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Bilateral Upper Lobe Obstruction from a Single Double-lumen Tube

To the Editor:—We recently cared for a patient in whom both upper lobe bronchi were simultaneously obstructed by a single double-lumen endobronchial tube (DLT).

Case Report. A 68-yr-old, 188-cm, 100-kg man was scheduled for right thoracotomy. Routine bronchoscopy prior to surgery revealed that his right upper lobe bronchus originated above the carina in the trachea. In the operating room, a 41-Fr left DLT was advanced down his trachea until resistance to further passage was encountered. Both cuffs were then inflated with air, and breath sounds were present bilaterally. Following occlusion of the tracheal lumen, breath sounds were completely absent over the right lung, while the presence of breath sounds over the left chest indicated that the tube was in the left main bronchus. Breath sounds were loudest over the left lower chest. The clamp was removed and reapplied to the bronchial lumen. Breath sounds were now present only over the right lower lung field. At this point the bronchial cuff was deflated. Breath sounds now were present over the entire left lung and over just the right lower lung field.

A fiberoptic bronchoscope was introduced down the tracheal lumen, and the DLT was withdrawn until the blue endobronchial cuff was visible immediately below the carina in the left main bronchus. As the tube was withdrawn, the orifice of the right upper lobe bronchus came into view in the trachea. It was apparent that the inflated tracheal cuff had obstructed the right upper lobe bronchus, while breath sounds could now be heard over the left upper chest, indicating that the bronchial cuff had simultaneously obstructed the orifice of the left upper lobe bronchus (fig. 1). Sequential clamping of each lumen was now followed by clear breath sounds over the entire contralateral lung, and there was obvious improvement in lung compliance, as less pressure was now needed to inflate each lung during one-lung ventilation.

Discussion. Bronchial cuff obstruction of either the left or right upper lobe bronchi from a DLT advanced too far into the main bronchus is a well-known occurrence[1] and is usually easily recognized by careful auscultation.[2] In order for both upper lobe bronchi to be obstructed with a left DLT, the bronchus to the right upper lobe must originate at or above the carina. Tracheal takeoff of the right upper lobe bronchus was present in 5 of 1,250 (0.4%) patients bronchoscoped,[3] and the incidence this anomaly may be as high as 2% in patients with congenital heart disease.[1] Simultaneous bilateral obstruction of both upper lobe bronchi has not been previously reported. This rare complication of DLT placement was suggested by careful auscultation and was confirmed by fiberoptic bronchoscopy.

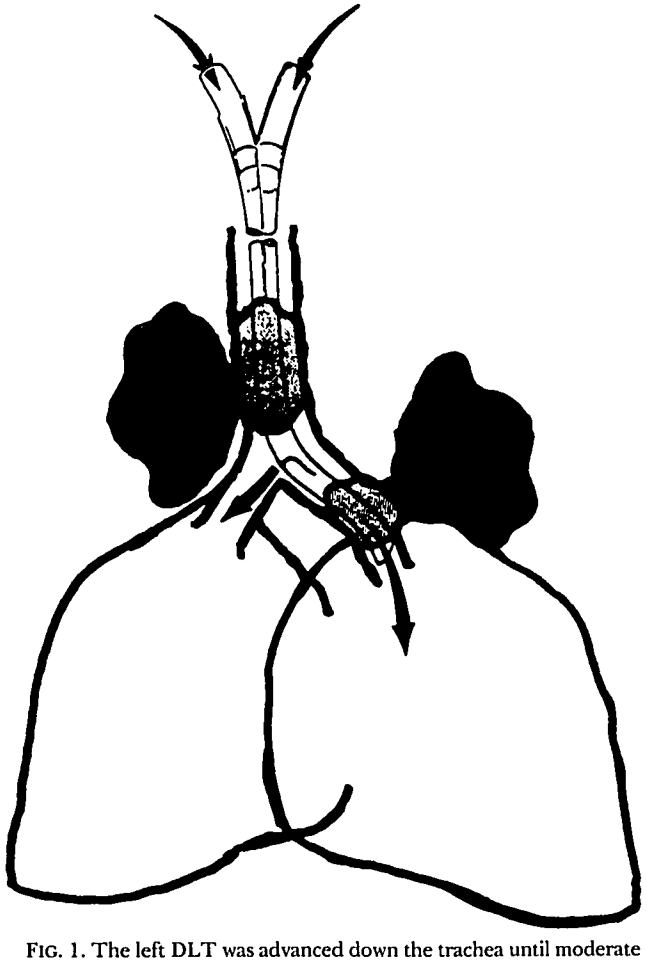

FIG. 1. The left DLT was advanced down the trachea until moderate resistance to further passage was encountered. With the tube in this position while ventilating the patient through both lumens of the DLT, the left upper lobe bronchus was obstructed by the inflated bronchial cuff while the right upper lobe bronchus, which originated in the trachea, was simultaneously obstructed by the inflated tracheal cuff.

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Unrecognized Cyanosis during Laser Treatment of Cutaneous Vascular Lesions

To the Editor:—The flash-lamp pumped 585-nm tunable pulsed dye laser is currently used extensively in the treatment of cutaneous vascular lesions.[1] At the 585-nm wavelength range (yellow color), this laser is able to pass through epidermis and be absorbed preferentially by oxyhemoglobin in blood vessels.[2] This allows lesional resolution with a dramatic diminution in cutaneous side effects. During the use of this laser, all room personnel as well as the patient need eye protection to prevent retinal damage. The patient's eyes can be closed and covered by an opaque material, while the laser operator and others in the room must wear protective eyewear. Protective glasses and goggles intended for use with this laser block light efficiently in the 577–585-nm range.

The effect of wearing this eyewear, besides protection, is a highlighting of red colors and diminution of blue hues. On more than one occasion, we have noted sedated patients who appeared to be clinically well-oxygenated but in whom oxyhemoglobin saturation (Sp_{O_2}) was decreasing. Only with the removal of the protective eyewear was cyanosis readily apparent. In view of this problem, it is imperative that pulse oximetry be used and meticulously followed during the course of anesthesia for laser treatment of cutaneous skin lesions. We also recommend periodic patient assessment without protective eyewear during the procedure, while the laser is on standby. Supplemental oxygen for sedated patients should also be considered, keeping in mind the incendiary potential of this laser as recently reported by Epstein *et al.*[2] Since other lasers used in the treatment of cutaneous vascular lesions (such as the copper-vapor and argon-pumped tunable dye laser) also emit a yellow color, protective eyewear used during their operation could potentially cause similar distortion.

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New Anatomic Landmarks for Percutaneous Catheterization of the Internal Jugular Vein

To the Editor:—One of anatomic reasons for choosing the internal jugular vein (IJV) for central venus cannulation is its consistent position in the neck,[1] and most approaches use the sternocleidomastoid muscle as a landmark.[2] The carotid artery (CA)[3] and the IJV itself[4] can also be palpable and visible landmarks. In some cases of anesthetized patients and obese patients, however, all of the above landmarks are less apparent, and it is even more difficult to identify these landmarks during cardiac arrest. For those reasons, we have developed a new approach for internal jugular venipuncture using bony rather than soft tissue landmarks. In order to validate our experience, we evaluated the new approach in 134 patients prospectively.

With institutional approval and written informed consent from patients, our new approach to internal jugular venipuncture was employed for placement of a pulmonary artery catheter in 134 (96 male, 38 female) anesthetized patients ranging in age from 21 to 84 yr, who were to undergo major abdominal surgery. After general anesthesia