



IMPACT OF CONICAL ANATOMY ON PROXIMAL NECK ADVERSE EVENTS AFTER EVAR

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Conflict of interest: none



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Introduction

Conical neck is considered as one of the hostile characteristics that may affect endovascular aneurysm repair (EVAR) outcomes



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Aim

To present proximal neck adverse events (ET Ia and graft migration), in patients with conical morphology compared to patients with non-conical neck

To analyze the factors that may affect adverse events in patients with conical neck during the 12-month follow-up



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Methods

- ✓ Retrospective analysis of prospective data
- ✓ Consecutive patients managed with standard EVAR
- ✓ Between 2017 and 2019
- ✓ Single tertiary center

Adequate CTA preoperatively, at the 1st and 12th month

Database: Pre- and post-operative infra- and supra-renal aortic diameters, aneurysm diameter, angle, thrombus and calcification



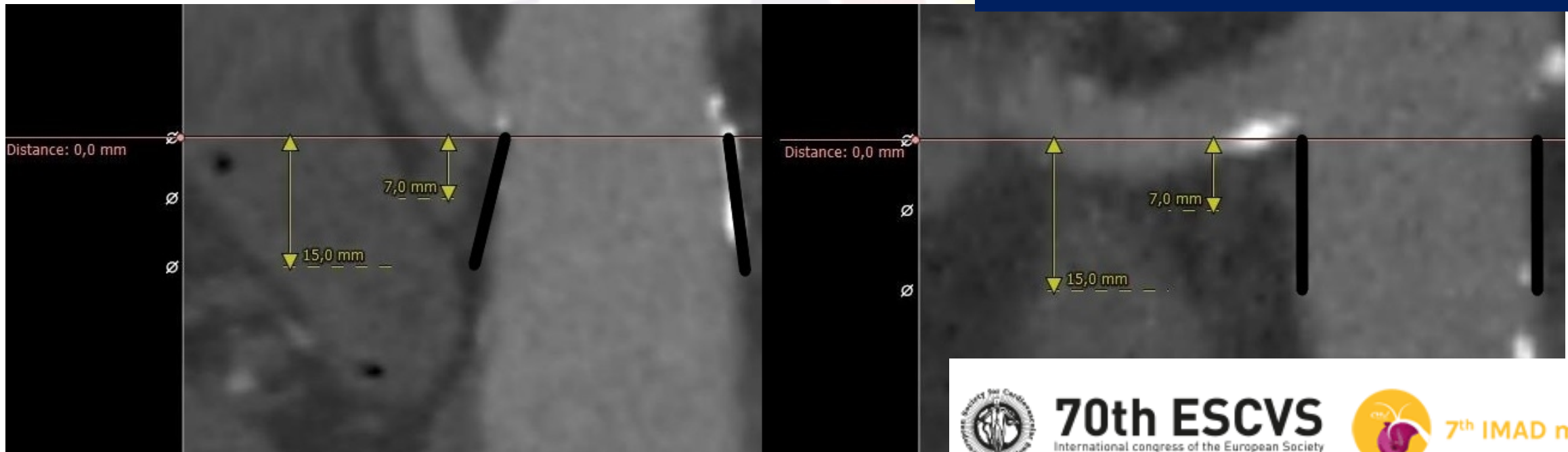


Methods

Conical neck: any neck (up to 30mm).
with diameter increase of 2-3mm/cm
of length

Neck adverse events

- ✓ Migration
- ✓ ET Ia



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Results

150 patients

Baseline characteristics	Value
Age	72±7.2
Male	150 (100%)
HTN	123 (82%)
DM	19 (12.6%)
DLP	123 (82%)
CAD	51 (34%)
COPD	54 (36%)
Non smoker	41 (27.3%)
Current smoker	48 (32%)
Previous CVE	7 (4.7%)
PAD	14 (9.3%)
CRD (GFR<30ml/min)	4 (2.6%)





Results

66 (44%) of the patients presented conical neck morphology

- ✓ Only difference: distal neck diameter at 15mm
 - ✓ Larger in patients with conical neck ($p < .001$)



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Results

Patients' characteristics	CG (66 patients)	NCG (84 patients)	P
Supra-renal fixation	45 (68.2%)	50 (59.5%)	.27
Polyester material	52 (61.9%)	49 (74.2%)	.11
Oversizing (%)	26.5±11.4	19.1±8.2	<.001
Oversizing>20%	42 (63.6%)	31 (36.9%)	.001
Oversizing>30%	29 (43.9%)	10 (11.9%)	<.001
Aortic cuff	3 (3.7%)	3 (4.6%)	.08
Use of endoanchors	2 (2.4%)	0 (0%)	.21





Results

Regarding proximal neck adverse events, no difference between groups

Neck related adverse events at 12 months	CG (66 patients)	NCG (84 patients)	P
ET Ia	2 (3.0%)	5 (6.0%)	.40
Migration	11 (16.7%)	12 (14.3%)	.69
Composite of ET Ia & migration	13 (19.7%)	16 (19.0%)	.92





Results

Subgroup analysis in patients with conical neck, oversizing >30% related to less graft migration events at 12 months (p=.011)

Factors related with migration	Migration (11)	Non migration (55)	P
Thrombus	4 (36.4%)	28 (50.9%)	.39
Calcification	3 (27.3%)	20 (36.4%)	.56
Angle >60°	0 (0%)	1 (1.8%)	.65
Diameter ≥29mm	1 (9.1%)	3 (5.5%)	.64
Supra-renal fixation	6 (54.5%)	39 (70.9%)	.29
Oversizing (%)	21.27±8.5%	27.5±11.7%	.10
Oversizing >20%	5 (45.5%)	37 (67.3%)	.17
Oversizing >30%	1 (9.1%)	28 (50.9%)	.011



Discussion

- ✓ Conical neck may be common among patients undergoing EVAR (>35%)
- ✓ Conical morphology is relative contra-indication to EVAR
- ✓ In daily clinical practice, patients with conical neck are managed with endovascular means
- ✓ Limited literature

Lee, et al. Vasc Specialist Int. 2017
Pitoulias, et al. JVS. 2017



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Discussion

- ✓ Conical neck has been characterized as a factor related to neck adverse events after EVAR
- ✓ The role of aggressive oversizing has not been studied in this group of patients

Herman, et al. JVS. 2018
Pitoulas, et al. JVS. 2017
Van Prehn, et al. EJVES.2009



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Limitations

- ✓ Retrospective nature
- ✓ Only men
- ✓ Patient selection bias
- ✓ Variety of endografts
- ✓ Limited follow-up



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Conclusions

- EVAR may offer similarly good outcomes in patients with conical and non-conical neck anatomy during the early follow-up
- Aggressive oversizing (>30%) may have decrease graft migration rate in patients with conical neck during the first post-operative year





Thank you
for
your attention

