

## PVSS13 AneuRx Device Migration: Incidence, Risk Factors And Consequences

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**BACKGROUND:** Success after Endovascular Abdominal Aortic Aneurysm Repair (EVAR) depends on device stability, but device migration risk factors remain subject to debate. We studied the incidence, risk factors, and clinical implications of device migration after EVAR with the AneuRx endograft.

**METHODS:** We included 109 consecutive patients submitted to EVAR with AneuRx placement. Preoperative computed tomography (CT) scans were reviewed for: neck length, diameter, angulation, calcification, and thrombus load (thickness, perimeter coverage, thrombosed cross-sectional area), sac diameter and thrombus load. All postoperative CT scans were reviewed, and the distance between the lowest renal artery and the cranial end of the device measured, subtracting both CT scanner table positions. An increase  $\geq 5$ mm in such distance was considered device migration. Migration incidence was estimated by Kaplan-Meier method, and associations with preoperative characteristics tested using Cox models.

**RESULTS:** Device migration occurred in 9 patients at a median follow-up of 9 months (range: 1-31), corresponding to a 15.6% estimated probability of migration at 18 months. Migration was associated with type I proximal endoleak [odds ratio (OR) = 4.01,  $P=0.002$ ]. Type I endoleak occurred in three of the migrators (33.3%); all were resolved by placing an additional proximal cuff. The only significant associations between anatomic factors and migration probability, were the protective effects of longer necks [hazards ratio (HR) =0.71 for each additional 5mm,  $P=0.045$ ] and longer overlapped portions of neck and device (HR=0.56 for each additional 5mm,  $P=0.003$ ). There was a trend towards higher probability of migration among reverse tapered necks (HR=1.75,  $P=0.109$ ). There was a trend towards higher mean percentage of “late” dilatation (between first postoperative and 1.5-year scans diameters) among migrators (11.4 %, SEM=2.6) than non-migrators (5.7%, SEM=1),  $P=0.08$ , but both groups had similar mean percentages of “early” dilatation (between preoperative and first postoperative diameters), 15.7%, SEM=3.8 vs 12.2%, SEM=1,  $P=0.372$ .

**CONCLUSION:** Device migration is not rare after AneuRx implantation, and increases the risk of proximal type I endoleak. Short length of proximal fixation is the most significant predictive factor for migration. Migration might be more frequent in reverse-tapered necks, but is independent from device/neck over-sizing. Device position should be quantitatively monitored routinely after EVAR.