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Pulmonary endarterectomy and concomitant cardiac procedures

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Objective

- Pulmonary endarterectomy is a successful method in treatment of chronic thromboembolic pulmonary hypertension. Concomitant heart disease in the CTEPH patient population that is surgically treatable is relatively common. Concomitant diagnoses such as coronary artery disease, heart valve diseases or atrial fibrillation in patients with CTEPH represent a significant part in our cohort. The standard of our department is to treat such patients, despite the higher risk and demands on the entire team, during PEA.

Methods

- Patient‘s data who underwent combined procedure from 2004 to 2026 were retrospectively analyzed.

Results

- From 2004 to February 2026, 590 PEA were performed at our centre. A combined procedure was performed in 159 patients for other heart diseases, which represents 26.9%. Men were represented in 75.5% and women in 24.5%. The most common combined procedure was coronary bypass grafting (CABG) in 70 procedures (44.0%). Furthermore, foramen ovale closure in 43 (27.0%) cases, MAZE procedure w/o left atrial appendage closure (LAAO) in 32 (20.1%), aortic valve replacement in 13 (8.2%) patients. A different procedure was performed in 4 patients (2.5%). PEA with 2 concomitant procedures was performed in 18 (11.3%), 3 or more combination procedures in 2 (1.3%) patients. The mean lenght of surgery was 394 minutes, the mean length of ECC was 294 minutes. The mean length of stay at the ICU and intermediate care unit was 7.5 days in the group, and the mean length of hospitalization was 13 days. Mortality in this group of riskier and more complicated patients was 7.5% in the entire group, in the recent period it has been below 4%.

Discussion

- Data analysis from the beginning of the PEA program in the Czech Republic in 2004 to February 2026 shows that almost more than 26% of PEA procedures were performed together with other surgical procedures. The most common was CABG. A crucial moment in the treatment of these high-risk patients is the careful consideration of the indication and evaluation of risks and benefits by the entire multidisciplinary CTEPH team. Combined procedures, as statistics show, usually do not extend the duration of the operation, most of them are performed in the warm-up phase, or even on the beating heart, which shortens the length of the X-clamp time. Mortality in this subset is very similar to the overall mortality of the entire cohort in the recent period.

Conclusion

- The PEA program in the Czech Republic is part of a highly specialized center for pulmonary hypertension at the General University Hospital in Prague, providing a full spectrum of treatment modalities in the care of patients with CTEPH. Comprehensive surgical care for patients with associated heart disease is the standard of our department. After more than 21 years of the program, a stable multidisciplinary team has been established, which plays a vital role in the treatment of these patients. Performing a combined procedure for PEA is feasible with similar risks as PEA alone.