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Les Comtes de Méan  
Liège, Belgium

# 6<sup>th</sup> International Meeting on Aortic Diseases

New insights into an old problem CHU Liège, APF

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## The place of allografts in the management of aortic graft infections

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# Disclosure of Interest

Speaker name:

Boesmans Evelyne

I do not have any potential conflict of interest



# The Liège experience

2000 – 2018

51 aortic graft infections

managed with cryopreserved arterial allografts

- 43 infected aortobifemoral grafts
- 8 aorto-enteric fistula

67% (n=34) outside referred patients



# The Liège experience

- Pre-operative diagnostic work-up
  - Angio-CT scan 100%
  - PET-CT 51%
  - Gastroduodenoscopy in case of aorto-enteric fistula (n=8)
- Microbiological culture of prosthesis
- Post-operative antibiotherapy during 6 weeks
- Mean follow-up of 49 months (range 15 – 133)



# 43 infected aortobifemoral grafts

- 28% (n=12) AAA
- Median interval of 23 months between implantation and clinical manifestation (range 1 – 168)
- 42% early (< 6months) infection (n=18)
  - 72% re-intervention (n=13/18)*
- 58% late (> 6months) infection (n=25)
  - 28% re-intervention (n=7/25)*
- Clinical manifestation
  - 86% inguinal abces (n=37)
  - 13% systemic sepsis (n=6)

# 43 infected aortobifemoral grafts

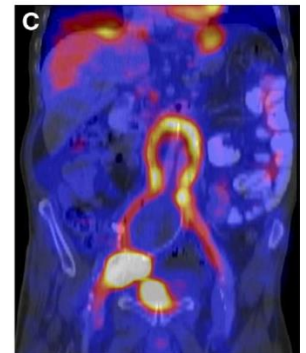
- 63% total prosthetic graft removal (n=27/43)

Allways 2 or more allografts

37% partial segmental graft excision (n=16/43)

Criteria: - PET-CT  
- Intra-operative findings

- 46% omental wrapping (n=20/43)
- 44% sartorius flap (n=19/44)
- Bacteriology on prosthetic material





# 43 infected aortobifemoral grafts

- 25% early allograft related complications (n=11)
  - 6 allograft disruptions (3 fatal)
    - 3 end-to-end suture lines (hemodynamic stress)*
    - 1 tissue necrosis in middle segment (autopsy)*
    - 2 slip offs of ligated collateral*
  - 4 false aneurysms at inguinal level
    - Size incongruence between allograft and native artery*
  - 1 thrombosis



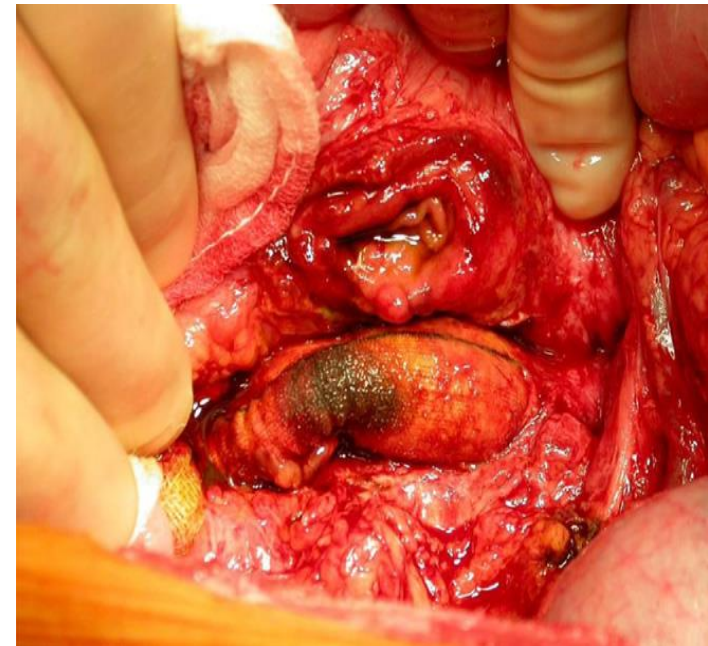
# 43 infected aortobifemoral grafts

- 18% in hospital mortality (n=8)
  - 3 fatal hemorrhagic shocks
  - 3 myocardial infarctions
  - 2 multi-organ failures
  
- 53% 5 year survival (n=23)



# 8 aorto-enteric fistulas

- 7 aorto-duodenal and 1 aorto-jejunal fistula
- Median interval of 64 months between implantation and erosion (range 11 – 120)
- Clinical presentation
  - 63% herald bleeding (n=5)
  - 25% inguinal absces (n=2)
  - 12% systemic sepsis (n=1)
- 100% polymicrobiological infection  
85% *Candida Albicans* (n=6/8)





# 8 aorto-enteric fistulas

- 50% total graft removal (n=4/8)  
50% partial (body) graft excision (n=4/8)
- 63% in situ allograft replacement (n=5/8)  
37% composite axillobifemoral bypass (n=3/8)  
and infrarenal aortic ligation
- 50% duodenal raphy  
50% segmental duodenal resection and re-anastomosis
- 88% omental wrapping



# 8 aorto-enteric fistulas

- 37% allograft related (n=3/8)
  - 1 fatal
  - 1 ... D3
  - 1 ... w-out
  - 1 ... anastomotic rupture
- 37% in ... (n= 3/8)
- 50% 5 year survival (n=4/8)

All 3 in contact with oversewn D3

No anastomotic rupture in 4 cases of duodenal resection



# The place of allografts in the management of aortic graft infections

## Our results

	Infected graft	Fistula	Overall
Complications	25%	37%	27%
Mortality	7%	37%	11%



# The place of allografts in the management of aortic graft infections

*Cryopreserved arterial allografts for in situ reconstruction of abdominal aortic native or secondary graft infection*

*Sabrina Ben Ahmed, MD, Adrien Louvancourt, MD, Guillaume Daniel, MD, Pierre Combe, MD, Ambroise Duprey, MD, PhD, Jean-Noël Albertini, MD, PhD, Jean-Pierre Favre, MD, PhD, Eugenio Rosset, MD, PhD*

*Journal of Vascular Surgery*

Volume 67, Issue 2, Pages 468-477 (February 2018)

	Complications	Mortality
Our serie (n=51) - 2016	27%	11%
Ben Ahmed et all (n=71) - 2018	18%	7%
Kieffer et al (n=179) - 2004	39%	43%
Verhelst et all (n=90) - 2000	21%	17%



# The place of allografts in the management of aortic graft infections:

## Tips and tricks

- Wide bowel resection (0% complications)
- Omental wrapping
- Suture ligation of side branches
- Avoid size mismatch in case of multisegment allograft
- Partial excision is feasible for low-grade infection