**Background.**— Intracardiac echocardiography probe can be used trough esophageal route (ICE-TEE) to monitor transeptal puncture and evaluate left atrial appendage (LAA) without requiring general sedation. The purpose of the study is to evaluate the accuracy and the safety of ICE-TEE during Amplatz Cardiac Plug (ACP) implantation.

**Methods.**— The study included 16 consecutive patients (75 ± 7 years) in atrial fibrillation with high-risk of embolism (CHA2DS2-VASc = 5 ± 1.4) that required LAA closure by ACP because of severe bleeding complications occurring under vitamin K antagonist (HAS-BLED = 4 ± 0.9). Standard TEE was performed the day before the device implantation for LAA sizing and excluding thrombosis. During the procedure, ICE-TEE was used under local anesthesia to determine ACP diameter (ACP diameter = 1.2*LAA diameter by ICE-TEE) and monitor ACP positioning. LAA size by ICE-TEE was compared to the size obtained by fluoroscopy and standard TEE and ACP lobe size after device implantation by ICE-TEE to cardiac computed tomography (CT).

**Results.**— LAA maximal diameter by ICE-TEE did not differ from TEE (21 ± 3 mm vs. 20 ± 3 mm, r = 0.9, P < 0.001), while fluoroscopy measurement was lower (19 ± 3 mm, P < 0.05 vs. ICE-TEE and P = 0.08 vs. TEE). ACP was successfully implanted in 13 patients after one device, two patients after two devices and one failed because of a complex LAA anatomy. As expected ACP diameter implanted was 1.2 ± 0.04 (mean = 25 ± 3 mm; 26 mm in 10/16 patients) greater than LAA size measured by ICE-TEE. ACP size by ICE-TEE at the end of the procedure was similar to cardiac CT measurement (23 ± 7 mm vs. 23 ± 4 mm, R = 0.98, P < 0.001). Finally, the procedure (mean duration = 62 ± 27 minutes, X-ray exposure = 78 ± 51 Gray/m²) was safely conducted in all without pericardial effusion and prosthesis migration.

**Conclusions.**— ICE-TEE probe through esophageal route may be used for the sizing and the monitoring of ACP device implantation. Compared to standard TEE, ICE-TEE does not require general sedation.

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