

General Thoracic Surgery: Prevention, Early Detection, And Management Of Complications After 328 Consecutive Extrapleural Pneumonectomies

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Objective: Extrapleural pneumonectomy for therapy of mesothelioma has been associated with significant perioperative mortality and morbidity. Postoperative complications of this procedure require a unique management approach. We developed treatment algorithms for most of the common complications of extrapleural pneumonectomy resulting in reduced mortality and hospital stay. Complications after extrapleural pneumonectomy were further analyzed to elucidate means of prevention, early detection, and treatment.

Methods: A total of 496 patients undergoing extrapleural pneumonectomy were reviewed for mortality rates, with a subset of 328 consecutive patients between 1980 and 2000 who were examined for detailed morbidity data by using a prospective clinical database.

Results: Median age was 58 years (range, 28-77 years), with a 10-day (range, 4-101 days) median length of stay. One hundred ninety-eight (60.4%) of 328 patients experienced minor and major complications, and 11 of 328 patients died, for an overall mortality rate of 3.4%. Complications included the following: atrial fibrillation (145 [44.2%]), prolonged intubation (26 [7.9%]), vocal cord paralysis (22 [6.7%]), deep vein thrombosis (21 [6.4%]), technical complications (patch dehiscence, hemorrhage, or both; 20 [6.1%]), tamponade (12 [3.6%]), acute respiratory distress syndrome (12 [3.6%]), cardiac arrest (10 [3%]), constrictive physiology (9 [2.7%]), aspiration (9 [2.7%]), renal failure (9 [2.7%]), empyema (8 [2.4%]), tracheostomy (6 [1.8%]), myocardial infarction (5 [1.5%]), pulmonary embolus (5 [1.5%]), and bronchopleural fistula (2 [0.6%]). Clinical data demonstrated the following: (1) prophylaxis for atrial fibrillation is recommended; (2) early ambulation, aspiration precautions, endoscopic assessment of the vocal cords, and avoidance of fluid overload are crucial; (3) perioperative diagnosis and aggressive management of deep vein thrombosis are important; (4) immediate reoperation and open cardiac massage are essential for relief of cardiac herniation and tamponade from cardiac patch dysfunction; (5) diaphragmatic patch dehiscence, hemorrhage, or both require immediate reoperation; (6) early signs of infection might indicate bronchopleural fistula or empyema and should be treated with thoracoscopic or open drainage and staged removal of patch material; and (7) excessive perioperative mediastinal shift is treated with a catheter placed intraoperatively.

Conclusion: Complications after extrapleural pneumonectomy require a unique approach to management, and mortality can be minimized by early detection and aggressive treatment.