



# Surgical management of pleural empyema

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Empyema is an ancient disease that continues to be an important clinical problem. Despite the widespread use of antibiotics and availability of pneumococcal vaccines, empyema remains the most common complication of pneumonia and an important cause of morbidity and mortality worldwide. There are approximately one million patients hospitalized in the United States each year with pneumonia. Of those hospitalized, 20–40% have a parapneumonic effusion, and 5–10% of these parapneumonic effusions progress to empyema (approximately 32,000 patients per year in the United States) (1). Approximately 15% of these patients die, and 30% require surgical drainage of the pleural space (2,3).

The incidence of empyema diminished significantly during the first half of the 20th century (4). In the pre-antibiotic era empyema was a complication of 5% of cases of pneumonia, but with the development and wide-spread adoption of antibiotics in the 1940s, the rate of empyema dropped to 2% of pneumonia cases (5). However, this trend changed in the 1990s, and the incidence of empyema in the United States has been increasing (6).

The authors of this review advocate the use of a video-assisted thoracoscopic approach to decorticate patients with stage II empyema. This was also the conclusion and recommendation of the recently published *The American Association for Thoracic Surgery Consensus Guidelines for the Management of Empyema* (7). This recommendation was a class IIa, level of evidence B, indicating that it is reasonable to conclude that the benefit of this approach appears to outweigh the risks based on evidence which are primarily non-randomized studies.

Chambers *et al.* reviewed 14 studies to specifically address the question of VATS versus open approach to adults with

empyema (8). The majority of studies analyzed were single institution, retrospective cohort studies with number of patients studied ranging from 48 to 420 and most groups included a mix of stages II and III empyema. The outcomes of these studies were consistent in demonstrating that VATS offers superior clinical outcomes in terms of treatment of empyema while also resulting in decreased length of stay, less pain and less overall morbidity.

Drs. Scarci and Raveglia have provided a number of useful and practical technical tips on surgical technique in this review, which are recommended to the reader.

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