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Serratus anterior plane block in subcutaneous implantable cardioverter defibrillator implantation: a case-control analysis

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Background: A two-incision technique, in association with inter-muscular positioning of the subcutaneous defibrillator (S-ICD), is now the most frequently adopted implantation approach in Europe. Ultrasound-guided serratus anterior plane block (SAPB) has been proposed in order to provide anesthesia/analgesia during S-ICD implantation.

Objective: We performed a case-control analysis in which a standardized SAPB approach was compared with the typical local anesthesia and sedation approach.

Methods: 91 consecutive patients underwent implantation of an S-ICD with the SAPB approach for anesthesia/analgesia at 10 centers. The control group consisted of 55 consecutive patients who underwent S-ICD implantation with standard local approach.

Results: The mean procedure duration was 59 ± 15 min in the SAPB group and 76 ± 23 min in the control group ($p < 0.001$). No operative complications were reported in either group. During the procedure, 79 (87%) patients in the SAPB group and 25 (46%) patients in the control group ($p < 0.001$) remained awake. Lower values of pain intensity at the device pocket ($p = 0.005$) and the lateral tunneling site ($p = 0.046$) were reported in the SAPB group. The difference in static ($p = 0.002$) and dynamic ($p = 0.007$) pain intensity between the groups persisted at 1 hour, while no differences were observed 6 hours after the end of the procedure.

Conclusions: SAPB is feasible and effective in providing anesthesia/analgesia during S-ICD implantation. The procedures were successfully accomplished and no complications occurred in either group. However, SAPB was associated with lower pain levels, enabling the need for sedation to be reduced and more patients to remain awake. Moreover, it resulted in shorter procedure durations.