To the editor:

Fluoroscopy Guided Axillary Vein Access versus Cephalic Vein Access in Pacemaker and Defibrillator Implantation: Randomized Clinical Trial of Efficacy and Safety

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To the Editor

We read with interest the article by Dr Jiménez-Díaz and colleagues. This prospective trial randomised 240 patients undergoing permanent pacemaker or implantable-cardioverter defibrillator implant (ICD) to either cephalic or fluoroscopy-guided axillary access. The axillary approach, compared with the cephalic, provided a higher success rate, shorter time to access and implantation duration. There were no significant differences in terms of complications.

We want to address some points that we feel negatively impact the validity and clinical implications of this interesting study. We believe that no conclusions at all could be drawn on this topic by a single-centre trial, including two operators only. Operator experience, personal confidence and skills have a huge impact on the rate and time to successfully use the cephalic access. For example, the success rate on the cephalic group in this study was numerically higher for operator 2 vs. operator 1 (71.2% vs. 82%, p=0.18); although this was not statistically significant, the small sample size might account for that. The same principles apply to axillary vein access. Both operators routinely used an 18-G cannula, with either a standard 0.035 inch J-shaped or hydrophilic guidewire. We reserve the use of cannula only for very small cephalic veins, and we feel that inserting either the guidewire or the lead directly after the venotomy represents an easier and quicker approach. Of note, 49.2% of the cases in the cephalic group were single-chamber devices; in our experience, these are the cases where advancing the lead in the cephalic vein with no use of guidewire represents the fastest technique.

Finally, we should not forget the small but definite risk of pneumothorax associated with both the subclavian and axillary approach. Rate of pneumothorax requiring drainage was 0.9% in the Danish Pacemaker and ICD Registry [1]; the present study was clearly underpowered to detect differences between the cephalic and axillary access on this relevant complication, as a sample size of more than 1700 patients would be required with alfa 0.05 and power 80%.

In conclusion, we believe that cephalic access should represent the first choice for pacemaker and ICD implants. Routine use of this approach allows operators to increase their confidence and skills, with subsequent reduction of the rate of failure and procedural time. The location of the incision (which should be medial enough) represents a crucial step for optimising the chance and the quickness to identify the cephalic vein.

[1] Kirkfeldt RE, Johansen JB, Nohr EA, Jørgensen OD, Nielsen JC. Complications after cardiac implantable electronic device implantations: an analysis of a complete, nationwide cohort in Denmark. *Eur Heart J*. 2014;35(18):1186-1194. doi:10.1093/eurheartj/eht511.

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