

Early and long-term outcomes of surgical pulmonary embolectomy: a single-centre experience.

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Background

Pulmonary embolectomy is an extremely rare treatment method for patients with acute pulmonary embolism in whom available treatment modalities are contraindicated or ineffective. As "life-saving" procedures, they are associated with high mortality rates. In the literature, based on registries, in-hospital mortality is approximately 20%.

Methods

Between 2013 through March 2021, 32 consecutive patients underwent emergency surgical pulmonary embolectomy for pulmonary embolism; 16 women and 16 men; mean age 51 (range 24-84). According to the ESC guidelines, 9 patients were at high risk, 23 patients at intermediate high risk; 2 patients needed cardiopulmonary resuscitation before surgery; thrombolytic treatment was contraindicated in 9 patients, fibrinolytic treatment was ineffective in 5 patients, 1 patient after failed percutaneous embolectomy. In 22 patients, thrombi were found in the right heart cavities, including thrombi wedged in the patent foramen ovale in 4 patients. All patients were operated with extracorporeal circulation in deep hypothermia with complete cardiac arrest.

Results

Mean length of hospitalization 22 days (3-65 days); mean length of stay in the intensive care unit 10 days (2-65 days); mean time of deep hypothermic cardiac arrest 21 minutes (3-48 minutes); 4 patients underwent extracorporeal membrane oxygenation (ECMO) postoperatively. No neurological complications occurred in the whole group. Hospital mortality - 6.25% (2 patients), in the high risk group 11.1% (1 patient), in the intermediate high risk group 4,35% (1 patient). Mean follow-up time - 31 months (3-90 months). In the long-term follow-up, two deaths due to malignancies (Ewing's sarcoma, myelodysplastic syndrome) were reported.

Conclusions

Surgical pulmonary embolectomy has the potential to provide excellent early and long term results.