

Surgical Treatment of Massive Pulmonary Emboli

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Background

Massive pulmonary embolism (MPE) is an infrequent but devastating clinical event which carries high morbidity and mortality. Treatment of MPE is controversial in the clinical literature. Surgical pulmonary embolectomy is one of the treatments available for unstable patients. The purpose of this study was to evaluate our early, mid, and long term results after pulmonary embolectomy.

Methods

Between November 1999 and March 2009, 13 patients (mean age 53.8 ± 16.14 years) diagnosed with a MPE were operated in our department emergently. The indications for surgical intervention were: hemodynamic instability, right heart failure (RHF; per echocardiography), respiratory failure, and massive PE diagnosed by CT angiography. All 13 patients had an embolism involving the main pulmonary branches. Nine of the patients arrived after cardiopulmonary resuscitation (CPR) and eight were intubated and ventilated prior to entering the operating room. All procedures were performed using extracorporeal circulation, 4 on a beating heart (without aortic cross-clamping). All surviving patients were followed and reported their medical condition in a telephone survey.

Results

Average bypass and cross-clamp times were 82.76 ± 37.41 (40-158) and 38.66 ± 22.7 (20-91) minutes, respectively. Time interval between diagnosis and start of surgery was 14 ± 16.99 (2-62) hours. Postoperative length of stay was 12.2 ± 6.18 (4-23) days. Short-term mortality occurred in three (23%) patients; causes of death were anoxic brain damage (1), AMI (1), and RHF(1). Long-term mortality occurred in two patients, one from heart failure and one from oncological disease two years later. The remaining 8 patients were in a good general condition at long-term follow-up. Six were being treated with anticoagulation for life, and two were on Aspirin only.

Conclusions

Emergent pulmonary embolectomy proved to carry a relatively good short and long term survival even in very high risk patients.