

## **Pulmonary Endarterectomy for Chronic Thromboembolic Pulmonary Hypertension**

*Kogan, Alexander<sup>1</sup>; Ben Dov, Issachar<sup>2</sup>; Orlov, Boris<sup>1</sup>; Preisman, Sergey<sup>3</sup>; Sternik, Leonid<sup>1</sup>; Raanani, Ehud<sup>1</sup>; Schafers, Hans-Joachim<sup>4</sup>*

*<sup>1</sup>Sheba Medical Center, Department of Cardiac Surgery, Ramat Gan, Israel; <sup>2</sup>Sheba Medical Center, Pulmonology Department, Ramat Gan, Israel; <sup>3</sup>Sheba Medical Center, Anesthesiology Department, Ramat Gan, Israel; <sup>4</sup>Uniklinikum-Saarland, Department of Cardiothoracic Surgery, Hamburg, Germany*

Background: In cases of chronic pulmonary emboli, surgery has the potential to dramatically improve or, in some cases, cure pulmonary hypertension. In large volume referral centers pulmonary endarterectomy is safe and effective surgical treatment. The operative and early post-operative management is complex and experience of the OR and ICU team is considered crucial for obtaining good outcomes. We evaluated the results of pulmonary endarterectomy performed by experienced visiting surgeon (HJS) in non experienced peri-operative setup.

Methods: from 2009, 7 patients who underwent pulmonary endarterectomy for severe pulmonary hypertension. All patients suffered from hypoxemia and significant right heart failure pre-operatively. Bilateral pulmonary endarterectomy was performed under cardiopulmonary bypass with short periods (10-20 minutes) of profound hypothermic circulatory arrest.

Results: All 7 patients survived and had significant decrease in systolic pulmonary artery pressure  $94.2 \pm 26.6$  mmHg vs.  $33.7 \pm 15.6$  mmHg ( $p < 0.001$ ) and pulmonary vascular resistance  $697 \pm 212$  dyn $\times$ s $\times$ cm<sup>-5</sup> vs.  $123 \pm 54$  dyn  $\times$  s  $\times$  cm<sup>-5</sup> ( $p < 0.001$ ) postoperatively compared to preoperative data. Mid-term follow-up showed that the cardiac function of all cases returned from NYHA class III-IV to I-II, with great improvement in 6-minute walking distance  $308 \pm 36$  m vs.  $486 \pm 87$  m ( $p < 0.01$ ) and quality of life.

Conclusions: This setup resulted in very low mortality and very good clinical outcomes.