

Comparison Between Target And Achieved Proximal Sealing Zone Following EVAR: Does It Matter

Giulio Accarino, MD, University of Salerno, Salerno, Italy **Objective:**

Endovascular aneurysm repair (EVAR) has become the treatment of choice for most abdominal aortic aneurysms (AAA). In this study, we aimed at measuring with a reproducible and easy-to-perform technique the components of the sealing zone of our patients, before and after surgery and to assess the clinical significance of each element.

Methods:

We retrospectively reviewed and maintained a registry of all consecutive patients subjected to EVAR with the Endurant endograft (Medtronic Vascular, Santa Rosa, CA, USA) between 2009 and 2022. After the procedure, subjects were followed up and underwent a computed tomography angiography (CTA) evaluation according to follow-up protocol. Each Target sealing zone and each Real Achieved sealing zone were measured in all their components using a new, reproducible technique and open-source software (Fig.1). Receiver operating characteristic (ROC) curve analysis and Cox regression were performed to identify the best cut-off value for the risk of type 1A endoleak and its HR.

Results:

275 patients (mean age 72.2 ± 8 years) were included in the study. The proximal sealing zone (PSZ) was significantly lower in the postoperative assessment compared to the target sealing zone measured at the pre-op CTA ($p=0.001$) with an average loss of 24.5mm^2 , corrected for graft misplacement, average cranial length loss included the loss not due to incorrect graft placement was 4mm, higher in patients that developed an endoleak later in the follow-up ($p<0.001$). TASZ and RASZ features in patients grouped for type 1A endoleak occurrence are reported in Figure 2.

Conclusion:

Real achieved sealing zone evaluation on the first CTA is relevant to follow-up and should be routinely performed. Its extension is lost during deployment even when the endograft is correctly placed and should be evaluated using a technique such as that proposed in this paper that may help detect patients with an increased risk of late events at the first CTA.

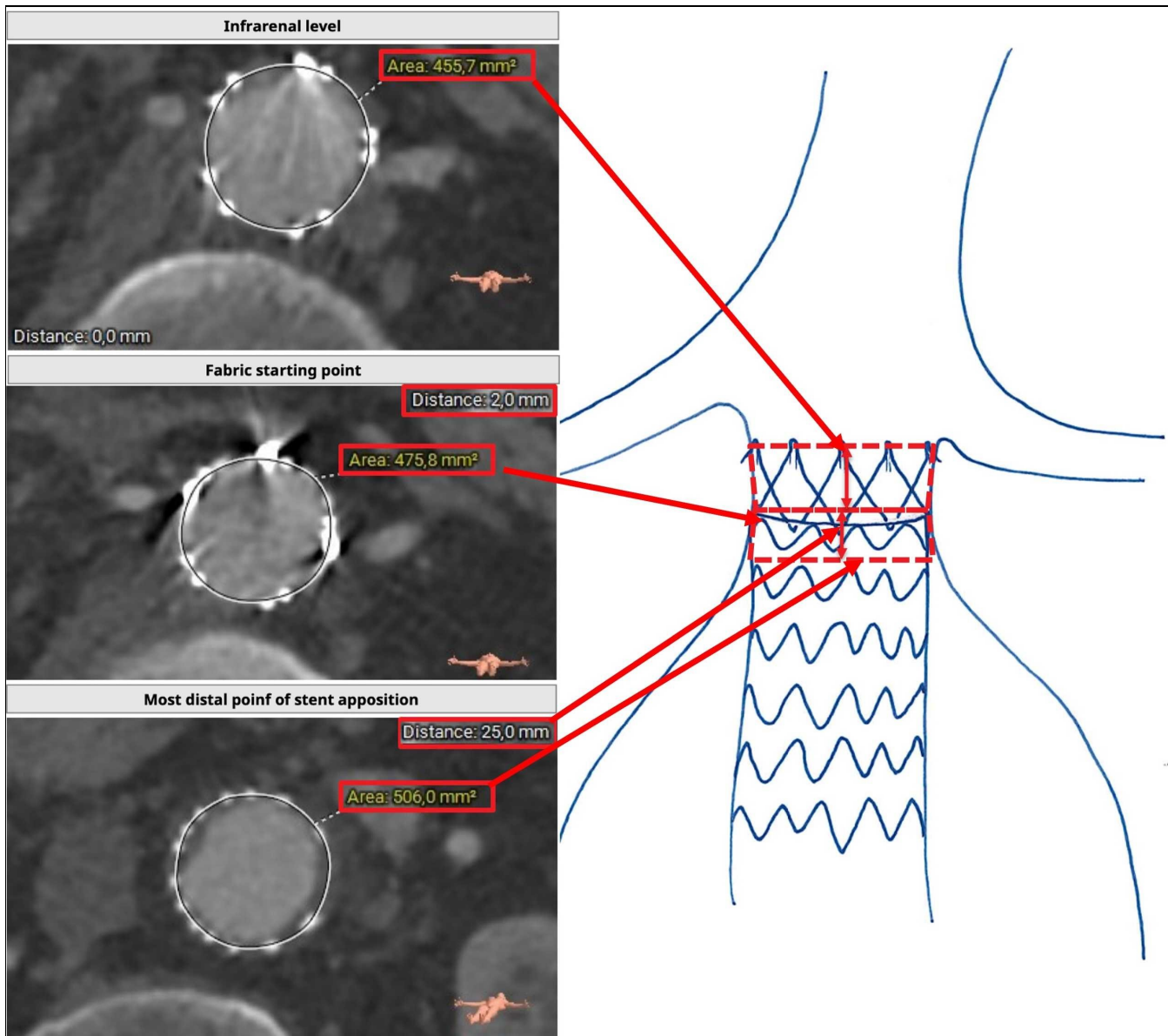


Fig 1 post-op measures

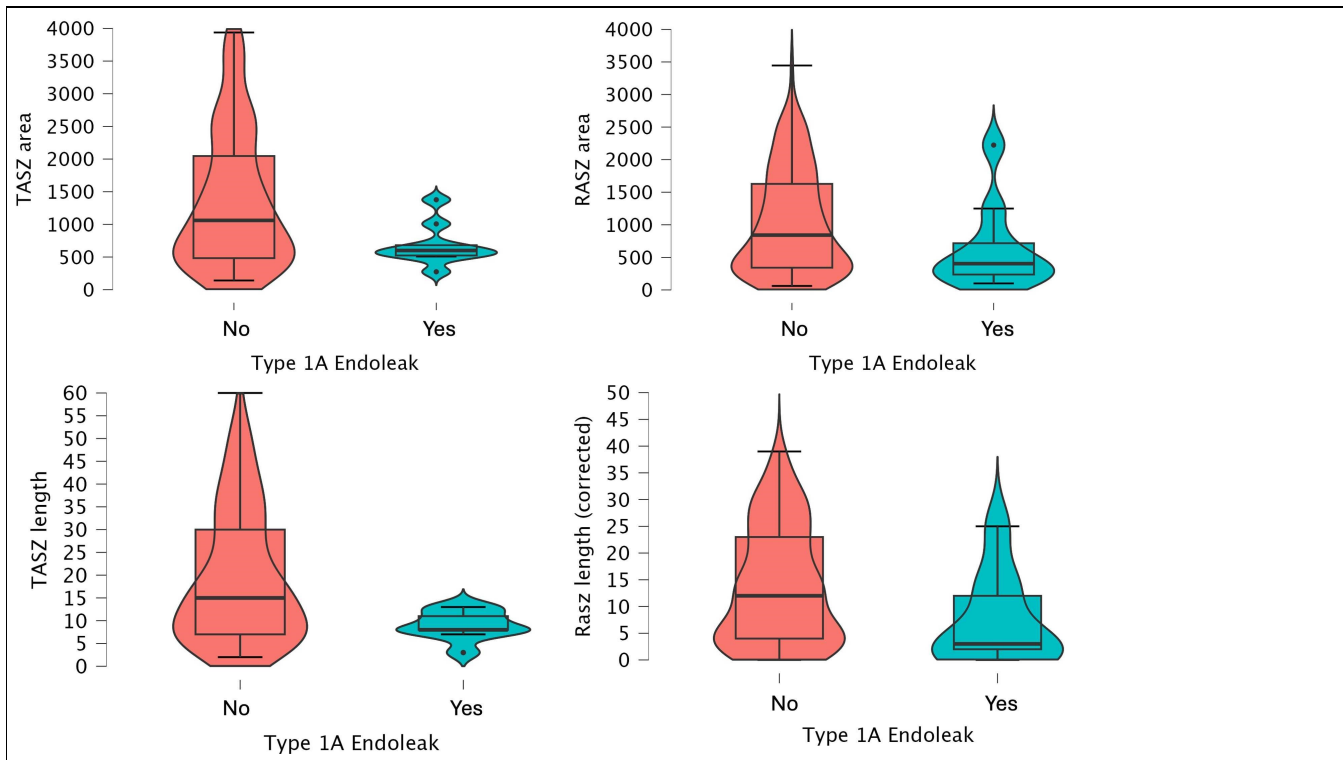


Fig 2 RASZ features and late type 1A endoleak