EVAR treatment in challenging cases

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Introduction:
The newer stent graft such as Aorfix and Ovation provide an option for EVAR treatment in challenging cases.

Material and Methods:
Personal experience with two newer stent graft Aorfix and Ovation used in a case where standard EVAR stent graft was not possible primarily because of "hostile aortic neck, due to either the short parallel good quality of neck < 10 mm or highly angulated neck > 75 degree or both and/or highly angulated iliac arteries which can compromise distal landing zone. In all, 17 patients were treated between July 2015 and August 2016. All patient had "hostile aneurysm neck" defined as a short neck, less than 10 mm from the lowest renal artery, tapered conical or reverse, a significant amount of the thrombus and calcification and highly angulated aneurysm neck or highly angulated iliac artery.

Results:
There were 14 male and three female patients. Mean age was 70.7 year (range: 60-85 y). There were 10 patients with highly angulated > 75-degree aneurysm neck including one patient with severely angulated iliac artery and all those patients were treated with Aorfix stent graft. Seven patients had either a significant amount of the thrombus or tapered or reversed tapered aortic neck, or problem with access and were treated with Ovation stent graft; two patients were treated with Chimney stent graft from this group. Technical success was 100% without mortality and/or significant comorbidity. There were three cases with endoleak type 1A peri-operatively, very challenging case treated with Ovation stent graft. Two of these patients underwent additional coil embolization the same day and one patient underwent next day trans-brachial embolization of the endoleak with coils. In one case treated with Aorfix stent graft additionally, Aorfix cuff was deployed due to endoleak type 1A with good result afterward. The follow-up period was from 1-13 months (mean 3,4 months ). All patients had at least one control either after one or three months. In one case treated with Ovation stent graft, endoleak type 1A is still presented at one-month follow-up despite additional coil embolization. In all other cases, there was no type 1 or type 3 endoleak registered at the follow-up scanning. There was no case with limb occlusion or growth of an aneurysm in the short follow-up period. Thirty days period was without any other complications in any case.

Conclusion:
Highly technical success was obtained in all challenging case and both stent grafts were deployed as intended in every case. The short term follow-up confirm very good results using the newer stent graft in the aneurysm treatment, however, the main concern is the behavior of the aneurysm neck which is with degenerative changes and the stent graft is placed in the not healthy aorta. The possible treatment group for especially Ovation stent graft combined with Chimney stent graft could include the patient’s with significant morbidity and shorter life expectancy in this early stadium before the accumulation of the more results as well as some acute cases.