

Meta analysis of transcatheter closure of atrial septal defect/patent foramen ovale guided by intracardiac echocardiography and transesophageal echocardiography

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Abstract

Background.Data on the effectiveness and safety of percutaneous transcatheter closure of atrial septal defect(ASD) and patent foramen ovale(PFO) guided by intracardiac ultrasound(ICE) are limited. We conducted a meta-analysis comparing intracardiac ultrasound with transesophageal ultrasound(TEE) guided surgery. **Method.**From 1996 to 2020, a systematic search was conducted using multiple databases, and the results were operation time, fluoroscopy time, success rate, complications, and occluder size. **Results.**7 studies were included, with a total sample size of 971 patients, of which 448 patients were treated with atrial defect occlusion guided by ICE, and the other 523 patients were treated with atrial septal occlusion guided by TEE. There was a statistical difference in the fluoroscopy time and procedure time between the ICE group and the TEE group, ($P<0.01$), There was no significant difference in success rate, complication between ICE and TEE groups (successrate, $P=0.71$; complications, $P=0.51$). **Conclusion.** success rate, complications and occluder size were similar between ICE group and the TEE group. Fluoroscopy time, procedure time were significantly reduced for transcatheter closure of atrial septal defect guided by intracardiac ultrasound.

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