CORRESPONDENCE

Anesthesiology
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Double-Lumen Tube Malfunction Caused by the Carinal Hook

To the Editor:—Potential problems with carinal hooks include increased difficulty passing the tube through the larynx, laryngeal trauma, amputation of the hook during passage, malpositioning of the tube due to the hook and physical interference when performing a pneumonectomy.[1] We present a case in which tracheal tube orifice obstruction was caused by a carinal hook in a left-sided Carlens double-lumen tube (DLT).

A 57-yr-old woman was scheduled for a left upper lobectomy. Her medical history was unremarkable, and her height and weight were 165 cm and 74 kg, respectively. Chest x-ray and computed tomography scan showed normal airway anatomy except for a space-occupying lesion in the left upper lobe. After induction of general anesthesia and obtaining adequate muscle relaxation, a well lubricated 35-French left-sided polyvinylchloride Carlens DLT (Rüsch, Kernen, Germany) was inserted and rotated using standard technique.[2] After advancing the DLT and encountering some resistance, the tracheal and bronchial cuffs were inflated. Although ventilation of both lumens was attempted, breath sounds were heard only over the left hemithorax, and greater than expected resistance to manual ventilation was detected. A deep insertion of the DLT into the left main bronchus was suspected, the cuffs were deflated, and the tube was pulled back slowly until bilateral breath sounds appeared. Ventilation was possible *via* the bronchial orifice only, and attempts to ventilate the tracheal lumen failed because of high resistance. A fiberoptic examination demonstrated an intact bronchial lumen, but the distal end of the tracheal lumen was obstructed. The DLT was pulled back, and the trachea was extubated. On examination of the DLT, an obstruction of the distal aperture of the tracheal lumen caused by the carinal hook was noted (fig. 1, top).

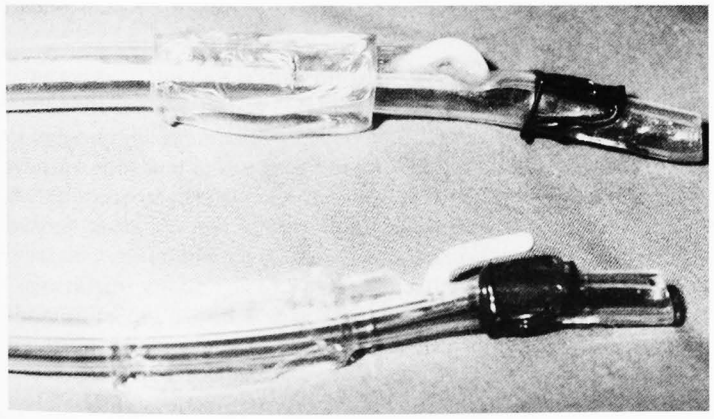

Fig. 1. Tips of an intact (bottom) and malfunctioning Carlens double-lumen tube (top). The carinal hook is bent backward into the distal tracheal aperture.

The exact mechanism leading to this type of DLT obstruction is obscure. Possible sites that could bend the carinal hook back at an angle of 180° include rigid structures and narrow passages, *e.g.*, teeth and vocal cords. However, we speculate that the DLT was advanced too deeply into the left main bronchus. At this point, the hook was bent back by the carina and trapped in the distal orifice of the tracheal lumen. When the DLT was withdrawn to facilitate bilateral lung ventilation, the distal bronchial portion of the DLT straightened, thus further impacting the hook into the tracheal aperture.

This case has demonstrated that carinal hooks in the Carlens DLT can be a hazardous source of tube obstruction. We recommend that close surveillance of this DLT is warranted and that a fiberoptic endoscope should be used routinely in conjunction with it.

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References

1. Benumof JL: Double lumen tube intubation: Separation of the two lungs (double-lumen tube and bronchial blocker intubation), Anesthesia for Thoracic Surgery. Philadelphia, WB Saunders, 1995, pp 334–335
2. Benumof JL, Alfery DD: Anesthesia for thoracic surgery, Anesthesia. Edited by Miller RD. New York, Churchill Livingstone, 1986, p 1399

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How Well Is Patient-controlled Analgesia Managed?

To the Editor:—In a letter to the editor,[1] Ready attempted to define which health-care providers are managing patient-controlled analgesia (PCA). He reports that 73% of responding institutions have an anesthesiology-based acute pain service (APS). However, the data are misleading. Table 1 indicates that 236 institutions have an anesthesia-based APS, whereas table 2 lists 221 institutions with anesthesiologists

participating in the management of PCA. Additionally, based on table 2, the number of institutions indicating their participation in PCA is greater than the number of institutions responding to the survey. From this, we infer that there is an overlap of the groups participating in the management of PCA. However, it is unclear which groups overlap and which have primary responsibility for PCA management. Those with the responsibility will determine the quality of care and ultimately, perhaps, patient outcome.

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In Reply:—Weitz suggests the data in my survey[1] are misleading. I would say rather that they may require additional interpretation.

It was noted that 236 institutions reported having an anesthesiology-based acute pain service, whereas 221 institutions reported that anesthesiologists manage patient-controlled analgesia (PCA). That indicates to me that 15 of the anesthesiology-based acute pain services identified are not managing PCA but provide other forms of analgesia. I am aware of numerous institutions that function in such a manner.

Table 2 lists the therapist group or groups reported to manage PCA by the survey respondents. In some institutions, there was only one group; in others, there were several. When there were a number of therapist groups involved in one institution, each that was identified contributed to the number of responses seen in table 2. The total of the responses therefore is greater than the number of institutions that indicate they offer PCA. The design of the survey was short and simple. An advantage of that approach was a respectable response rate; a disadvantage, as Weitz points out, is a lack of more detailed information about PCA management behaviors.

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Reference

1. Ready LB: How many acute pain services are there in the United States, and who is managing patient-controlled analgesia? (letter). ANESTHESIOLOGY 82:322, 1995

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More on the Language of Anesthesia

To the Editor:—I disagree with the comments made on terminology in the correspondence by Ben-David *et al.*[1] These authors state that the terms "general anesthesia," "conscious sedation," and "combined technique" "confuse and frustrate communication [and create] a linguistic trap with wide ramifications." The patients I interview have no difficulty with these terms or the concepts that they represent. Simply put, a general anesthetic is a drug-induced loss of consciousness, administered usually for the purposes of performing an otherwise unpleasant surgical procedure. Our own definition within the specialty may refer to muscular relaxation and reduction of reflex activity, but those descriptions are unnecessary during discussions with patients. Whether the entire autonomic and hormonal response to a surgical procedure is blocked by the general anesthetic is irrelevant to the patient as long as there is no awareness of pain (Ben-David *et al.* misuse the word pain, which is a conscious sensation). It may be true that the nervous system is not entirely insensitive, but with adequate anesthesia, the patient does not move in response to a supramaximal stimulus, *e.g.*, the patient appears to be

insensitive, and therefore, the word anest
derivation (an = neg, aisthesis = Greek fe
Conscious sedation is sedation that occu
sciousness. Although some philosophers r
term consciousness, it is a common lay w
presence of self-awareness. If one is sedat
this is "conscious sedation." Finally, the
a regional anesthetic but also wants to
procedure can readily understand that a
meet their needs, even though they wou
gional method alone. Patients having up
epidural anesthesia may be upset if they
adequately. In these cases, I find it usefu
with tracheal intubation and controlled
dicrous if I would refer to this anesthet
"epidural anesthesia with deep sedatio
If we say to our patients that we ar
anesthetic," ask them to turn on their s
cm needle into their back, I think most p
would ask for a more specific definition
"anesthetic" in this case. I submit that
with the term "combined anesthetic"
advantages this technique offers such

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In Reply:—We find it difficult to a
he and his patients have a common un
of these terms when, as evidenced by
who are educated in the field cannot
the opposite of his. We commonly r
hearsay, insist on one anesthetic or
what they are talking about. They ma
"general anesthetic" as to a life raft
the ensuing discussion, it may become
the patient does not want to be awa
and empathetic explanation that this
eral anesthesia" is not always succe
This is just one of many examples
terms frustrate communication.

As to the definition of "general an
it is simply a drug-induced loss of c
awareness of pain and the patient d
monary bypass. Several percent of p
thesia" may have awareness and reca
a figure not much different than tha
plasty under "local anesthesia with
tally, are often adamant about not
as if the avoidance of this term makes

We agree that nociception unde
pain *per se*. This is why we introd
ciceptive afferent stimuli." "Pain is
accepted definition. However, with
ciceptive hyperexcitability ("windu
inclusive. The patient's consciousn