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SAFER AWAKE DIFFICULT AIRWAY TRACHEOSTOMY PRACTICE IN OUR HOSPITAL IN COVID PANDEMIC UNDER SUPERFICIAL CERVICAL PLEXUS BLOCK.

Anaesthesiology

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ABSTRACT

As per guidelines by ENT UK all normal airway tracheostomies should be done in fully paralysed and intubated patients in a COVID setting, and in difficult airway with irreversible airway obstruction awake tracheostomy should be done. The tracheostomy under conventional local infiltration technique is an aerosol generating procedure with potential spread of infection. We would like to share the superior operative protocol of safe awake tracheostomy practice of our institution under bilateral superficial cervical plexus block.

KEYWORDS

Tracheostomy, COVID, Superficial cervical plexus block

INTRODUCTION

COVID 19 is mainly transmitted through aerosols and surface contaminations.Tracheostomy is a risky procedure in this COVID scenario as it is an aerosol generating procedure with potential spread of infection.According to COVID tracheostomy guidelines all normal airway tracheostomies should be done in completely paralysed and intubated patients with full PPE for the care providers, but in known difficult airway scenario like stridor due to mass lesion in the glottis with narrow glottic space awake tracheostomy should be done [1].According to a 2012 systematic review of infection risk to health workers,ranked airway procedures in descending order in which tracheal intubation comes first followed by tracheostomy,noninvasive ventilation and mask ventilation[2].Tracheostomy under bilateral superficial cervical plexus block along with transtracheal block makes the procedure relatively pain free without compromising the airway and has excellent tube toleration following the procedure without any cough reflex in the immediate postoperative period. It provides analgesia to the antero- lateral compartment of the neck and also sufficient relaxation of strap muscles.

METHOD

Written informed consent should be taken. Most skilled Anaesthesiologist and ENT surgeon should be present to make the procedure safe, accurate and swift.It is advisable to reduce team members to essential staffs.Ideally the procedure should be done in a negative pressure operation theatre. Use FFP3/N95 mask with tight seal is mandatory.A leak test should be performed to ensure seal of the mask.Eye/face protection and fluid resistant disposable gown should be worn.Appropriate size glove to allow palpation should be used and also consider double gloving.Tracheostomy set should be kept ready with cuffed non fenestrated tracheostomy tube.Patient should be shifted with triple layer surgical mask. Attach standard ASA monitors as in any procedure.Bilateral superficial cervical plexus block under strict asepsis should be given by an experienced anesthesiologist under landmark technique with 6ml 2%lignocaine.Patient should be positioned with a head ring and sand bag under the shoulder.

100% oxygen should be given using tightly sealed anatomical face mask with a manual spontaneous ventilator circuit with 2 HMEs, one at the patient end and the other at the machine end. Transtracheal block should be given by the surgeon while identifying the trachea with 1to2 ml4% lignocaine.Cuffed non fenestrated tracheostomy tube should be inserted.As soon as the tube is inserted, ventilator circuit has to be connected with the help of a catheter mount and the HME and ETCO2 monitor to confirm correct position of the tube.

DISCUSSION

The cutaneous branches of cervical plexus emerge from the posterior margin of sternocleidomastoid at its midpoint which are innervated by C2–C4[3].These cutaneous branches are four in number and are blocked at the midpoint of the posterior margin of sternocleidomastoid in a fan-shaped fashion ,vertical and cranio-caudal direction using 6 ml of 2% lignocaine with 26 G intradermal needle.[4]There are anecdotal reports of recurrent laryngeal nerve paralysis and airway obstruction when large volumes of local anaesthetics are used (10-15 ml for superficial cervical plexus block and 5 ml for transtracheal block)[3,5,6]In our experience small volume of drug ranging from 5 to 7 ml each on both sides mainly targeting the transverse cervical branch would be sufficient for excellent analgesia and apparent relaxation of strap muscles without any airway compromise. Strap muscles become taut in awake patients in conventional local infiltration technique with inadequate analgesia. Superficial cervical plexus block provides calm comfortable patient, avoiding the need for general endotracheal anaesthesia,increases immediate post-operative tube tolerance, minimises intra and postoperative cough reflex and minimises aerosolisation hence transmission of viruses to the care providers can be minimised.

The well-known indication of superficial cervical plexus blocks is carotid endarterectomy [7] while the other indications are superficial neck surgeries such as excision of cervical lymph nodes and thyroglossal cyst. In shoulder surgeries it can be combined with supraclavicular or infra clavicular block so as to avoid phrenic nerve injury associated with interscalene approach [8].Low-dose superficial cervical plexus block with trans-tracheal block is a viable alternative to local infiltration in semi-emergency tracheostomy with anticipated surgical difficulty[4].

CONCLUSION

Tracheostomy , as it is an aerosol generating procedure should be done with utmost care to prevent transmission of COVID 19 in this pandemic scenario. Giving any type of sedation in impending airway obstruction is dangerous as we may end up in losing the airway. Superficial cervical plexus block with trans tracheal block is a viable alternative in such situation as it provides analgesia to the anterolateral compartment of neck and apparent relaxation of the strap muscles so that we will get calm cooperative patients with very minimal aerosol spread than conventional local infiltration techniques.

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