Netting the Diagnosis: A Novel Use of an Endoscopic Basket Retrieval Device Combined With Pleuroscopy to Biopsy and Diagnose Malignant Mesothelioma

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Abstract

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INTRODUCTION: Pleuroscopy is a minimally invasive procedure done under conscious sedation to visualize and biopsy the pleura. We present the case of a patient diagnosed by semi-rigid pleuroscopy with malignant mesothelioma in which the biopsy was performed through the novel use of a basket retrieval device typically used to remove foreign bodies within the gastrointestinal or respiratory tracts.

CASE PRESENTATION: Our patient was a 79 year old man who presented with gradually progressive dyspnea. He was a former smoker and had a history of asbestos exposure. Chest x-ray revealed a massive unilateral pleural effusion. Ultrasound showed free flowing fluid and multiple pleural based polypoid masses. Large volume thoracentesis demonstrated a lymphocytic exudate. No malignant cells were found. As the clinicoanatomographic appearance was concerning for malignancy, semi-rigid pleuroscopy was performed. The parietal pleura and diaphragm were noted to be studded with polypoid tumors that were soft, fragile, and difficult to grasp. Using an endoscopic basket retrieval device we were able to ensnare and remove a 1.5 cm tumor en bloc for histopathologic evaluation. The patient was ultimately diagnosed with malignant mesothelioma.

DISCUSSION: When we inspected the pleura, we noted very soft and fragile polypoid masses. Due to the consistency, the standard flexible biopsy forceps could only remove small fragments of tissue. Smaller fragments of tissue in pleural tumors are often non-diagnostic. A major criticism of the single port semi-rigid pleuroscopy is that biopsy samples are smaller than in rigid thoracoscopic biopsies. The basket retrieval device allowed us to obtain very large biopsy specimens that were comparable to rigid techniques yet still used the semi-rigid pleuroscopy technique.

CONCLUSIONS: This case illustrates the novel use of the endoscopic basket retrieval device within the pleural space to overcome some of the inherent limitations of semirigid pleuroscopic biopsies and increase the yield for diagnosis with this minimally invasive technique. Understanding the technical limitations of our newer minimally invasive procedures allows us to apply novel approaches to overcome these limitations and ultimately improves patient care.


**DISCLOSURE:** The following authors have nothing to disclose: Andrew Philip, Scott Parrish, Robert Browning

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