

# Wegeners Granulomatosis and Subglottic Stenosis - A Case Report

Dr. Abhishek Pratap Singh<sup>1</sup>, Dr. Tasneem Dhansura<sup>2</sup>, Dr. Sushil Chauhan<sup>3</sup>

<sup>1</sup>DNB Anaesthesia, Saifee Hospital, Mumbai, Maharashtra, India

<sup>2</sup>Head of the Department of Anaesthesia Saifee Hospital, Mumbai, Maharashtra, India

<sup>3</sup>Consultant Anaesthesiologist Saifee Hospital Mumbai, Maharashtra, India

**Abstract:** *Subglottic stenosis is a rare but life threatening condition and is caused by congenital anomalies, tracheal tumors, trauma, autoimmune disorders like Wegener's granulomatosis, amyloidosis, sarcoidosis etc. Wegener's granulomatosis is a multisystemic disease characterized by foci of necrotizing vasculitis and granuloma formation. Subglottic stenosis is seen in 10-20 % of the cases either as a presenting feature or a late-stage manifestation of the disease. We report a case of 36 year old lady with Wegener's granulomatosis scheduled for bilateral FESS and myringotomy with grommet insertion. Systemic examination was normal except for the presence of bilateral hearing loss. The patient had no symptoms indicating a subglottic stenosis. Following induction, mask ventilation was confirmed and succinylcholine was administered. Intubation was attempted but was unsuccessful. Patient was ventilated by mask until the effect of succinylcholine weaned off. Awake fibre optic intubation was tried and a severe subglottic stenosis was found. The surgery was postponed till further evaluation. The purpose of this report is to discuss and explore a few management strategies when providing general anaesthesia to a patient with subglottic stenosis.*

**Keywords:** Subglottic stenosis, Wegener's granulomatosis, anaesthesia, difficult airway

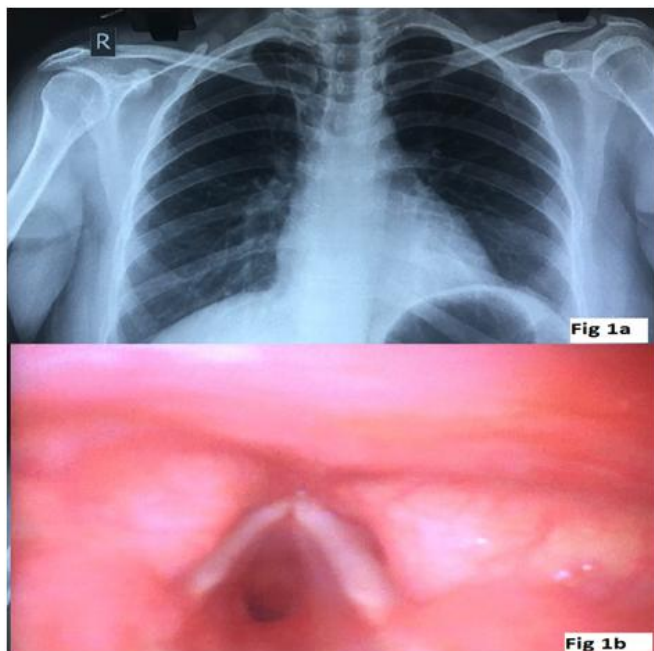
We report a case of 36 year old female, known case of Wegener's Granulomatosis, with complaints of recurrent headache, nasal congestion and bilateral hearing loss slowly progressive over 4 years scheduled for Bilateral Functional Endoscopic Sinus Surgery (FESS) and myringotomy with grommet insertion.

She had no history of allergies, chestpain, dyspnoea at rest or exertion. Systemic examination was normal except for bilateral decreased hearing. Clinical airway examination showed modified mallampati grade 1, without any restriction of neck movements. Routine blood investigations were found to be unremarkable. ESR levels were mildly raised. Antinuclear antibody (ANA) and Antineutrophil cytoplasmic autoantibody (c-ANCA) tests were positive. Chest x-ray PA view did not reveal any narrowed airway shadow (fig1a). Audiometry showed bilateral conductive hearing loss, HRCT paranasal sinuses showed chronic maxillary and ethmoid sinusitis. A previous HRCT chest didn't reveal any airway abnormality.

Informed and valid consent was obtained. Standard protocols for anaesthesia care were followed. On the morning of surgery difficult airway cart was kept ready in view of anticipated difficult airway. Patient was preoxygenated for 3 minutes with 100% oxygen. After induction with titrated doses of inj. Propofol and ensuring mask ventilation, inj succinylcholine was administered intravenously. Intubation was attempted with cuffed portex size 6.5 mm endotracheal tube but was unsuccessful, smaller sized tubes also could not be passed through below the vocal cords. Patient was awakened and an awake fibre optic laryngoscopy was done which showed severe subglottic stenosis (grade 3). (Fig 1b). Surgery was postponed, patient and her family were counselled for CO2 laser therapy to relieve subglottic stenosis at a later date.

Wegener's Granulomatosis (WG) is a multisystem autoimmune disorder with granulomatous inflammation and

vasculitis involving upper and lower respiratory tract, and kidneys. The clinical triad has three components -rhinitis and sinusitis, nodular pulmonary lesions and renal insufficiency. When renal involvement is not found, it is known as limited form -WG. Anaesthesia management depends upon the extent of organ involvement. Detailed airway examination with an indirect laryngoscopy, neck and chest X-ray and HRCT chest is must. A preop arterial blood gas analysis, spirometry with flow volume loops and nasal endoscopy can also be included. An informed consent for possibility of post op mechanical ventilation/ tracheostomy should be taken. These patients can have airway obstruction, oedema and bleeding while intubation thus attempts should be gentle and limited. Supraglottic airways like laryngeal mask airways can be used where ever feasible(1, 2). Other options to access airway are placement of cricothyroid cannula with jet ventilation and nasal insufflation of oxygen with total intravenous anaesthesia.



Form Wegener Granulomatosis Case: Anaesthetic Approach and Literature Review. Turk J AnaesthesiolReanim. 2014;42(6):365–367

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Renal involvement can alter the excretion; hence the drugs with active or toxic metabolites dependent on renal excretion should be avoided. (3) Succinylcholine should be used sparingly in patients on cyclophosphamide as it inhibits pseudocholinesterase. Atracurium and Cisatracurium are safer options for muscle relaxation and among inhalational agents Desflurane or Isoflurane can be preferred. For analgesia, non-NSAIDs drugs are recommended.

Regional anaesthesia and analgesia including peripheral nerve blocks are a suitable alternative (4) but prior to using a regional technique, adequate coagulation status should be checked and sensory neuropathy if any should be documented. (5)

Patient with WG can present with a previously undiagnosed difficult airway thus detailed airway examination and radiological assessment is a must. Multidisciplinary approach in the form of prior CO<sub>2</sub> ablation of subglottic stenosis, regional anaesthesia, Ultrasound-guided peripheral nerve blocks, total intravenous anaesthesia and supraglottic airway devices can be used to avoid Cannot intubate situations.

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