Bronchial Erosion by an Indwelling Central Venous Catheter*

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Despite improved technology, central venous catheters are associated with many complications that occur usually within 48 h of placement. We report a 42-year-old man with a rare erosion of a venous catheter (Silastic) into a bronchus 2 years after its insertion.

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Key words: Bronchus; catheter; complication; erosion; venobronchial.

Indwelling central venous catheters are widely used for the treatment of patients requiring chronic venous access. These patients include those with malignant neoplasms or chronic infections. Aside from the well-known complications associated with central venous catheter insertion, there may be serious problems from long-term placement of these devices.

CASE REPORT

A 42-year-old black man had a catheter (Port-a-Cath) inserted in the left jugular vein to treat T-lymphocyte leukemia. The catheter was left in place for further therapy should remission not occur. This was done 2 years prior to presentation at our institution. He was unavailable for follow-up by the institution that placed the catheter and was admitted later to a long-term rehabilitation facility for drug addiction. There was no evidence of intravenous drug use. Three days prior to presentation, the patient experienced a coughing episode approximately 30 min after a routine flush of the catheter. At presentation, he complained of anterior chest and neck pain, but denied dyspnea. Physical examination disclosed no abnormalities except for a subcutaneous reservoir well anchored to the left pectoral muscle. His ECG findings were normal as were the results of his hematologic and blood chemistry profiles. A chest roentgenogram was obtained immediately after radiographic contrast was injected into the Port-a-Cath catheter (Fig 1).

He was taken to the operating room and, while under general anesthesia, he underwent fiberoptic bronchoscopy with injection of methylene blue dye into the Port-a-Cath catheter. The dye emanated from the anterior segment of the right upper lobe. A Fogarty bronchial occlusion catheter was positioned in the right mainstem bronchus, tested, and the Port-a-Cath catheter was removed intact. No bleeding occurred. He was discharged the following day.

DISCUSSION

Central venous-related catheter complications are grouped into those associated with insertion, such as pneumothorax and hemothorax, and late complications, including sepsis and subclavian vein thrombosis. Other serious complications include delayed erosions of catheters through the vein into the pericardium or pleural space.1 Most vascular perforations cause symptoms within 24 to 48 h after insertion and these symptoms include dyspnea and chest pain. The associated physical or radiologic signs are pleural effusion, respiratory failure, or mediastinal widening.

Most catheters that perforated the central venous system were inserted into the left subclavian vein. Duntley et al1 refer to the azygos recess in the proximal superior vena cava as the "danger zone." This is because central venous catheters approaching the superior vena cava through the left brachiocephalic vein make an angle that promotes “catching” of the catheter tip at the ostium of the azygos vein. A catheter abutting the superior vena cava within 45° of perpendicular is predisposed to perforate the lateral wall of the superior vena cava. In our patient, the catheter achieved this angle. Also the administration of sclerosing fluids like total parenteral nutrition or chemotherapeutic medication can hasten erosion. Although repetitive catheter manipulation by the patient might have contributed to the problem, the historical, physical, and operative findings did not support this mechanism.

Table 1 summarizes earlier reports of venobronchial fistulas. Our case differs from the others because of the prolonged time from catheter insertion to erosion and because a diagnosis was made before a serious respiratory complication occurred. The diagnoses for all these patients were suggested by symptoms, radiographic studies, bronchoscopy, or sputum testing for glucose. All patients survived after treatment for this problem.

We were confronted with planning the safe removal of this catheter. We found the option of simple catheter removal as unacceptable because of possible uncontrollable bleeding into the airway. Serious venous air embolism also

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was a theoretical possibility but was not previously described.\(^5\) Although no severe airway bleeding occurred in this case or previous reports, we recommend venobronchial catheter removal with careful preparations to control major hemoptysis. This is because previous experience with this complication is insufficient to warrant a less aggressive approach. A venobronchial fistula should be considered in patients who suddenly develop a cough or other pulmonary symptoms during use of chronic left-sided central venous catheters.

**REFERENCES**


**Mycobacterium scrofulaceum**

Infection Presenting as Lung Nodules in a Heart Transplant Recipient*

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Pulmonary nodules have been reported in up to 10 percent of heart transplant recipients. Most are infectious, with opportunistic pathogens most common. Atypical mycobacteria have not been reported as the etiology of pulmonary nodules in a heart transplant recipient. We report a case of *Mycobacterium scrofulaceum* infection presenting as three discrete pulmonary nodules.

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**Key words:** atypical mycobacteria; heart transplantation; lung nodule; *Mycobacterium scrofulaceum*; opportunistic infection

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*Mycobacterium scrofulaceum* Presenting as Lung Nodules (LeMense et al)*