

Resected bronchial blocker distal tip in bronchus stapler line: an unexpected complication

Bronş stapler hattında kesilmiş bronşiyal bloker ucu: Beklenmedik bir komplikasyon

Tülay Hoşten,¹ Alparslan Kuş,¹ Salih Topçu,² Yavuz Gürkan,¹ Mine Solak¹

Departments of ¹Anaesthesiology and Reanimation, ²Thoracic Surgery,
Medical Faculty of Kocaeli University, Kocaeli, Turkey

Bronchial blockers (BBs) have become the preferred airway device in patients with particularly difficult airway, whose tracheobronchial anatomy is distorted, who may need postoperative mechanical ventilation, and are obese and children.^[1] Therefore, complications associated with these airway devices should be well known.

A 62-year-old, 175 cm tall, 77 kg, American Society of Anesthesiologists physical status class 1 male patient was scheduled for left lower lobectomy. Following anesthesia induction, the patient was intubated with an 8.0 mm ID single lumen tube (SLT). A 9F, 78 cm Arndt bronchial blocker (BB) with elliptic balloon (Cook, Critical Care, Bloomington, USA) was placed in the left main bronchus under direct visual control with a 2.8 mm-diameter fiberoptic bronchoscope. Following right lateral decubitus positioning, the BB balloon was inflated and the optimal position was given (it closed the left main bronchus completely and the upper surface of the balloon did not exceed the main carina). During the bronchial incision step of the surgery, the balloon of the BB was deflated and removed, and the bronchus was closed with a stapler and cut off. When the bronchial staples line was checked at the surgical site, it was seen that the distal tip of the BB was stapled along with the bronchus at the stump line (Figure 1a, b). The staples were removed by the surgical team, the BB was pulled back and the bronchus was sutured with intermittent sutures, and the operation continued. At the end of the operation, the patient was extubated and no complications were observed.

No major or life threatening complications were reported regarding independent BBs (Arndt, Cohen flexitip, Fuji Uniblocker, EZ blocker). As the manufacturer suggests in two case reports on Arndt-related complications, the BB should be detached from the SLT along with its multiport adaptor and the wire in the central channel should be removed during one lung ventilation.^[2,3]

The Arndt has outer diameter sizes of 5, 7, and 9 F and they are 50, 65 and 78 cm in length, respectively. Its balloon can be spherical or elliptical. When the elliptic-shaped Arndt BB balloon is inflated, it is 5 cm in length with the guide wire and 4 cm with the

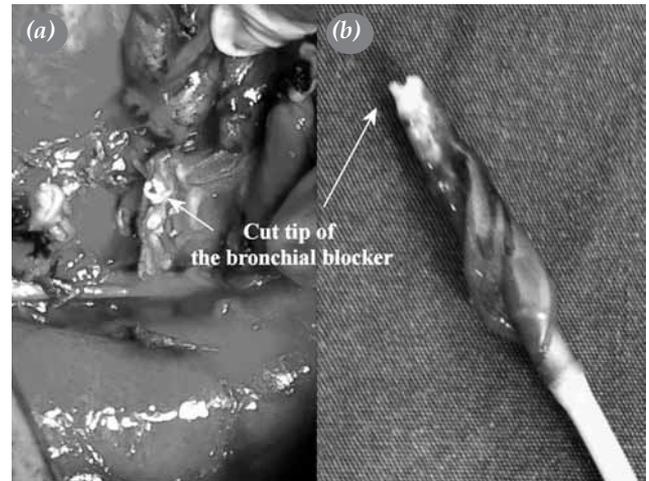


Figure 1. (a) Cut tip of bronchial blocker in stump line. (b) Cut tip of Arndt bronchial blocker.



Available online at
www.tgkdc.dergisi.org
doi: 10.5606/tgkdc.dergisi.2015.10758
QR (Quick Response) Code

Received: August 23, 2014 Accepted: December 23, 2014

Correspondence: Tülay Hoşten, M.D. Kocaeli Üniversitesi Tıp Fakültesi
Anesteziyoloji ve Reanimasyon Anabilim Dalı, 41380 Umuttepe, Kocaeli, Turkey.
Tel: +90 262 - 303 79 03 e-mail: tulayhosten@hotmail.com

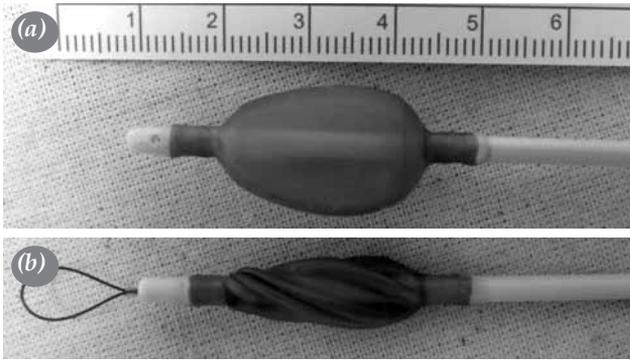


Figure 2. (a) Arndt bronchial blocker with guide-wire. (b) Arndt bronchial blocker with inflated balloon and guide-wire removed during one-lung ventilation.

wire removed (Figure 2a, b). It must be remembered that the inflated balloon reaches as far as 3 cm deep into the bronchus after positioning the BB optimally. In the optimal position, the inflated end of the balloon is at about 0.5 cm distance from the carina.^[4] Despite optimal positioning, this depth can be altered with manipulation during surgery. The anesthesiologist should know both the technical properties of BBs and tracheobronchial anatomy.^[4] Before closing the surgical stapler, checking the site of BB by palpating the bronchus can be helpful in preventing this complication. After closing the bronchial stapler (prior to stapling), the retractability of the BB should

be checked. Cooperation between the surgeon and the anesthesiologist bears extreme importance at this point.

Preventing complications requires sound knowledge of tracheobronchial anatomy and technical properties of BBs, following suggestions of the manufacturer, and close cooperation between the surgeon and anesthesiologist.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Cohen E. Back to blockers?: the continued search for the ideal endobronchial blocker. *Anesthesiology* 2013;118:490-3.
2. Prabhu MR, Smith JH. Use of the Arndt wire-guided endobronchial blocker. *Anesthesiology* 2002;97:1325.
3. Soto RG, Oleszak SP. Resection of the Arndt Bronchial Blocker during stapler resection of the left lower lobe. *J Cardiothorac Vasc Anesth* 2006;20:131-2.
4. Hoşten T, Topçu S. The importance of bronchoscopic anatomy for anesthesiologists. [Article in Turkish] *Tuberk Toraks* 2011;59:416-26.