

## Ultrasound-guided axillary vein puncture feasibility for complex cardiac devices implantation

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**Background:** The axillary route use for cardiac devices implantation has recently expanded either with fluoroscopy or ultrasounds guidance. Few studies included defibrillators (ICD), cardiac resynchronization therapy (CRT) and upgrade procedures for ultrasound-guided axillary vein puncture (UGVP).

**Puropose:** To assess the feasibility/safety of UGVP for complex cardiac devices implantation including CRT/ICD.

**Methods:** Consecutive patients eligible for a pacemaker or ICD implantation were included.

All procedures were performed by three operators (one experienced and two fellows). Guidewires insertion time (from lidocaine administration), and complications were systematically studied. A group of patients implanted with alternative techniques was used for comparison (cephalic, subclavian).

**Results:** In 176 consecutive patients in whom UGVP was used, a total of 68 complex procedures were analyzed ( $74 \pm 8$  y, male 61 %) with 138 leads implanted including 42 ICD, 48 CRT and 16 upgrade procedures. A majority (83 %) was under anti-thrombotic therapy. UGVP was successful in 96.8 %. Mean insertion time for 1.78 guidewires per patient was  $4.4 \pm 4.4$  min. Guidewires insertion time reached its plateau after 10 patients. One pocket hematoma (1.4 %) was drained during a mean follow-up of  $12 \pm 5$  months. The control group included 28 patients (12 subclavian, 16 cephalic; 15 ICD, 18 CRT, 4 upgrade procedures), with a mean insertion time of  $10 \pm 8$  min, for 1.95 guidewires per patient ( $p < 0.0005$ ).

**Conclusion:** UGVP is feasible and safe even for complex device implantations including CRT/ICD and upgrade procedures.