring at the tip of the nose (rhinophyma or potato tumour) presenting as thickening and irregular surface nodularities of the skin over nose due to untreated rosacea [7]. It presents a slow growing, pink lobulated painless swelling over tip of nose with superficial vascular dilatation, commonly affecting men past middle age and surgery is undertaken mostly for cosmetic reasons.

American Society of Anaesthesiologists (ASA) defines difficult facemask ventilation as inability to provide adequate ventilation due to inadequate mask seal, excessive gas leak or excessive resistance to ingress or egress of air [2]. Holding facemask may be difficult in presence of facial swelling or deformity particularly in and around the nose and lip as was in our patient. The use of various types and sizes of facemasks [3], and different techniques to achieve adequate mask seal have been reported [4,5]. Our patient large 'Proboscis nose' likely to limit the fitting of the conventional anatomical facemask, but once we could get a good airtight seal with the use of largest size facemask and reverse orientation we could get airtight seal of facemask and unobstructed bag-mask ventilation. After ensuring safe bag-mask ventilation we used vecuronium bromide as relaxant as our patient was for elective surgery and fasting overnight. Succinylcholine could have been used too, but it limits the number of attempts and duration of laryngoscopy and intubation with a battery of side effects associated with its repeated use.

The other options to secure airway for surgery were awake fiberoptic intubation [1], mini-tracheotomy or surgical tracheostomy and supraglottic device. Although awake fiberoptic ventilation could have been a choice for tracheal intubation but unfortunately we had no facility for fiberoptic intubation currently at our institution, hence were handicapped to offer awake intubation. Still, nasal intubation was neither desired nor indicated rather contraindicated considering the site of surgery, being a preferred route for awake intubation. Supraglottic devices could have been used but trachea intubation provides better seal for ventilation prevent aspiration of blood during surgery in and around nose so we preferred oral tracheal intubation.

Since the lesion was benign, painless, did not involve nares, and conventional direct laryngoscopy and intubation was easily possible in the background of Mallampati score 2, mouth opening >3 cm, neck motility and no oropharyngeal obstruction we differed minitracheotomy or surgical tracheostomy but prepared for it as backup plan.

Authors feel that our improvised approach of keeping wider mandibular curvature of the mask on nasal side helped to accommodate nasal swelling and airtight mask fitting on face, the preplaced nasopharyngeal airway and oral airway on induction also helped to ventilate lungs during apnoeic phase of the general anesthesia before intubation.

## Conflicts of Interest

None

## Funding

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