

Immediate video-assisted thoracoscopic surgery for empyema

Pleural infections remain a frequent clinical condition, with an approximate annual incidence of 80 000 cases in the UK and USA, combined.[1] Of patients hospitalised for pneumonia, 20 – 40% will be complicated by a parapneumonic effusion, and 5 - 10% will progress to empyema. Empyema remains an important cause of morbidity and mortality worldwide. The mortality rate from pleural empyema ranges between 6 and 25%.[1]

Early-stage empyema has traditionally been managed with tube thoracostomy and antibiotics, with more advanced stages requiring one or other forms of surgical intervention.[2,3] The MIST2 trial demonstrated a reduced frequency of surgical referrals with the use of tissue plasminogen activators and DNase.[4] The precise role of these agents remains unclear, and the data pertaining to the subsequent requirement for surgical intervention is mixed. There is likely some role for TPA and DNAase combination therapy in making patients unsuitable for surgical intervention.

Current published consensus statements recommend video-assisted thoracoscopic surgical (VATS) decortication with early conversion to open thoracotomy in cases where there is no resolution of a later-stage empyema [2, 3]. A 2013 review found that, among other factors, prolonged delay from diagnosis to operation was a significant risk factor for the subsequent likelihood of conversion to thoracotomy [5].

Recently, a group of researchers at the Tokyo University Hospital sought to establish the effectiveness of immediate VATS for patients with empyema [6]. The procedure was defined as one performed within 3 days of a physician-diagnosed empyema. According to the group, the results of previous randomised and observational studies on the subject remained unclear. The study was multicentre, retrospective, and involved 744 patients. The primary aim was to determine whether immediate VATS improves clinical outcomes in patients with empyema. The clinical outcome of interest was mortality at 30 days. Secondary outcomes were 90-day mortality, length of hospital stay, and time from diagnosis to discharge. 53 patients (7.1%)

had undergone immediate VATS. A comparator group made up of 691 patients received ‘usual care’. Usual care was defined as any treatment other than VATS within 3 days of diagnosis and included tube drainage, antibiotic therapy, and intra-pleural fibrinolytic therapy. The group used propensity score weighting in an attempt to take care of potential confounders.

The authors found that immediate VATS significantly reduced the length of hospital stay and time from diagnosis to discharge, and they believe the study makes a case for thoracic surgeons to be involved upon diagnosis. The authors could not draw valid conclusions on mortality outcomes and attribute this to the small number of cases that underwent immediate VATS. The group believes the true treatment effect on mortality might be too little to be detected by the small sample size.

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