

**Case report:**

**Awake fiberoptic intubation - A golden choice still? - Report of two Cases.**

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**Introduction:**

We have many devices in this 21<sup>st</sup> century, which can be used to secure the airway in patients who have been predicted to have “difficult airways”. There are many studies that had compared Flexible fiberoptic scope [FFS] with video laryngoscopes <sup>1-3</sup>, Intubating Laryngeal mask airway <sup>4,5</sup>[ILMA], ending up with various conclusions. Although the armamentarium is wide, the FFS remains the ‘gold standard’, at least in certain cases where usage of other devices such as ILMA [Intubation laryngeal mask airway] or video laryngoscopes is unsuitable, difficult or even risky. We report two such cases, where, “Awake FFS guided intubation” was considered as the golden choice.

**Case # 1 management:**

A 35 year old gentleman presented to E.N.T OPD of our institute with difficulty in swallowing, pain in the throat for the past fourteen days. He was investigated outside with contrast enhanced computer tomography study of neck, which revealed a non-homogeneous lesion with irregular margins measuring 50x37mm involving isthmus and left lobe of thyroid gland with necrotic changes, nodular calcification [Figure 1]. FNAC, which was also done outside, revealed an abscess.

Video assisted direct laryngoscope showed restriction of abduction movement of left vocal cord. X-ray neck taken in our institute, revealed a foreign body at the level of C4 and C5 vertebrae, which was suspected as fishbone [Figure 2], as the patient gave history of consuming fish 2 months ago, and had some discomfort in the neck since then.



Figure 1: CT-scan showing Foreign body in the neck with abscess

No other surgeries or any relevant history in the past. On airway assessment- patient found to have reduced neck flexion, reduced mouth opening of 2 finger length, Mallampatti grade 3. There were signs of inflammation in anterior aspect of neck. Systemic examination revealed no abnormality. Biochemical investigations and E.C.G were normal.

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Figure 2: X-ray neck lateral view showing fish bone

Patient was taken up for surgery the next day with a plan of “awake fiberoptic intubation” through right nostril with consent for tracheostomy also, in case of requirement. Patient was pre medicated with Tab. Ranitidine 150 mg, Tab.Alprazolam 0.5 mg the previous night. After shifting to operation room, he was connected to E.C.G, SpO<sub>2</sub>, NIBP monitors. IV access was established with 18 G cannula, Inj. Midazolam 2mg, Inj. Fentanyl 75 microgram and dexmedetomidine 50 microgram over 15 minutes as an infusion were given. FFS guided nasal intubation with 7 mm ETT done by “spray as you go” method using 2% lignocaine, as the local condition precluded airway blocks. ET tube position was confirmed and fixed at 24 cm. After establishing square wave form capnography, patient was induced with Inj.Propofol 2mg/Kg and paralysed with Inj. Vecuronium 4mg IV. Anaesthesia was maintained with O<sub>2</sub>, N<sub>2</sub>O and sevoflurane. The abscess was drained and the fishbone was removed. The patient was reversed and extubated without any complications. Post operative period was uneventful.

#### Case # 2 management:

A 65 year old man posted for inguinal hernioplasty, with history of diabetes for the past 5 years on regular

treatment and history of smoking since 5 years, 5-8 cigarettes per day. On assessment of airway, he found to have reduced mouth opening of less than 2cm length, Mallampatti grade 3 with grossly reduced flexion and extension of neck. The history also revealed that he needed two pillows under his neck to lie down in supine position [see figure -3]. Examination of the back revealed significant narrowing of spinal inter space. His blood sugar was under control. All other biochemical investigations, E.C.G and 2-D ECHO were within normal limits. P.F.T couldn't be done because of poor effort tolerance. Systemic examination was normal.



Figure-3 : “Fixed neck” of the patient

Patient was electively planned for hernia repair under Sub arachnoid block. Patient was pre medicated with Tab.Ranitidine 150 mg, Tab.Alprazolam 0.5 mg the previous night. His fasting blood sugar was 74mg and urine ketones were negative on the day of surgery. After shifting to operation room, he was connected to E.C.G, SpO<sub>2</sub>, NIBP monitors. IV access was established with 18 G cannula and preloaded with 10ml/kg of RL, Inj. Midazolam 2mg and Inj.Fentanyl 75 microgram given, and positioned for spinal anaesthesia in sitting position. Repeated 3 attempts by two senior anaesthesiologists in both sitting as well as left lateral position failed. Ultrasound guidance also did not help the procedure to be accomplished. The procedure was abandoned on that day and the patient was further evaluated for his spinal abnormalities. X-rays of lumbo sacral, cervical spines revealed fusion of vertebrae at all levels, calcified disc space, fusion of spinous process, osteoporotic changes, bamboo spine appearance which were suggestive of Ankylosing spondylitis. The patient was taken up for surgery, two days later with a plan of G.A, after securing his airway by awake fiberoptic nasal intubation with ultrasound guided hernia block. After adequate sedation and ultrasound guided airway blocks, patient was intubated with 7.5 sizes E.T.T through right nostril under fiberoptic

scope guidance. G.A initiated, ultrasound guided ilio-inguinal, ilio-hypogastric blocks were supplemented. Procedure was uneventful.

**Ethical clearance:** This case report was approved by ethics Committee of Shri Sathya Sai Medical College & Research Institute, Ammapettai, Kancheepuram Dt., Chennai-603108, INDIA.

**Discussion:**

Both the cases were managed well with awake FFS guided nasal intubation, incidentally on the same day. In case#1, we didn't try for ILMA because it requires G.A or airway blocks. It was not safe to induce G.A in this patient without securing a definitive airway. Because of local infection airway blocks were not possible. Moreover, there was a sword [“rupture of abscess and airway flooding”]<sup>6</sup> hanging over the “neck” of the anesthesiologists, which could happen with ILMA or with video laryngoscope. Nasal route was preferred for intubation, because, the surgeons required more working space. We cashed on it, as it was easier for the anesthesiologists as well. This is an additional reason for not opting ILMA in this case. In Case#2, spinal anesthesia could not be accomplished because of inter-spinous ligament ossification and bony bridges formed between lumbar vertebrae. Ankylosing spondylitis is an inflammatory arthritis that affects the axial skeleton, predisposing the patient with severe movement restrictions and spinal fractures. Chronic inflammation leading to progressive ligament and joint ossification in cervical/ lumbar spine- may cause difficult intubation due to reduced spine motion and mouth opening<sup>7</sup>. Awake fiberoptic nasal intubation is safest in this patient because, ILMA guided intubation requires manipulation of C-spine. Fuchs G et al had observed

that awake, fiber optic nasal intubation was a better choice in patients with cervical spine abnormalities to avoid neurological complications<sup>8</sup>. Indeed, ILMA insertion produces significant segmental movement of the cervical spine despite manual in-line stabilization in patients with cervical spine pathology<sup>9</sup>. Moreover, with the severe restricted neck movements, it would be very difficult to intubate this patient orally using ILMA. This is the reason, we chose the nasal route for this patient under FFS guidance too, which would be easier than oral route<sup>8</sup>.

**Conclusion:**

Two important take home messages from these two cases are:

1. FFS guided awake intubation is still a golden choice in some cases. Using the new devices such as ILMA, Video laryngoscopes may be very dangerous in these situations such as flooding of airway, neurological deficit.
2. Whenever a difficult intubation is anticipated because of spine abnormalities, it is better to investigate the spine abnormalities completely, even though the central neuro-axis blocks might appear clinically not that difficult like in the second case here.

**Conflict of interest:** None declared

**Authors' Contributions:** Data gathering and idea owner of this study: Raghuraman M.S.

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**References:**

1. Rosenstock CV, Thøgersen B, Afshari A, Christensen AL, Eriksen C, Gätke MR. Awake fiberoptic or awake video laryngoscopic tracheal intubation in patients with anticipated difficult airway management: a randomized clinical trial. *Anesthesiology*. 2012 Jun;116(6):1210-6. <https://doi.org/10.1097/ALN.0b013e318254d085>
2. Abdellatif AA, Ali MA. GlideScope videolaryngoscope versus flexible fiberoptic bronchoscope for awake intubation of morbidly obese patient with predicted difficult intubation. *Middle East J Anaesthesiol* 2014;22:385-92.
3. S.S. Wahba, T.F. Tammam and A.M. Saeed. Comparative study of awake endotracheal intubation with glidescope video laryngoscope versus flexible fiber optic bronchoscope in patients with traumatic cervical spine injury. *Egyptian Journal of Anaesthesia* 2012; 28(4):257-260 <https://doi.org/10.1016/j.ejga.2012.05.002>
4. Olivier Langeron, M.D.; François Semjen, M.D.; Jean-Louis Bourgoin, M.D.; Alain Marsac, M.D.; Anne-Marie Cros, M.D. Comparison of the Intubating Laryngeal Mask Airway with the Fiberoptic Intubation in Anticipated Difficult Airway Management *Anesthesiology* 2001;94:968-972.
5. Kolly S, Chalam, Jyothi Gupta. Comparison of intubating laryngeal mask airway and fiberoptic bronchoscopy for endotracheal intubation in patients undergoing cervical discectomy. *J Anaesthesiol Clin Pharmacol*. 2016; 32(4):515-518. <https://doi.org/10.4103/0970-9185.194765>  
doi: 10.4103/0970-9185.194765. <https://doi.org/10.4103/0970-9185.194765>
6. Pollard BA, El-Beheiry H. Pott's disease with unstable cervical spine, retropharyngeal cold abscess and progressive airway obstruction. *Can J Anaesth*. 1999;46(8):772-5. <https://doi.org/10.1007/BF03013913>
7. Woodward LJ, Kam PC. Ankylosing spondylitis: recent developments and anaesthetic implications. *Anaesthesia*. 2009;64(5):540-8. doi: 10.1111/j.1365-2044.2008.05794.x <https://doi.org/10.1111/j.1365-2044.2008.05794.x>
8. Fuchs G, Schwarz G, Baumgartner A, Kaltenböck F, Voit-Augustin H, Planinz W. Fiberoptic intubation in 327 neurosurgical patients with lesions of the cervical spine. *J Neurosurg Anesthesiol*. 1999;11(1):11-6. <https://doi.org/10.1097/00008506-199901000-00003>
9. Kihara S, Watakihara S, Watanabe S, Brimacombe J, Taguchi N, Yaguchi Y, Yamasaki Y, Nabe S, Brimacombe J, Taguchi N, Yaguchi Y, Yamasaki Y. Segmental cervical spine movement with the intubating laryngeal mask during manual in-line stabilization in patients with cervical pathology undergoing cervical spine surgery. *Anesth Analg*. 2000;91(1):195-200.