

Case Report

Unanticipated difficult nasotracheal extubation following oral surgery

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ARTICLE INFO

Article history:

Received 5 February 2014

Received in revised form

26 March 2014

Accepted 31 March 2014

Key words:

bronchoscopy;

extubation;

Kirschner pin;

oral cavity cancer

ABSTRACT

Difficult tracheal extubation is a rare but potentially dangerous problem that can be life threatening especially when it is unexpected and there is a lack of preparation. Most of these cases are associated with orofacial surgery. We herein present two patients with oral cavity cancer who experienced unexpected postoperative difficult nasotracheal extubation by a Kirschner pin penetrating the endotracheal tube and fixing the tube at the maxillary bone following tumor resection. The pins were found by fiberoptic bronchoscopy. Both patients were returned to the operating theater immediately for removal of the penetrating pins as well as the endotracheal tubes. The common causes of difficult tracheal extubation and strategies of managing these situations are discussed in the article.

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1. Introduction

All anesthetists will face certain problems during airway management. There are numerous guidelines and protocols that address problems associated with tracheal intubation. By contrast, problems associated with tracheal extubation have always been overlooked and are less well documented. The occurrence of difficult extubation is rare but can be dangerous^{1–3} and even life threatening.⁴ Hence it is truly important to manage these situations with vigilance. The majority of cases of difficult extubations have been reported in association with orofacial surgery.^{5–8} Here we present two patients with oral cavity cancer who experienced postoperative difficult nasotracheal extubation following tumor resection.

2. Case reports

2.1. Case 1

An 82-year-old male (body height 163 cm, body weight 55 kg) with squamous cell carcinoma over his right hard palate was scheduled for wide tumor excision with partial maxillectomy and island flap repair. After induction of general anesthesia, a 6.5 mm inner diameter, cuffed endotracheal (ET) tube (CURITY Tracheal Tube, Kendall, Tyco healthcare, USA), was inserted smoothly via his

right nasal passage and advanced into the subglottic region using a flexible fiberoptic bronchoscope. After auscultation of bilateral lungs, the tracheal tube was fixed at 27 cm at his nostril. The courses of anesthesia and surgery were smooth and uneventful. After excising his palatal tumor, an obturator prosthesis was used to cover the residual palatal defect. The obturator was temporarily fixed in place with two Kirschner pins. After the procedures were completed, he was sent to the postanesthetic care unit for emergence and extubation (Fig. 1A).

However, resistance was found while attempting to withdraw the tracheal tube. In order to test the patency of the ET tube, a 14F suction catheter was inserted but could only be passed a short distance into the ET tube. In fear of something occluding or impinging the ET tube, we use a flexible fiberoptic bronchoscope to survey its patency. The examination revealed a Kirschner pin penetrating the ET tube (Fig. 1B and C) and fixing the tube at the maxillary bone. The patient was immediately returned to the operating room to remove the penetrating pin (Fig. 1D). The ET tube was then successfully withdrawn without complication.

2.2. Case 2

Two months after the operation described in Case 1, a 69-year-old male patient of buccal cancer with local invasion of his right upper gingiva and palate, received wide excision of an oral tumor combined with radical neck dissection. After anesthetic induction, a 6.5 mm inner diameter, cuffed ET tube (Curity Tracheal Tube, Kendall), was inserted smoothly by a flexible fiberoptic bronchoscope

Conflicts of interest: All authors declare no conflicts of interest.

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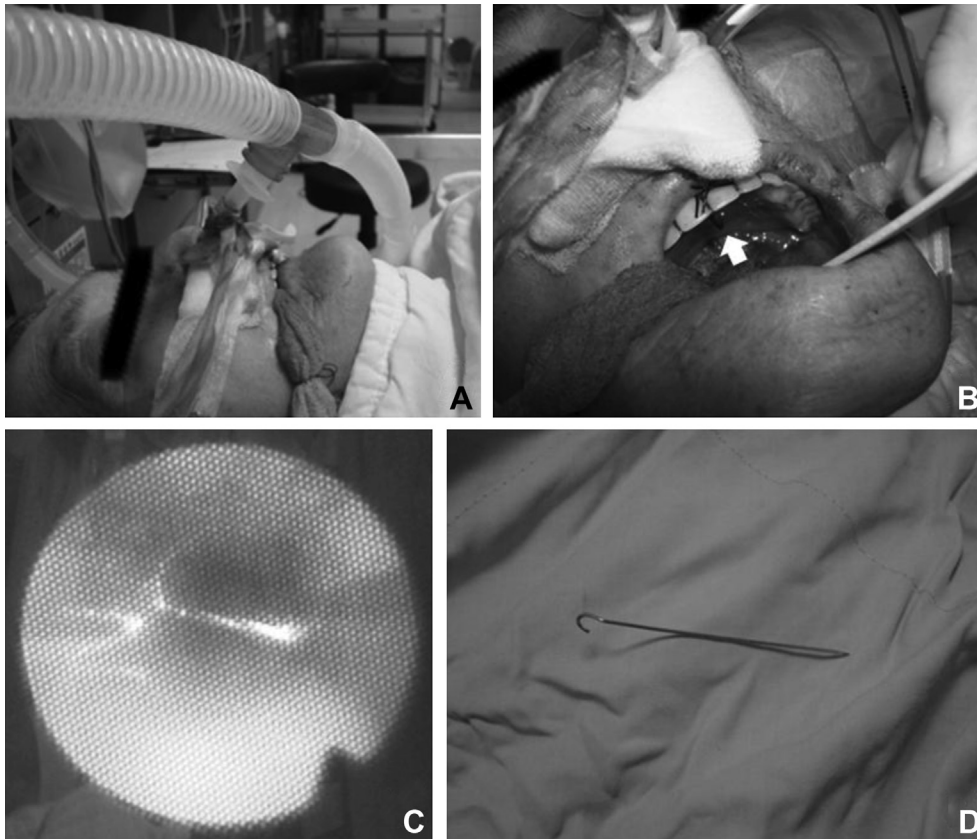


Fig. 1. (A) Case 1 in the postanesthetic care unit. He was still nasotracheally intubated. (B) The picture of the obturator prosthesis fixed with a Kirschner pin (white arrow) at the patient's maxillary bone. (C) The penetrating Kirschner pin in the endotracheal tube. (D) The removed penetrating Kirschner pin.

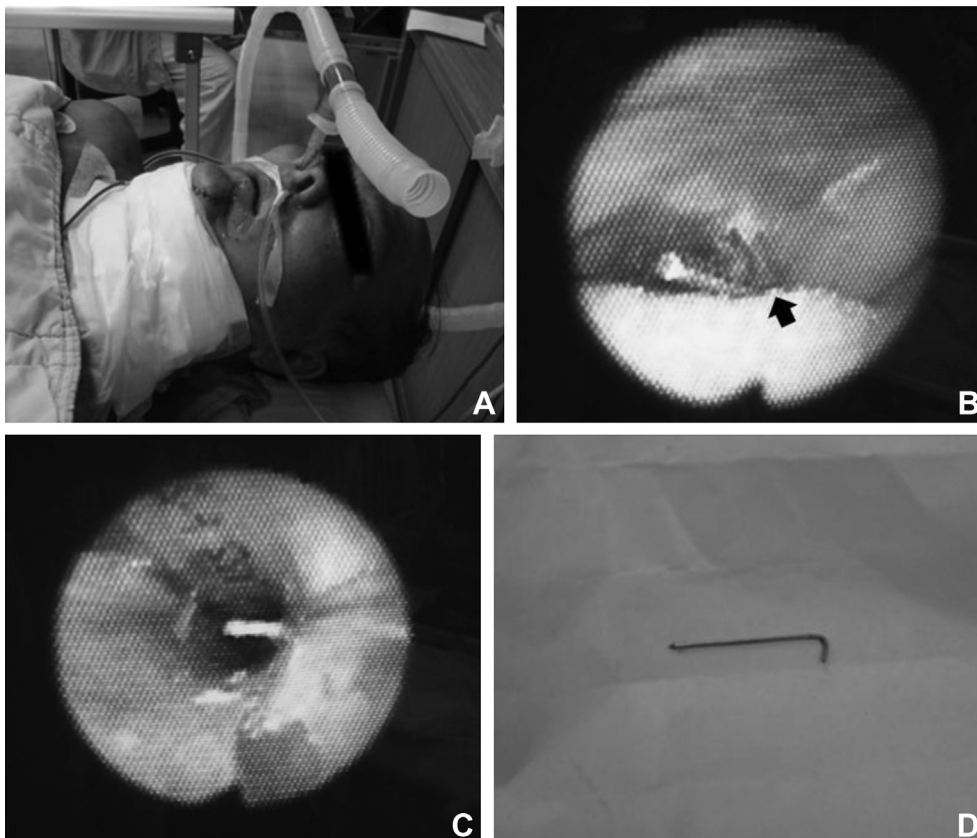


Fig. 2. (A) Case 2 still intubated in the postanesthetic care unit. (B) The Kirschner pin (black arrow) used to fix the obturator also caused the endotracheal (ET) tube fixation. (C) The penetrating Kirschner pin in the ET tube. (D) The removed Kirschner pin that pierced and fixed the patient's ET tube.

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