# Comparison of CT and angiography-derived common femoral artery dimensions in patients with vascular injury following transcatheter aortic valve implantation

**Sara Dolički[1]*, Zvonimir Ostojić[2], Anamaria Ostović[2], Luka Perčin[2], Hrvoje Jurin[2], Tomislav Krčmar[2], Joško Bulum[1,2]**

[1]University of Zagreb, School of Medicine, Zagreb, Croatia
[2]University Hospital Center Zagreb, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Sara Dolički, Medicinski fakultet, Šalata 3, HR-10000 Zagreb, Croatia. / Phone: +385911312878 / E-mail: sara.dolicki2@gmail.com

**ORCID:** Sara Dolički, https://orcid.org/0009-0002-7543-8157 • Zvonimir Ostojić, https://orcid.org/0000-0003-1762-9270
Luka Perčin, https://orcid.org/0000-0003-0497-6871 • Hrvoje Jurin, https://orcid.org/0000-0002-2599-553X
Tomislav Krčmar, https://orcid.org/0000-0003-4689-1673 • Joško Bulum, https://orcid.org/0000-0002-1482-6503

**Introduction**: Access site-related vascular injury (ASRVI) following percutaneous transfemoral transcatheter aortic valve implantation (TAVI) remains a notable complication. Most ASRVI cases can be effectively treated percutaneously using balloon dilatation or stent graft (SG) implantation[1]. Device sizing is typically based on angiographic imaging of the common femoral artery (CFA) at the procedure's start. This study aimed to compare angiographic CFA dimeter with those derived from computed tomography (CT) to evaluate whether CT-based measurements could guide device sizing for ASRVI treatment.

**Patients and Methods**: This single-center analysis included all TAVI patients who developed ASRVI and were treated with balloon dilatation or SG implantation. CFA dimensions from pre-TAVI CT scans were compared to angiography performed at the beginning of the procedure. Diameter differences were calculated to assess percentage of the correspondence.

**Results:** Among 54 patients with ASRVI post-TAVI, all underwent balloon or SG treatment. Device diameter was determined using angiography. Mean CFA diameter via angiography was 8.01 ± 1.24 mm, significantly larger than CT-based mean diameter (7.16 ± 1.60 mm, p=0.003), but not different from CT-based maximal diameter (7.93 ± 1.42 mm, p=0.75). Case-by-case comparison between maximal CT and angiography derived CFA diameter showed: good accordance (< 0.3 mm) in 16 cases (29.63 %), moderate (0.3 – 0.8 mm) in 18 cases (33.33 %), and discordance (> 0.9 mm) in 20 cases (37.4 %). In the moderate group, CT overestimated CFA in 10 cases by mean of 0.57 mm, and underestimated in 8 by mean of 0.47 mm. In the discordant group, CT overestimated CFA in 7 cases (mean 1.5 mm) and underestimated in 13 (mean 1.23 mm).

**Conclusion**: CT-based CFA measurements show poor agreement with angiography and should not be used for device sizing in ASRVI treatment post-TAVI.

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**LITERATURE**

1. Ostojic Z, Percin L, Hanzek A, Jurin H, Krcmar T, Bulum J. Clinical outcomes and patency of stent-graft implanted in common femoral artery due to TAVR accesses site complication. J Am Coll Cardiol. 2025; 85 (12_Suppl):903-903. https://doi.org/10.1016/S0735-1097(25)01387-7