

Absence of Proximal Neck Dilatation and Graft Migration following Endovascular Aneurysm Repair with Balloon-Expandable Stent Based Endograft

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Objectives

Proximal neck dilatation (PND) and/or endograft migration with the subsequent development of type I endoleak is a significant cause of late endograft failure following endovascular aneurysm repair (EVAR). Although there are numerous reports examining PND in patients receiving endograft that utilize self-expanding stent (SES) for proximal fixation, there are no such reports for patients treated with endografts that use balloon-expanding stent (BES). The purpose of this study is to investigate PND and endograft migration following EVAR with BES endografts.

Methods

We retrospectively reviewed all charts as well as all serial computed tomography (CT) scans available for patients who underwent endovascular aneurysm repair (EVAR) with a BES endograft (surgeon-made, aorto-uni-femoral PTFE graft with proximal Palmaz stent) between August 1997 and October 2002. Only patients with longer than 12-month follow-up were analyzed. Neck diameter was measured at the level of the lowest renal artery and at 5 mm below it. PND was defined as neck enlargement of ≥ 2.5 mm. To assess endograft migration, the distance between the SMA and the cranial end of the BES was measured. Stent migration was defined as a change of ≥ 5 mm.

Results

A total of 77 patients received this device during the study period. The technical success rate was 99%. One-, 3-, and 5-year survival were 66, 48, and 29.5%, respectively. Complete serial CT scans were available in 41 of the 48 patients who survived 12 months or longer following the operation. The mean follow-up period for these patients was 31 months (range 12-66 months). The maximum aneurysm diameter was either unchanged or decreased in 35 patients (85%). The immediate postoperative proximal neck diameter was 19 to 29 mm (median 24 mm). This was unchanged at the latest follow-up. None of the patients had significant PND. The cranial end of the BES was located in the area between 14 mm proximal and 36 mm distal to the SMA (median 6 mm). None of the patients developed significant endograft migration.

Conclusions

Neither PND nor endograft migration were observed with the BES endograft. The nature of the SESs may be responsible for the observed neck dilatation and device migration following EVAR with SES endografts. This study suggests that BES may be a better fixation method for EVAR.