

Difficult Extubation In A Child With Developing Neck Contracture.

S Kiran, K Kamal, S Hooda, T Singh, Hemant

Citation

S Kiran, K Kamal, S Hooda, T Singh, Hemant. *Difficult Extubation In A Child With Developing Neck Contracture.* The Internet Journal of Anesthesiology. 2009 Volume 24 Number 1.

Abstract

SIR,

A 5 year old male child, weighting 18 kg, was scheduled to undergo skin grafting following a post burn raw area on chest and neck. The burns were a result of bursting of an oil stove four months back. The burn area included anterior and posterior part of the chest, neck and upper part of arms bilaterally. Following burn the child had developed mentosternal contracture with a raw area in the lower part of neck and upper chest, a receding jaw and inability to close the mouth. The surgeons planned for skin grafting while release of neck contracture was planned at a second stage. Routine haematological investigations were normal.

In the OR, after attaching the monitors for electrocardiography (ECG), oxygen saturation (SpO₂) and noninvasive blood pressure (NIBP), inhalational induction was achieved with halothane and nitrous oxide in oxygen. With increasing concentration of halothane upper airway obstruction started occurring which could not be relieved by jaw lift. A classical LMA of size 2 was inserted which relieved airway obstruction and the patient could be ventilated adequately. Subsequently Inj vecuronium bromide 2mg was then given to facilitate endotracheal intubation. A grade II (Cormack and Lehane) laryngoscopy view was seen after optimal external laryngeal manipulation (OELM). Endotracheal intubation was done with 5.5 mm ID plain portex tube. Intraoperative analgesia was achieved with intravenous pethidine 10 mg. Maintenance of anaesthesia was accomplished with 33% oxygen in 67% nitrous oxide in halothane. After skin grafting of neck and upper chest, residual paralysis was reversed with neostigmine and atropine. Extubation was done after the patient was awake and breathing spontaneously. Immediately following extubation patient developed airway obstruction. Oxygen saturation dropped to 90%, forward jaw lift relieved the

obstruction temporarily but inspiratory stridor followed. A 4.5 mm ID uncuffed tube cut to an appropriate length was used as a nasopharyngeal airway. This relieved the airway obstruction and stridor. After 20 min the child became fully awake. Nasopharyngeal tube was removed, airway obstruction reoccurred and nasopharyngeal tube was reintroduced. It was discussed with operating surgeon to release the contracture, in the meantime while preparing for surgical procedure it was noticed that patient had gradually improved and was not tolerating the nasopharyngeal tube which was removed immediately. Forty five minutes had elapsed since extubation, there was no residual airway obstruction and patient was further observed for 2 hours and this period remained uneventful.

Impaired cervical hyperextension, incomplete oral occlusion and inability to lift the mandible may commonly be encountered while anaesthetising a patient having post burn neck contracture. Management of burn patients who are developing or developed mentosternal contracture is a challenging task for the anaesthesiologist. Difficult intubation has been reported in such cases.^{1,2} The suggested options for securing the airway are LMA, fiberoptic laryngoscopy, blind nasal intubation, release of contracture under ketamine and local anaesthesia as well as tumescent anaesthesia.³ The extubation in such patients is reported uneventful as scar tissue is excised but in our case only skin grafting of raw area was done without release of contracture which was to be done in later stage when wound would have totally healed. In developing countries patients usually present for skin grafting at a stage when contractures have already developed therefore one should keep in mind the possibility of airway obstruction after extubation. Inhalational agents, opioids and muscle relaxant with short duration of action and minimal residual effect are ideal

agents in maintaining such patients. However unavailability of the same compelled us to use vecuronium ,halothane and pethidine, residual effect of which could have contributed to the development of airway obstruction at the time of extubation.

References

1. Kreulen M, Mackie DP, Kreis RW, Groenevelt F. Surgical release for intubation purposes in postburn contractures of the neck. *Burns* 1996; 22:310-2.
2. Nath S, Erzingatsian K, Simond S. Management of post burn contracture of the neck. *Burns* 1994; 20:438-41.
3. Saraswat M, Radhakrishnan M. Burn contracture of neck: Two case reports of difficult intubation. *The internet journal of anesthesiology* .2001 Volume 5 Number 3.

Author Information

Shashi Kiran, MBBS, DA, DNB

Professor, Deptt. Of Anesthesiology & critical care, Postgraduate Institute of Medical Sciences

Kirti Kamal, MBBS, MD

Assistant Professor, Deptt. Of Anesthesiology & critical care, Postgraduate Institute of Medical Sciences

Sarla Hooda, MBBS, MD

Professor, Deptt. Of Anesthesiology & critical care, Postgraduate Institute of Medical Sciences

Tarandeep Singh, MBBS, MD,

Senior Resident, Deptt. Of Anesthesiology & critical care, Lady Hardinge Medical College

Hemant, MBBS, MS

Assistant Professor, Deptt. Of Surgery, Postgraduate Institute of Medical Sciences