Available Online at www.jddt.in

ISSN: 2320 - 4230

Journal of Drug Discovery and Therapeutics 2 (22) 2014, 78-80

CASE REPORT

Life threatening ventilatory obstruction due to a foreign body in a new sealed endotracheal tube

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Received 23 October 2014; Accepted 28 October 2014

INTRODUCTION:

In the current days of high tech equipment and well defined safety regulations, technical failures are less likely to occur. Still many manufacturing and packaging errors are encountered in anaesthetic practice which go unnoticed during the routine inspection prior to their use. A 32 year old healthy adult male with insignificant medical and surgical history was posted for clavicular plating under general endotracheal anaesthesia (GETA). Inside the operation theatre premedication was given after attatching monitors, patient was preoxygenated for 3 minutes with 100% oxygen. After induction with thiopentone sodium and confirming ventilation , succinyl choline was administered for muscle relaxation. Laryngoscopy was done, a new portex cuffed endotracheal tube of 8.5 size was inserted under vision and connected to the breathing circuit. On ventilation after cuff inflation there was no chest expansion and air entry on auscultation. High resistance to manual ventilation along with above mentioned findings made us to think of some obstruction to the ventilation, and we checked the breathing system for any kinks or obstructions from common gas outlet till endotracheal tube and we could not find anything of that sort. Then we made a possible diagnosis of acute severe bronchospasm and initiated our measures towards relieving the bronchospasm in a stepwise manner according to the algorithm for managing perioperative bronchospasm (1). Inspite of all measures taken there was no improvement in chest expansion and air entry, and oxygen saturation (Spo2) then started decreasing gradually to 50% . Then it was decided to do repeat laryngoscopy to confirm the position of endotracheal tube, and it was found to be properly pisitioned. when we decided to reintubate the patient and were taking preperations ,we saw some white colored plastic piece of foreign material inside the ETT connector extending into lumen of the tube (figure 1). Immediatly connector was removed and piece of foreign material removed from it and connected to ETT , and ventilated with 100% oxygen. There was clear air entry and adaquate chest expansion with oxygen saturation gradually increasing to 100% within 30 sec. procedure went well and patient extubated at end without any complications.

Common reasons for failure to ventilate after succesfull endotracheal intubation are anaesthetic gas delivery malfunction, breathing system obstruction, acute severe bronchospasm, poor pulmonary compliance , tension pneumothorax etc. Some uncommon observations have also been reported till date and include , endobronchial mass lesion (2), cuff herniation leading to intraluminal tracheal obstruction(3,4), elliptical defects in the wall causing air leak(5), intraluminal plastic film and meniscus(6), plastic film with a small central perforation covering distal end of ETT(7), ETT connector defect(8) etc...

Routine pre-operative check up of ETT should be a standard of practice, ETT should be checked for patency of the lumen along with pilot ballon assembly. Inspite of routine pre use check up some defects go unnoticed and are evident only after initiation of mechanical ventilation. Our observation highlights the importance of double checking of anaesthetic equipment before use and using standard monitoring of mechanical ventilation. Thus the role of vigiliant anaesthetist is invaluable for patient safety.

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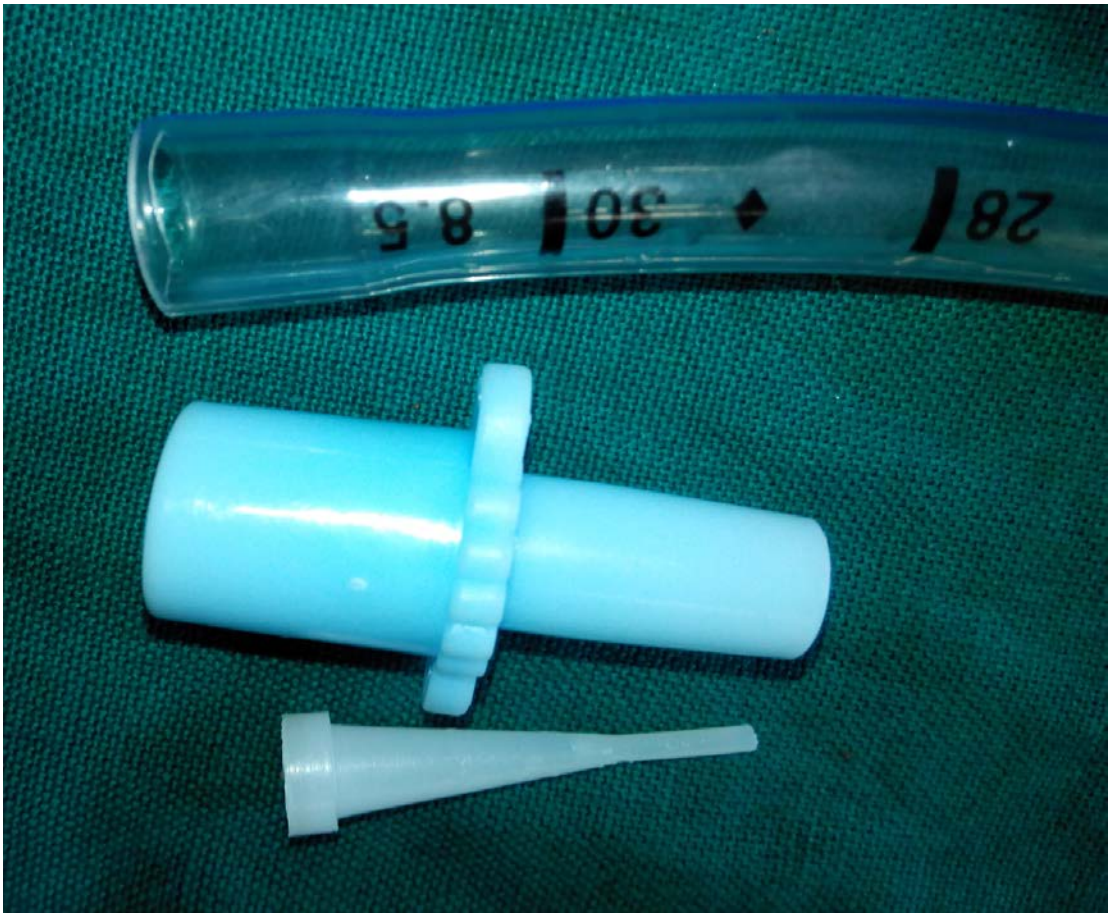

Figure 1:

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