VEITH SYMPOSIUM

Major Systemic Trauma Can Lead To High Flow (Type I) Endoleaks In EVAR Patients: Can They Occur With Endograft Fixed By Hooks Or Barbs And What Is The Best Treatment

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Faculty Disclosure

Disclosure

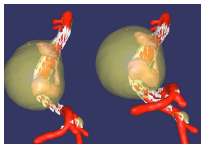
Speaker name: Francesco Setacci, MD

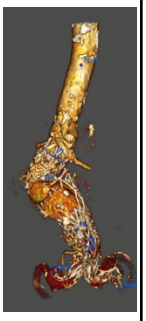
I have the following potential conflicts of interest to report:

- ❑ **Consulting**
- ❑ **Employment in industry**
- ❑ **Shareholder in a healthcare company**
- ❑ **Owner of a healthcare company**
- ❑ **Other(s)**
- ✓ **I do not have any potential conflict of interest**

Background

EVAR
Early success does not mean *late* success



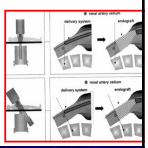


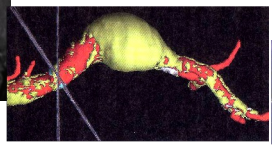
Late Failure

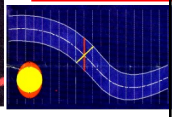
- Type 1 endoleaks
- Type 2 endoleaks
- Type 3 endoleaks
- Stent graft migration
- Iliac stent graft thrombosis or stenosis
- Iliac aneurysm
- Graft infections
- Delayed AAA rupture after EVAR
- Renal compromise

Late Failure (Type I EL)

- Poor imaging/planning
- Poor px selection
- Poor device selection
- Technical error
- Migration

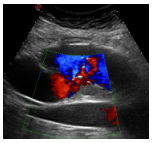


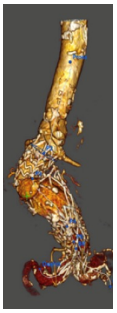




Limb Disconnection (Type III EL)

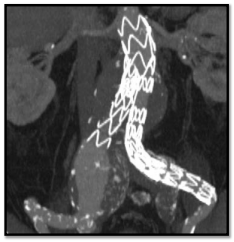
- Only with modular grafts
- Usually Related to aneurysm remodeling
- Related to stability of Junction and overlap
- Results in dangerous Type III endoleak
- Can be repaired by endovascular means





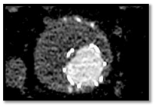
Clinical Case #1

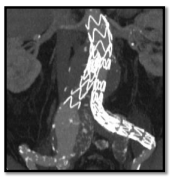
- G.S. 75 yrs male
- Hypertention
- hyperlipidemia
- Smoker
- Obesity
- CAD
- COPD
- 2005 EVAR
- 2009 sandwich technique due to iliac aneurismatical progression(2 Gore Excluder + 2 Gore Viabahn)

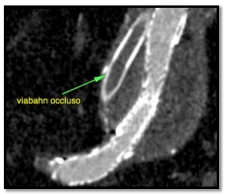


Clinical Case #1

June 2013: good aneurismal exclusion internal iliac branch occlusion.



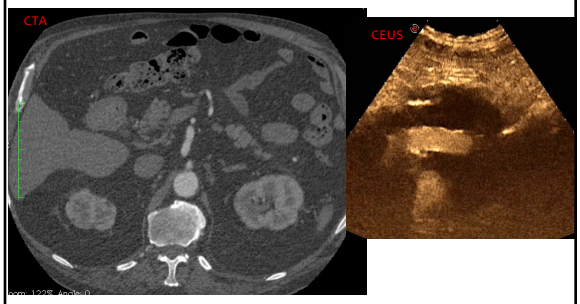




Clinical Case #1

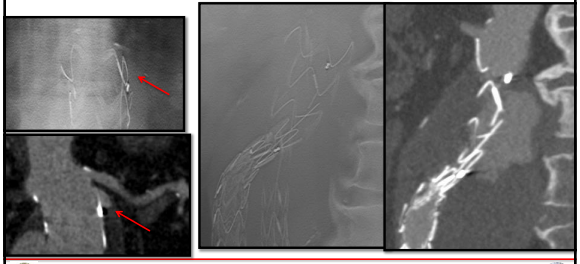
July 2020: High speed crash injury:
- Multiple bones fractures

Clinical Case #1



Clinical Case #1

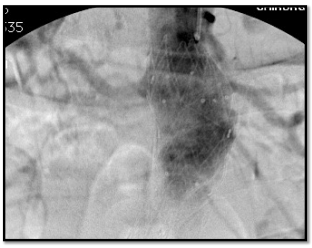
- Type I EL due to body dislocation
- Type III EL due to material fatigue



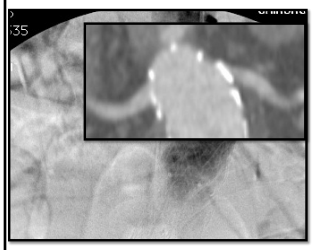
Clinical Case #1

- Aortic cuff
- Endurant 2 (36mm x 49)
- Endurant 2 aorto-uniliac (36-14 x117)
- Occluder 20 mm CIA
- Cross over Bypass

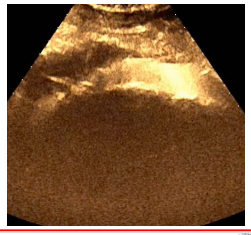
Clinical Case #1



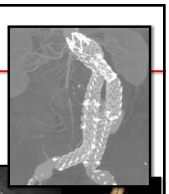
Clinical Case #1



3-months tomosintesis, CEUS and CTA



Clinical Case #2



Px 85, car crash injury after 3 yrs FU
Previous CTA control ok

Traumas Could Facilitate Late High Flow Endoleaks

J Cardiovasc Surg (Torino). 2018 Jun;59(3):486-488. doi: 10.23736/S0021-9509.18.10133-9. Epub 2018 Jan 2.

EVAR follow-up: traumas could facilitate late high flow endoleaks.

Setacci C[1], Mele M[2], Benevento D[2], Ruzzi U[2], Giannace G[2], De Donato G[2], Palasciano G[2], Setacci F[2].

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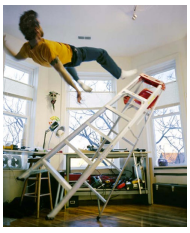
Traumas Could Facilitate Late High Flow Endoleaks

to investigate if high-energy traumas could play a role in complications after EVAR.

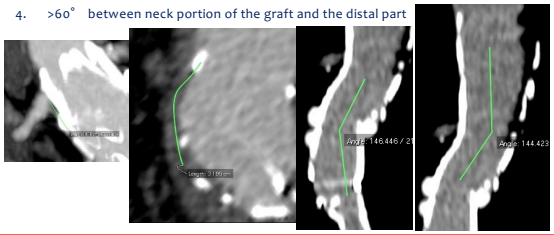


Traumas Could Facilitate Late High Flow Endoleaks

- Standard EVAR from 2011 to 2018 (control group) and reinterventions from 2014 to 2018
- Telephonic interview to identify patient with traumas
- CT review pre traumas
- We identified 8 Predisposing factors for endoleak

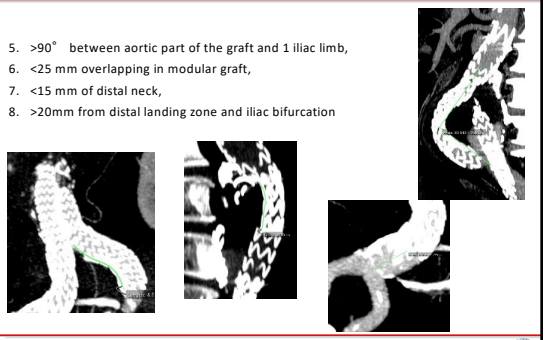
Predisponding factors for endoleak

1. distance between the lower renal artery and the covered graft more than 10 mm,
2. <10 mm of overlapping graft-Aorta in the proximal neck,
3. >60° of angulation between sovrarenal fixation stent and infrarenal graft,
4. >60° between neck portion of the graft and the distal part



Predisponding factors for endoleak

5. >90° between aortic part of the graft and 1 iliac limb,
6. <25 mm overlapping in modular graft,
7. <15 mm of distal neck,
8. >20mm from distal landing zone and iliac bifurcation



3 Groups

- ≤ 2 PF Low risk of endoleak "A"
- 3≤ 5 Intermediate risk of endoleak "B"
- > 5 high risk of endoleak "C"

2011-2014 Experience

2011-2012 94 EVAR*

37 redo procedures due to complications after EVAR (7 from the series)

- -21 Type I EL (3 RAA)
- -9 Type IIIEndoleaks
- -7 Limb occlusions
- -4 Multiple Endoleaks

2 patients received treatment less than 6 months after evar---excluded

* Inclusion criteria

Results

- 4 HIGH VELOCITY TRAUMAS
- 3 IN COMPLICATED GROUP
- ONLY 1 CASE EXPERIENCED TRAUMAS WITHOUT DEVELOPING ENDOLEAK

CTA Analysis

	PATIENTS WITH EL + TRAUMA	PATIENTS WITH EL - TRAUMA
GROUP A LOW RISK	1 PATIENT	0 PATIENT
GROUP B INT RISK	2 PATIENT	8 PATIENT
GROUP C HIGH RISK	0 PATIENT	26 PATIENT

Conclusion

Trauma could be a predictor factor for complications after EVAR. Patients with stentgraft who have had high speed injuries should be followed more carefully.

Endovascular treatment seems to be the best option in redo patients