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EMERGENCY PERCUTANEOUS TRACHEOSTOMY IN FAILED INTUBATION

Anesthesiology

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ABSTRACT

Introduction: Percutaneous tracheostomy (PT) has replaced the surgical approach of airway establishment in many intensive care units and is mainly indicated for elective use. However the role in emergency condition has yet to be adopted. A COPD patient with severe breathlessness had unanticipated difficult intubation however this was successfully managed with PT. Our case demonstrates the feasibility of PT technique in patients who require emergency airway access, therefore in this article we have illustrated a short case report to highlight the role of emergency PT.

Conclusion: PT, though considered to be an elective option for airway management, may be used safely in emergency situation, however, it requires appropriate training and skill.

KEYWORDS

Emergency Percutaneous Tracheostomy (pt), Difficult Intubation, Failed Intubation.

INTRODUCTION

Percutaneous Tracheostomy is a well established technique for securing airway in patients who need prolonged mechanical ventilation.[1] It is usually an elective procedure in Intensive Care unit however its role in emergency settings is not completely evaluated. Needle Cricothyrotomy is a preferred modality in emergency situations but it is a temporary measure until a definitive airway can be established. We here describe a case of acute exacerbation of COPD in which an emergency percutaneous tracheostomy was performed to salvage the patient after failed intubation attempts.

CASE REPORT

A 58 year old male presented with severe breathlessness and dry cough was admitted to our Intensive Care Unit from Respiratory Medicine Ward. Patient was a chronic smoker with 40 pack/ year smoking history. He also had a history of three previous hospital admissions with the similar complaint.

On admission to ICU his vitals were HR - 104/min, BP 118/68 mm Hg, Spo2 90 % (Fio2 60%) Respiratory Rate 29/min and temperature was 100 degree F and GCS was 15/15. On inspection inter-costal in drawing and use of accessory muscle of respiration was visible. On auscultation bilateral basal creptations were heard but more in right side. His investigations were Hb 14.1 gm% ,TLC 12000 cells/mm3, KFT and LFT were within normal limits. Blood gas analysis was suggestive of respiratory acidosis with compensatory metabolic alkalosis.(ph -7.300 ,po2 60.4 mm Hg, pco2-67.8 mm Hg, Hco3- 33.0 mmol/l at Fio2 50%). His chest radiograph showed right upper and lower zone consolidation.

Patient was diagnosed as acute exacerbation of COPD secondary to pneumonia. Cultures were withdrawn prior to administration of broad spectrum antibiotics. Non invasive mode of ventilation was started with pressure support of 15 cm H20 and PEEP of 5 cm H2o and Fio2 of 50 %. After about 2 hour of starting non invasive ventilation patient started becoming drowsy and desaturating so endotracheal intubation was attempted. Inj Propofol 80 mg and inj succinylcholine 80 mg was given after confirming mask ventilation to aid endotracheal intubation however during intubation his cormac lehane grade assessed was four so attempt of intubation failed even with the aid of bougie and stylet. Ventilation with supraglottic airway device was tried but was unsuccessful and fiberoptic bronchoscope was not available at that time however mask ventilation was possible so decision of emergency PT was taken which was performed successfully within 2 minutes and confirmed by auscultation of equal b/l air entry and square shape capnograph pattern.

After about one week of icu care patient was decannulated, tracheostomy stroma was closed and he was shifted to ward and subsequently he was discharged from the hospital.

DISCUSSION

Open tracheostomy is gold standard to secure definitive airway where endotracheal intubation is not possible. But this procedure is difficult, time consuming and requires expertise so it is not recommended for emergency conditions. A cricothyroidotomy can provide rapid airway access in emergency and is the standard treatment but it is a temporary solution and ventilation may be difficult specially in patients with low respiratory compliance.[2]

The PT is usually safe and efficacious in elective situation, but in emergency setting there is possibility of cannula dislodgment, false track formation and complete loss of airway so generally it is not recommended for emergencies. Some of the manufacturer like Portex ULTRAperc does not recommend PT for emergency airway access. However, few case reports [3,4,5] have shown efficacy of PT in emergencies. Moreover PT at patient's bedside avoids unnecessary, and at times high-risk transfers to operation theater, is minimally invasive and last but not the least, cost-effective.[6] Some Meta-analysis have compared that chances of stomal infection and inflammation are less than with surgical tracheostomy.[7,8]

Due to lack of research in the use of PT in emergency settings, its use in this situation is debatable however in our case when standard management techniques for difficult intubation failed, airway was quickly and effectively secured with Percutaneous tracheostomy without any adverse event. So further well designed clinical trials are warranted to confirm the efficacy of this method for emergency situations.

CONCLUSION:

PT, though considered to be an elective option for airway management, may be used safely in emergency situation, however, it requires appropriate training and skill.

CONFLICT OF INTEREST : Nil

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