Atrial Fibrillation
Endoscopic ablation and Postoperative studies

av

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Akademisk avhandling

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Abstract

**Introduction:** Atrial fibrillation (AF) is associated with an increased risk of stroke, heart failure and cardiovascular death. Initial treatment focuses on rhythm or rate control and anticoagulation after risk assessment. Catheter ablation (CA) is an option in highly symptomatic patients but is less effective in long-standing persistent AF (LSPAF). Total endoscopic ablation is an alternative, but its clinical role needs further evaluation. In patients undergoing aortocoronary bypass graft (CABG) surgery, up to 9% present with preoperative AF. One-third experience postoperative AF, which is associated with increased hospital stay, risk of stroke and decreased long-term survival. The long-term effects on heart rhythm have not been studied.

**Methods and Results:** 571 patients undergoing CABG from 1999 to 2000 were followed for six years. Postoperative AF was the strongest independent risk factor for late AF and an age-independent risk factor for late mortality. 615 patients from the same cohort, including patients with preoperative AF, were followed up at 15 years. Death due to cerebral ischaemia, heart failure and sudden death were most common in the pre- and postoperative AF groups. The presence of pre- or postoperative AF was an independent risk factor for late mortality.

In our first ten patients, total endoscopic ablation of AF using a right-sided unilateral approach was feasible and safe with acceptable results. 36 patients with symptomatic LSPAF were then randomized to total endoscopic ablation or rate control. Loop recorders were implanted in all patients. In the control group, all patients were in permanent AF for 12 months. In the ablation group, 12/15 patients (80%) were in SR without antiarrhythmic drugs at 12 months. Median freedom of AF at 3–12 months was 95%, and 8/15 (53%) had an AF burden of < 5%. Myocardial function, physical working capacity (PWC) and subjective physical and mental health improved.

**Conclusions:** Postoperative AF patients have an eightfold increased risk of future AF and a doubled long-term cardiovascular mortality. Both pre- or postoperative AF in CABG patients is a major risk factor for late cardiovascular morbidity and mortality. Total endoscopic ablation of AF is feasible and safe. In patients with LSPAF, it significantly reduced AF burden at 12 months compared with controls. Myocardial function, PWC and subjective physical and mental health improved.

**Keywords:** Atrial fibrillation; Bypass surgery; Cerebral ischemia, Follow-up studies; Survival, Anticoagulation, Ablation, Endoscopy, Randomized trial, Implantable loop recorder

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