

Case Report Of A 48 Year Old Male With Multiple Facial Fractures Due To An Attack By A Wild Bear

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Citation

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Abstract

Lefortes fracture is a fracture involving the maxilla and the orbit. Anaesthetic challenges associated with managing such a case include difficult airway and its complications. We report the successful management of such a case using a lightwand.

CASE REPORT

A 48 year old male weighing 50 kg presented to the casualty ward with history of assault on the face by a wild bear of 7 days duration in Nepal₁. There was history of loss of consciousness for ½ hr. There was no history of ENT bleed, vomiting, convulsion, chest and abdomen trauma. There was no previous surgical and medical history.

GENERAL EXAMINATION

Multiple sutures were present on the face, which were made under local anesthesia in Nepal. The right eyeball was displaced inferiorly. (Figure 1&2). No vision was present in right eye; the left eye vision was 6/6. Teeth and Airway: Missing upper incisors. Mouth opening: 1 cm. Mento hyoid distance: 5 cms, Mento thyroid distance: 6.5 cms, Mento sternal distance: 13 cms. All vitals and routine investigation were within normal limits. X-ray face: Leforte III, (Figure 3&4). CT – Face: Leforte III fracture. CT – Brain: within normal limits. No active intervention neurosurgically. High risk consent was taken in view of difficult intubation. Plan for Lightwand intubation/ fiberoptic intubation. Tracheostomy was kept standby.

The patient was premedicated with inj glycopyrrolate 0.2 mg i.m. Consent and starvation was confirmed. Monitors were attached- pulse oximeter, cardioscope, sphygmomanometer manual, intravenous line secured with 18 G vein flow. The patient was sedated with inj. Midazolam 1 mg i.v. and induced with inj. Propofol 100 mg, Iv and after confirming adequate mask ventilation inj. Pancuronium 8mg i.v. was given. The lighted stylet is introduced into the oropharynx from the right side and brought into the midline following the midsagittal plane transecting the tongue. A right lateral

transilluminating glow was observed immediately in the neck. After partially withdrawing and repositioning the lightwand in the midline, an optimal and central transilluminating glow was promptly visible on the cricothyroid membrane.(Figure 5 &6). A cuffed 8mm internal diameter portex endotracheal tube was threaded over the lightwand and after confirming bilateral equal air entry tube was fixed². Intubation was done in the first attempt within 20 seconds. Anesthesia was maintained with oxygen and nitrous oxide (40:60) with intermittent Isoflurane (0.4-0.6 volume %) and inj. Pancuronium. Hemodynamics were maintained.

Intra – operative drugs: Inj Buprenorphine 150 ug, Inj Dexamethasone 8 mg, Inj Ranitidine 50 mg, Diclofenac suppository 100 mg. Inj Cefuroxime 1.2 gm Fluids: 3500ml ,500ml colloids. Blood loss: 450ml.

Duration of anesthesia: 8hrs 40 min.

Immunization: passive; inj Rabipur on 0,3, 7, 14, 20 days, 1ml i.m., Active: Immunoglobulins 300 U was infiltrated in the wound at the time of surgery.

At end of surgery, reversal was done with inj Neostigmine 3 mg, inj Glycopyrrolate 0.4 mg i.v. After adequate reversal of neuromuscular blockers and spontaneous breathing, patient was extubated.

Post operative- All vitals were stable, patient was nil by mouth for 6 hrs, then Ryles tube feeding was started. Monitoring included temperature, pulse rate, blood pressure and urine output.

Figure 1

Figure 1&2: Picture showing patient with multiple facial sutures



Figure 2



Figure 3

Figure 3&4: X-ray showing Leforte fracture



Figure 4

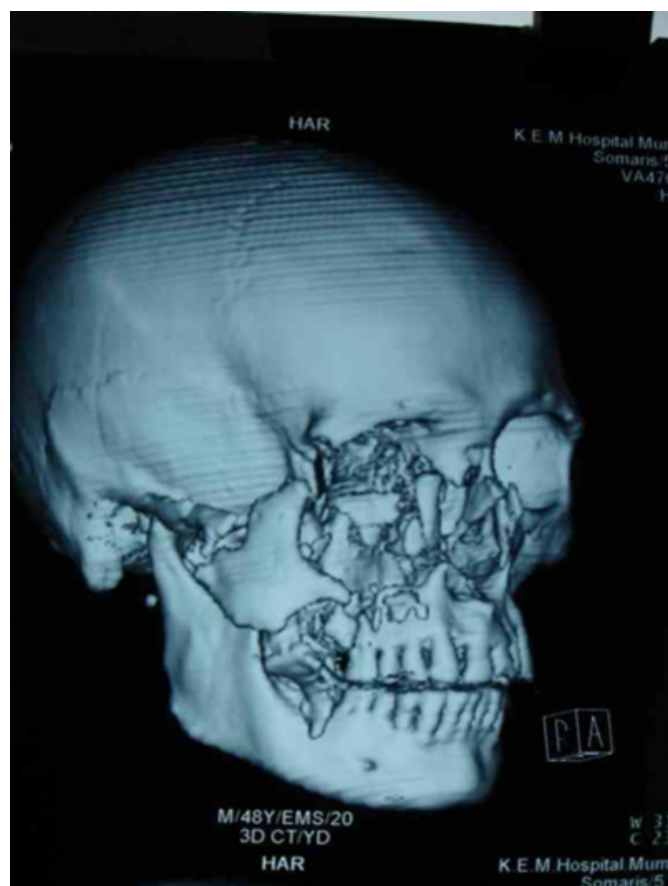


Figure 5

Figure 5&6: Bright transilluminating glow seen on the cricothyroid membrane.

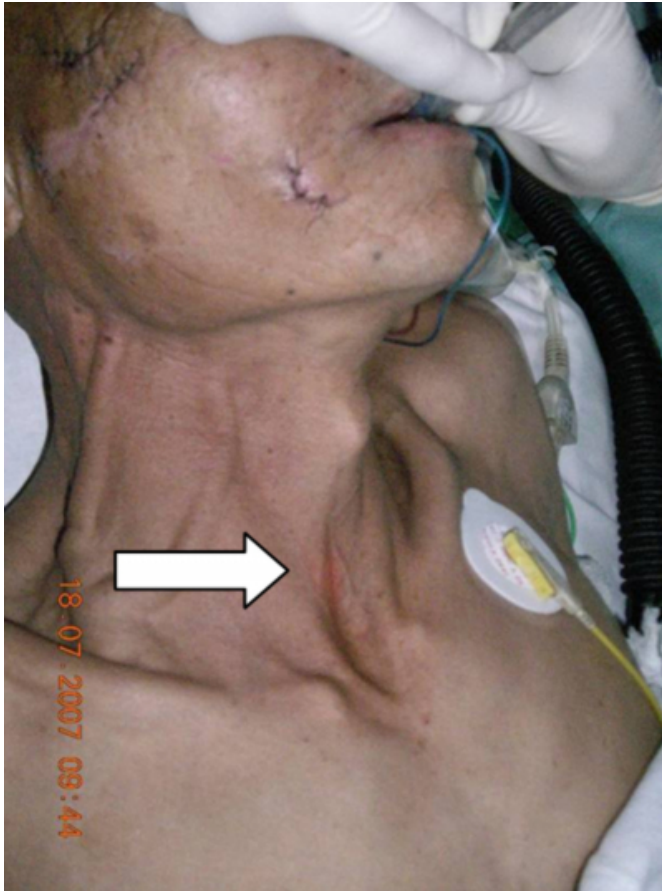


Figure 6



DISCUSSION

Characteristics of human casualties due to attack by a wild bear was studied and revealed multiple injuries in 52%, single injuries on leg in 25%, hand 12%, and head 8%. Facial lacerations due to dog bite was studied which revealed injuries to lips 65%, eyebrows 27%, chin, cheeks and forehead 3%. Our patient had injuries on eye, cheeks and lips. Difficulty in managing airway is the single most important cause of anesthesia related mortality and morbidity. The reported incidence of failed intubations is 0.04% to 0.43% with morbidity including dental/airway injury, intra operative cardiac arrest and aspiration. Although the commonly used airway devices are fiberoptic bronchoscope, Bullard laryngoscope and intubating laryngeal mask, intubating lightwand has been recommended as the first option in patients with failed laryngoscopic intubation who can be ventilated by face mask. We used a Talwarkars Fiberoptic Lite stylet (Anesthetics). (Figure 7)

Figure 7

Figure 7 : Talwarkars Fibreoptic Lite Stylet.



TYPES OF LIGHTED STYLET

Flexi-lum™ – Its use as a tracheal intubation device ended after a serious complication in which the distal bulb became detached and had to be retrieved from the patient's right lower lobe bronchus₆.

The Tube-Stat™ (Xomed, Jacksonville, FL) evolved from the Flexi-lum™ and included a sleeve surrounding the bulb designed to prevent bulb loss. Current lightwands are largely fiberoptic in design and have either external or internal light sources. The Imagica™ (Fiberoptic Medical Products, Allentown, PA) lighted stylet can accommodate tubes as small as 2.5-mm ID and requires an external light source.

Trachlight™ (Laerdal, Armonk, NY), also with an internal light source/handle, has a retractable stylet and accommodates tracheal tubes from ID size 2.5–10 mm₇. Newer devices have been developed that use transillumination or transmission of sound, in combination with other intubating guides. The AMS shuttle combines a lighted stylet with a fiberoptic scope (Fiberlightview™, Anesthesia Medical Specialties)_{8,9}

Ellis et al. were the first to show that lighted stylet intubation (Tube-Stat™) compared well with direct laryngoscopy by using a Macintosh blade with regards to time to intubation and complications. In a trial comparing blind nasal with lighted stylet intubation₁₀. Fox et al. found that both time to intubation (means 119.7 vs 37.9 seconds) and number of intubation attempts were significantly less in the latter group₁₁. We intubated the patient in the first attempt within 20 sec. Weis and Hatton reported a case series of 253 patients in whom the lighted stylet had been used in a variety of clinical settings with much success₁₂. The largest trial performed involved 950 patients comparing Trachlight™

with direct laryngoscopy, noting time to intubation in both groups, difficult intubation predictors such as the Mallampati score, success rate, and complication rate₅. The success rates were comparable for the two groups; however, the time to intubate was significantly shorter in the Trachlight™ group.

There was a tendency for the lightwand group to have lower arterial blood pressures (means, 110 mm Hg for lighted stylet versus 128 mm Hg for Macintosh III blade) and slower heart rates (95 bpm for lighted stylet versus 108 bpm for Macintosh III blade) at intubation. We noted a heart rate of 92 bpm, and blood pressure 114mm Hg systolic. More recently, Friedman et al. studied 40 subjects receiving either rigid laryngoscopy (Macintosh 3 blade) or lightwand intubation as part of a standardized outpatient general anesthetic. Heart rate and blood pressure changes during intubation were recorded₁₃. As with Knight et al.'s study, there was no statistical hemodynamic difference between the lighted stylet and the direct laryngoscopic intubation technique. It appears that lighted stylet tracheal intubation, if performed in the same time as direct laryngoscopy, does not cause greater hemodynamic instability₁₄.

One concern that has been raised when using a lighted stylet is the possibility of heat damage to the tracheal mucosa during prolonged intubation attempts. This issue is only of concern where there is a bulb at the tip of the stylet, e.g., Trachlight™, but in models where the light is fiberoptic eg, AMS, there will be no heat at the tip. An added advantage is that secretions are not an impedance as they can be in direct or fiberoptic laryngoscopy. There are two reported incidents of instrument disarticulation_{15,16}. No patient morbidity was noted. The most severe upper airway damage reported after lighted stylet intubation are two reported cases of arytenoid cartilage dislocation_{17, 18}. Because arytenoid dislocation may occur with direct laryngoscopy and is similarly rare, it is impossible with the current data to determine whether use of a lighted stylet poses an increase in risk. No such complication were noted in our case with use of a Talwarkars Fibreoptic Lite stylet.

CONCLUSION

Lighted stylet intubation is a simple technique, easily learned, valuable if tracheal intubation by using direct laryngoscopy is impossible. Unlike fiberoptic intubation, minimal preparation is needed. Lighted stylets can be cleaned and sterilized readily and are easily transportable. With the right choice of stylet, it can be used for all sizes of

patients and will not significantly increase department costs.

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