

Chapter 1

SURGICAL MANAGEMENT OF ACUTE AND CHRONIC PULMONARY EMBOLISM

Mihriban YALÇIN¹

INTRODUCTION:

Pulmonary embolism (PE) is a common and life-threatening emergency cardiovascular disorder.

PEs are categorized either as submassive or massive. When unexplained hypotension is present, acute PE is defined as massive. These patients have especially high risk of mortality due to right ventricular (RV) failure and cardiovascular collapse. (LeVarge, Wright & Rodriguez-Lopez, 2018)

Acute massive pulmonary embolism is related with high mortality and morbidity rates, in spite of advances in diagnosis and therapy. Right ventricular failure and shock can be seen in patients with massive and submassive acute PE. In some patients, endogenous thrombolysis mechanisms fail and chronic PE develops. Systemic thrombolysis, catheter-based thrombolysis or embolectomy, extracorporeal membrane oxygenation (ECMO) support, and surgical embolectomy are treatment strategies. (LeVarge, Wright & Rodriguez-Lopez, 2018)

Surgery can be effective in treatment of convenient patients with acute and chronic PE.

INCIDENCE AND ETIOLOGY:

The incidence of PE increases with age, especially in the 7th decade, and is more common in males at this age. In the group under the age of fifty years, it is seen more frequently in women due to pregnancy and oral contraceptive use. (Peter & Fedullo, 2000)

In situ pulmonary arterial thrombus is rarely seen. 80-90% pulmonary embolism is the most serious complication of deep venous thrombosis; the diagnosis, however, can be difficult due to the atypical presentation. (Hirsch, 1990)

¹ MD, Ordu State Hospital Department of Cardiovascular Surgery, mihribandemir33@hotmail.com

CONCLUSION:

Pulmonary embolism (PE) is related with high mortality and morbidity rates. Surgical pulmonary embolectomy and pulmonary thromboendarterectomy are well-known strategies for treating patients with acute and chronic PE.

Both techniques [pulmonary embolectomy and thromboendarterectomy (PTE)] require sternotomy and cardiopulmonary bypass, but PTE also requires deep hypothermic circulatory arrest (intervals of 20 minutes with a 10-minute reperfusion period). (Shemin,2017) Anticoagulation should be started as soon as possible after maintaining postsurgical hemostasis and the patients remain on anticoagulation for life. Pulmonary embolectomy for acute pulmonary emboli and thromboendarterectomy for chronic disease is appropriate with correcting the accompanying surgical problem.

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