CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE

CONTROVERSIES & UPDATES IN VASCULAR SURGERY

JANUARY 25-27 2018

MARRIOTT RIVE GAUCHE & CONFERENCE CENTER, PARIS, FRANCE

Aortic infection: successes and limits of the endo approaches,

Colin Bicknell

Imperial College London

Disclosure

Speaker name: Colin Bicknell

I have the following potential conflicts of interest to report:

•Consulting – Medtronic, Bolton Medical, Orzone

•Other(s) – Speaker, travel and conference fees from Medtronic and Bolton and Gore;

•Institutional level funding from Orzone

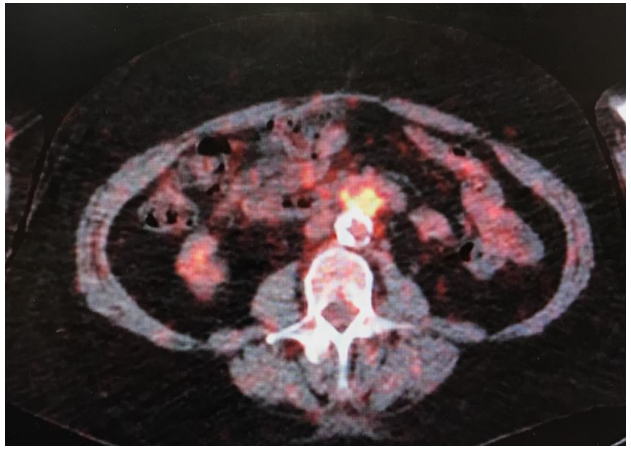
-PRIMARY AORTIC INFECTION

-PRIMARY AORTO-ENTERIC FISTULA

-INFECTED AORTIC STENT GRAFTS

-SECONDARY INFECTION AND AORTO-ENTERIC FISTULA

Present (or are diagnosed) late, often significant co-morbidity and malnourished



A significant clinical issue
Incidence increasing
Difficult management

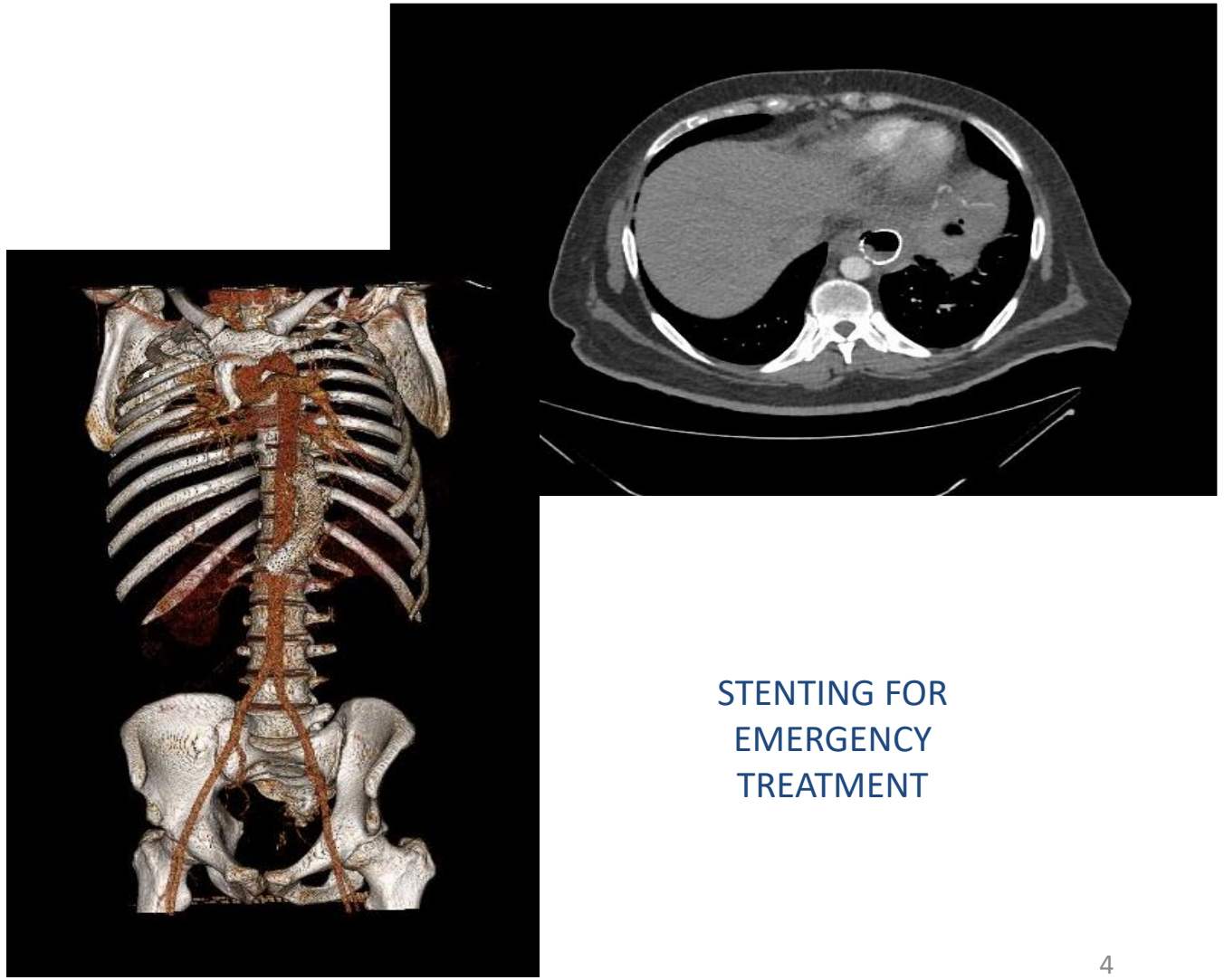
EMERGENCY

- **ENDOVASCULAR SALVAGE**

– Primary infection and symptomatic cases or rupture
– Primary Aorto-enteric fistula
– Secondary infection and bleeding or Aorto-enteric fistula

EXCLUSION OF MYCOTIC ANEURYSM

- **SYMPTOMATIC/RAPIDLY EXPANDING**



STENTING FOR EMERGENCY TREATMENT

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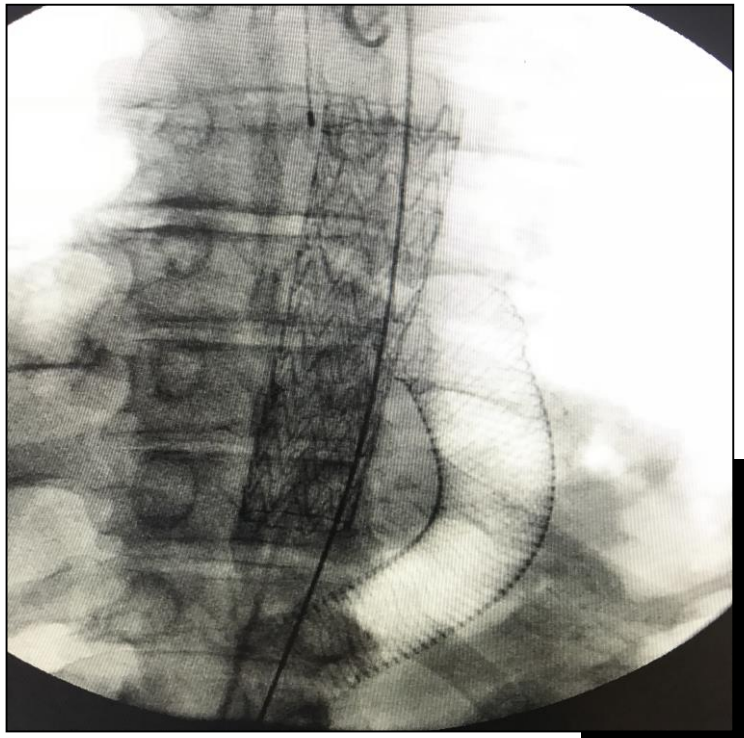

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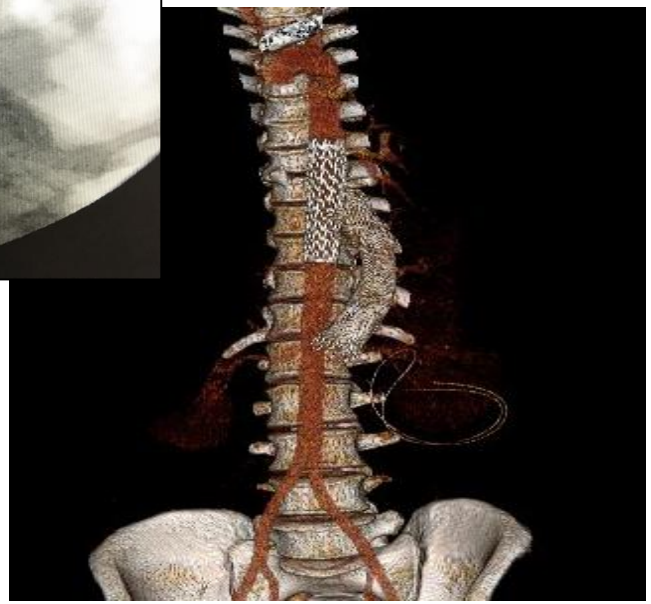

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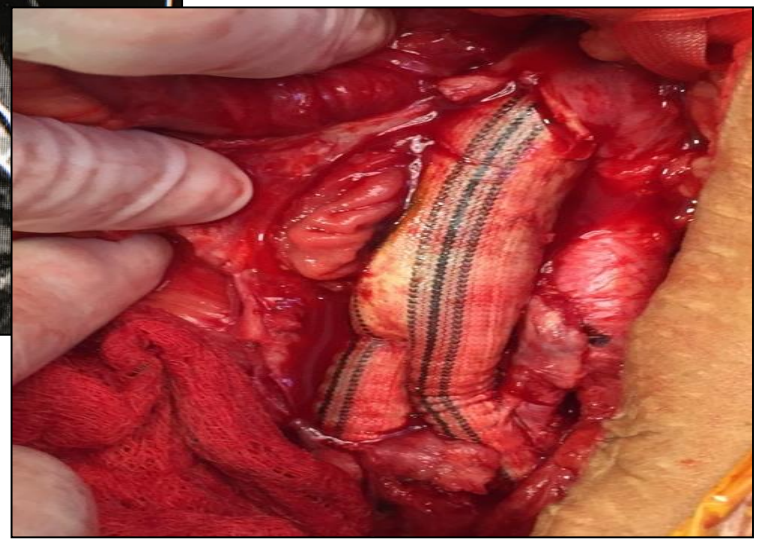


STENTING FOR EMERGENCY –RUPTURE OF AORTO-BIFEMORAL BYPASS AND AEF

SHORT TERM RESULTS – PRIMARY

The changing management of primary mycotic aortic aneurysms

Nadia Vallejo, MD, Natasha Emma Picardo, MRCS, Patricia Bourke, BSc, Colin Bicknell, MD, FRCS, Nicholas J.W. Cheshire, MD, FRCS, Michael P. Jenkins, MS, FRCS, John Wolfe, MS, FRCS, and Richard G.J. Gibbs, MD, FRCS, *London, United Kingdom*

In-hospital mortality for primary aortic infection

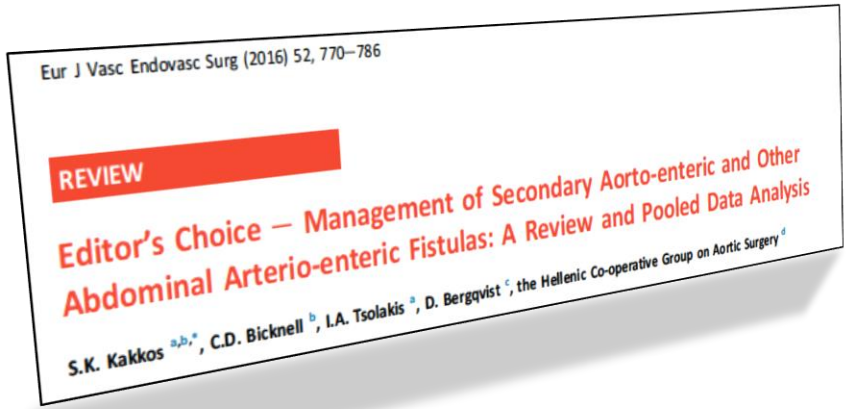
- Consistently <15%
- One death in our series in the endovascular group
- Multiple case series of successful treatment of stable cases

30 Day Mortality from systematic review

Systematic review
48 cases from 22 reports
Mortality 10.4%

Outcome after endovascular stent graft treatment for mycotic aortic aneurysm: A systematic review
Kan CD, Lee HL, Yang YJ
J Vasc Surg 2007 46(5):906-12

SHORT TERM RESULTS - SECONDARY


Eur J Vasc Endovasc Surg (2016) 52, 770–786

REVIEW

Editor's Choice — Management of Secondary Aorto-enteric and Other Abdominal Arterio-enteric Fistulas: A Review and Pooled Data Analysis

S.K. Kakkos [a,b,*], C.D. Bicknell [b], I.A. Tsolakis [a], D. Bergqvist [c], the Hellenic Co-operative Group on Aortic Surgery [d]

In-hospital mortality for secondary AEF:

Open graft excision surgery 33.9% vs Endo 7.1%
Persistent sepsis equal in both groups 8.3 vs 9.5%

Compared with patients undergoing open surgical procedures, those having endovascular procedures:

- More often case series
- More often male (75/80, 93.8% vs.219/258, 84.9)
- Were older (72 years vs. 69.5 years for open)
- Had a longer time interval since the original surgery (6 vs 3.9 years)
- Less often had pre-operative sepsis (16/72, 22.2% vs. 113/266, 42.5)
- Presented more often with bleeding (80/82, 97.6%, vs. 226/289, 78.2%)
- More often had haemorrhagic shock (28/71, 39.4% vs. 102/313,32.6%)

LONG TERM RESULTS

Recurrent sepsis

Death

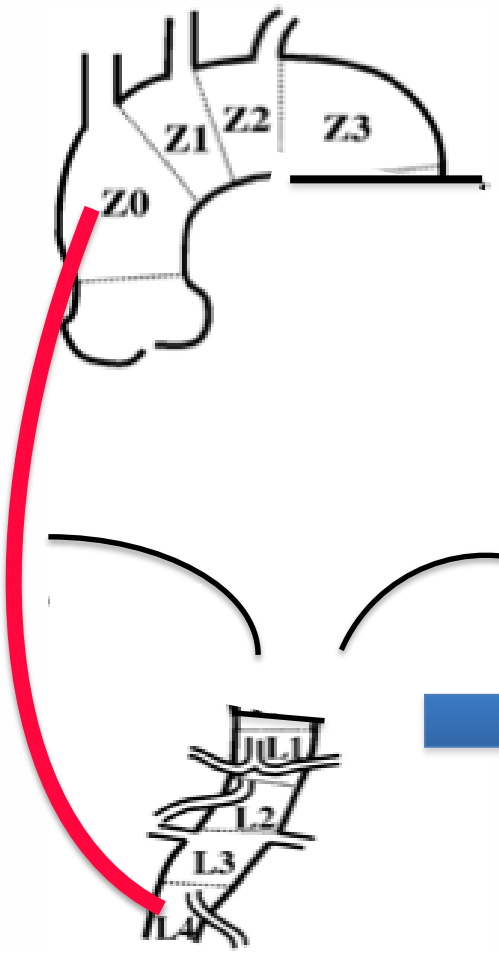
AORTO-OESOPHAGEAL FISTULA

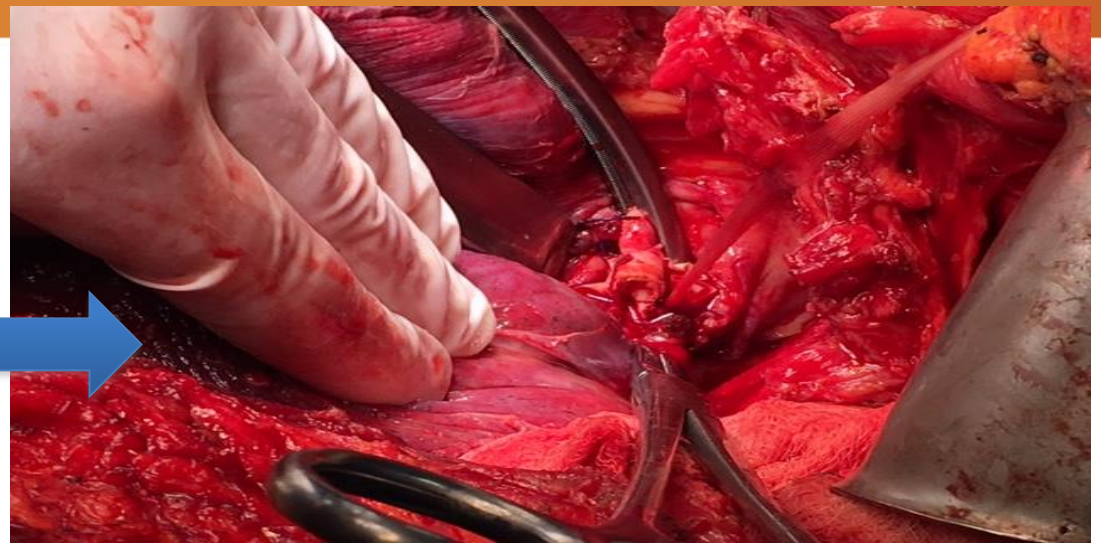
STENTING FOR EMERGENCY TREATMENT

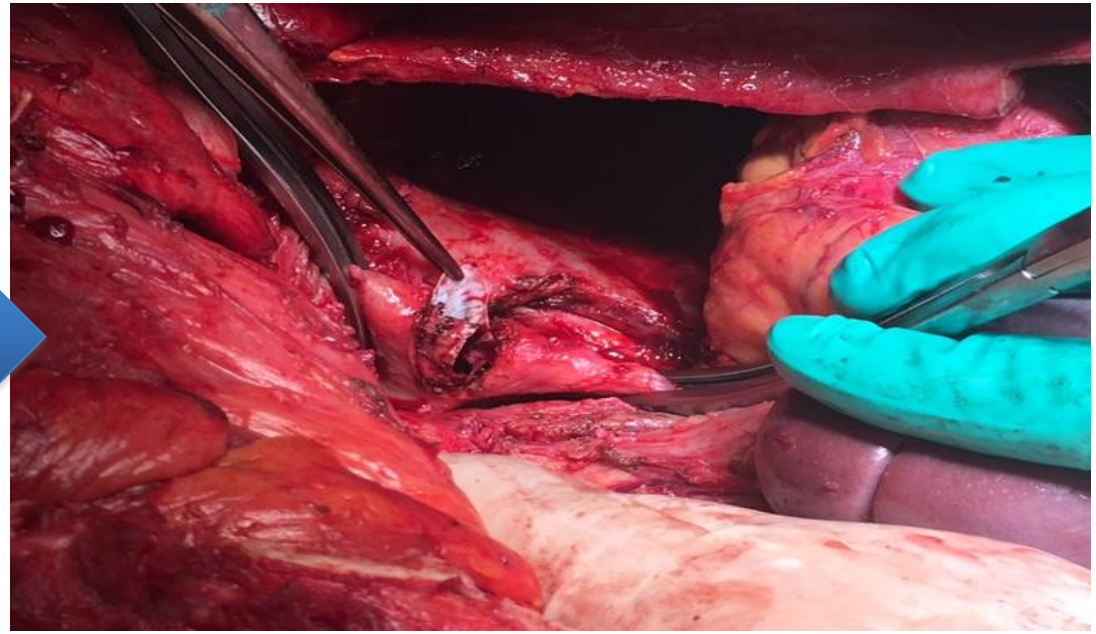
Recovery
TPN and respiratory wean
Oesophagesctomy
Colonic transposition
Long-term antibiotic therapy

RUPTURE AFTER EMERGENCY STENTING

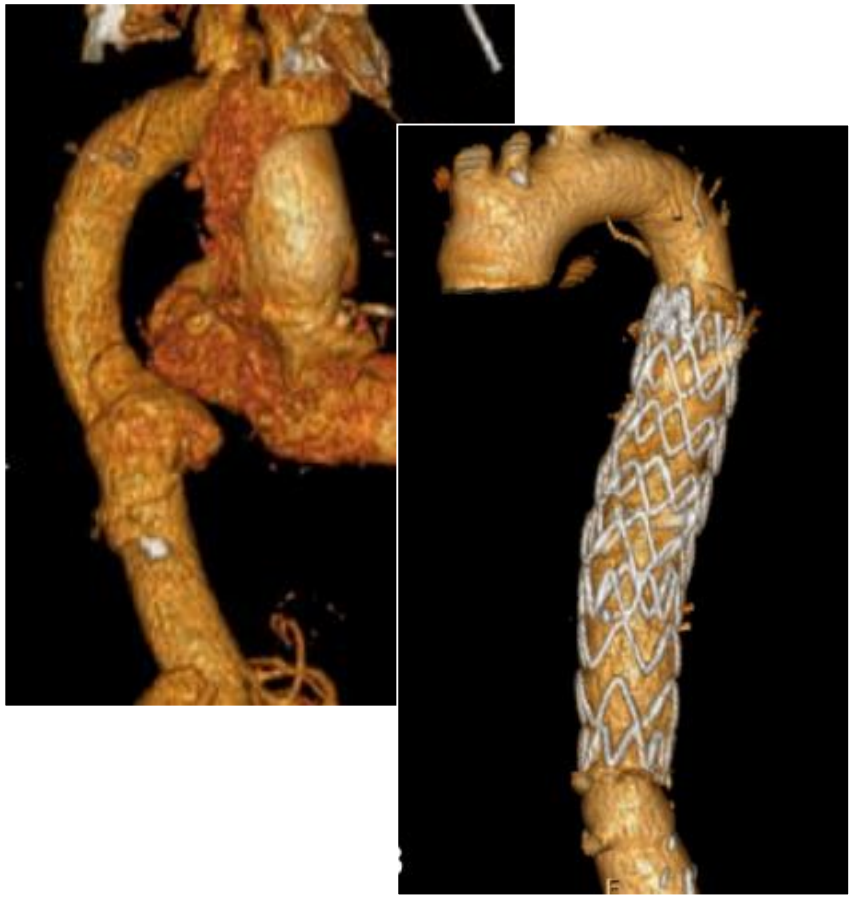
EXCISION OF THORACIC GRAFT AND BYPASS



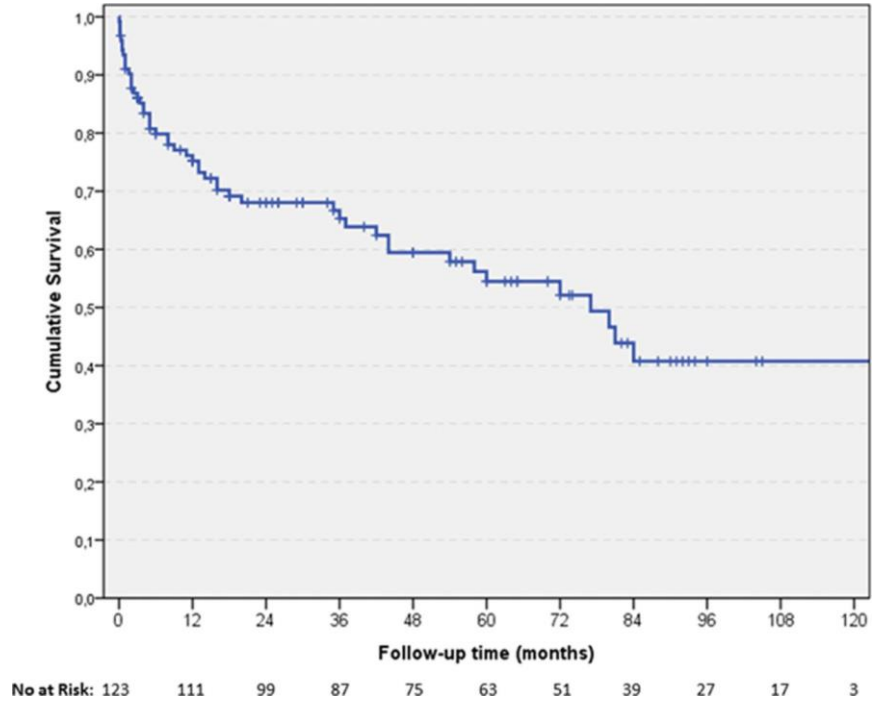




LONG TERM RESULTS – PRIMARY AORTIC INFECTION



Kaplan–Meier 10-year survival curve of 123 patients treated for a mycotic aortic aneurysm by means of endovascular technique.



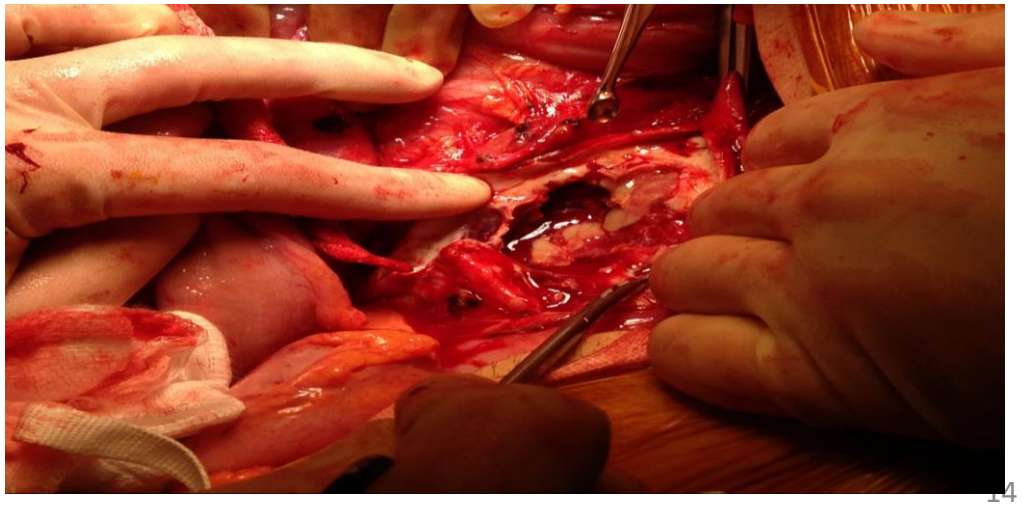
Success in those without

- Persistent sepsis
- Aorto-enteric fistula
- Some bacterial types - Samonella

Karl Sörelius et al. Circulation. 2014;130:2136-2142

LONG TERM – SECONDARY AORTIC INFECTION

- Graft excision
  - **IN SITU BYPASS**
    - **VEIN**
    - Dacron
    - Bovine or similar
    - Human aorta
  - Extra-anatomical
- Conservative measures
  - Antibiotics
  - Drainage of sac



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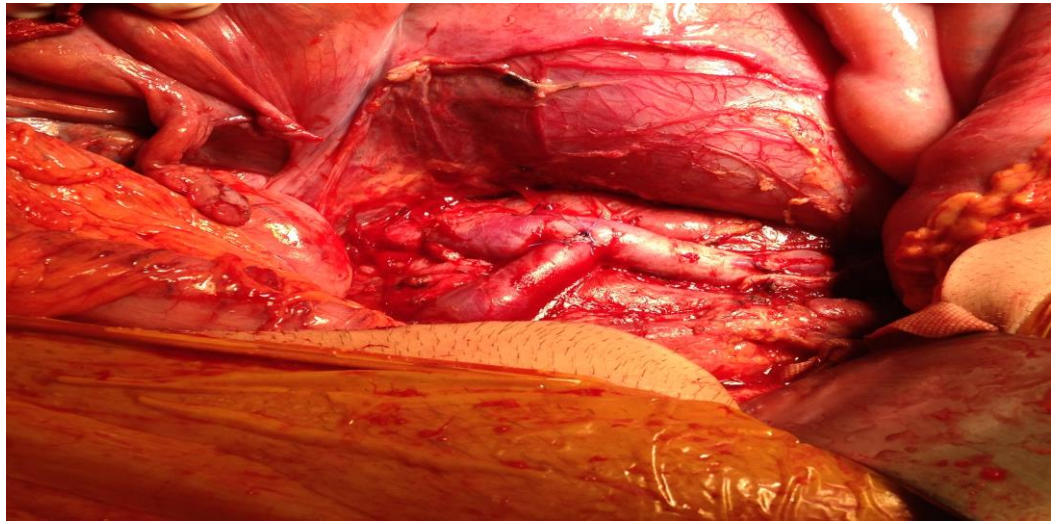
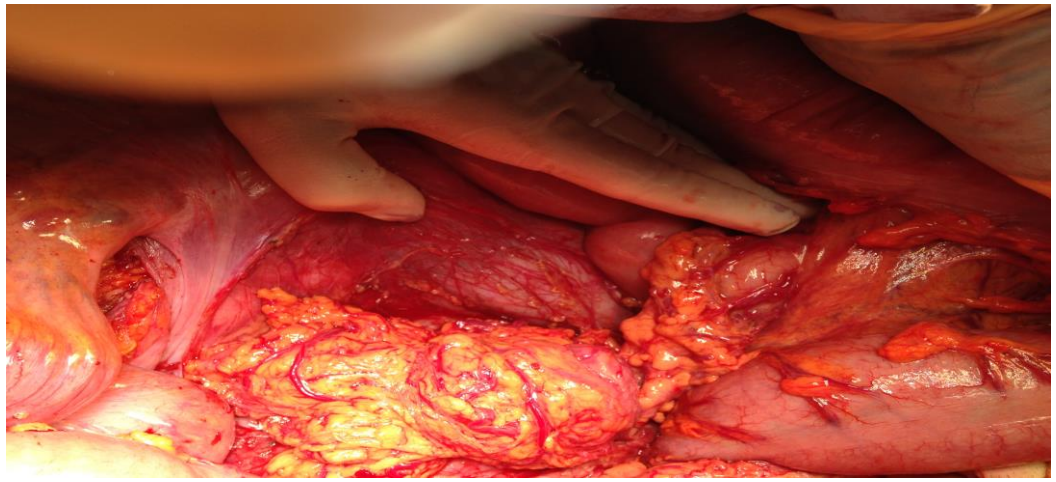
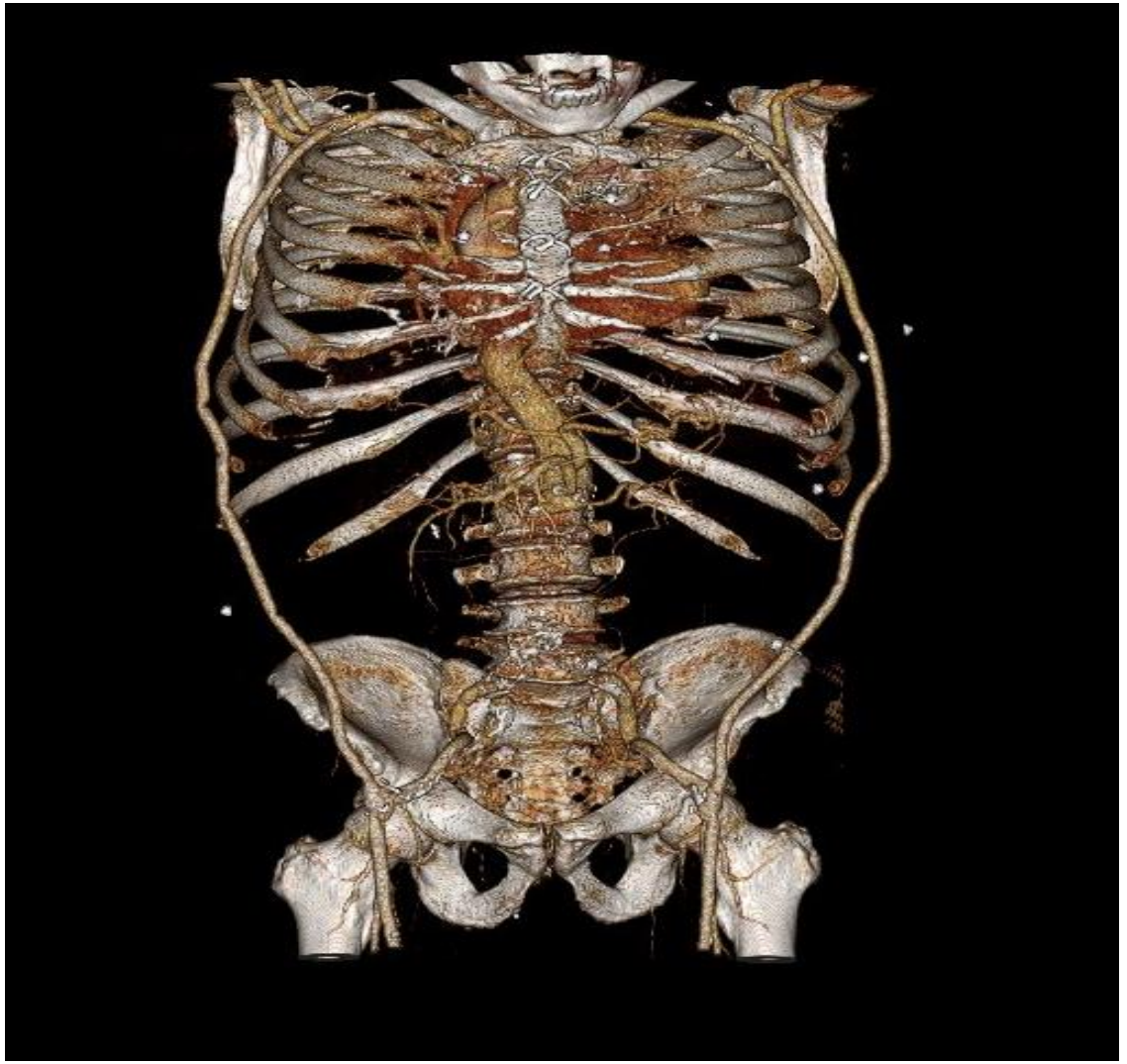
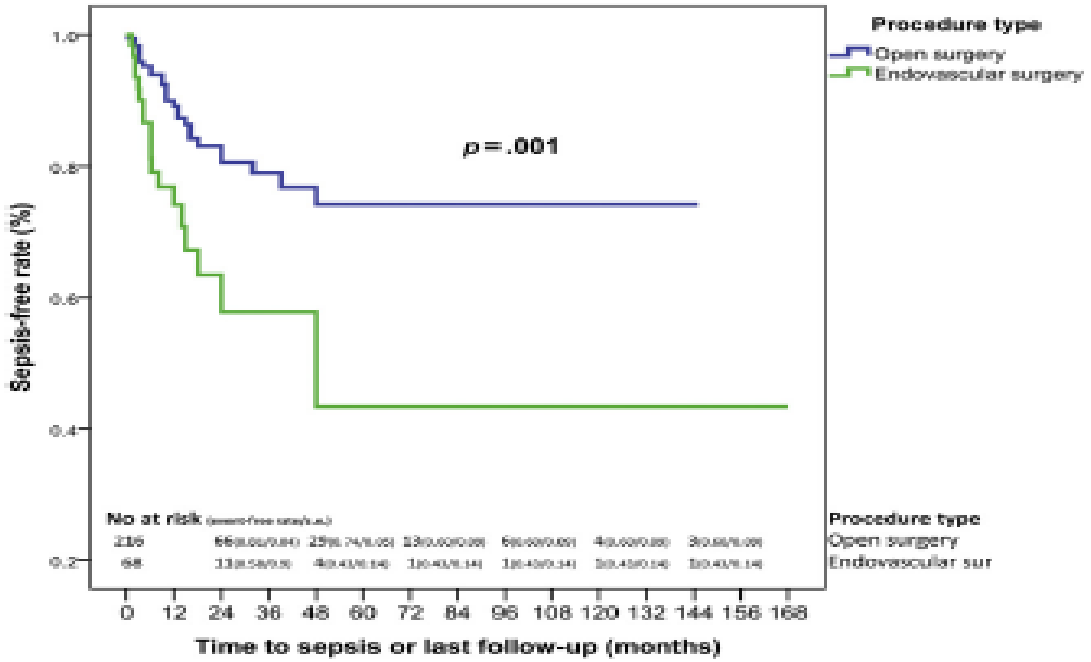


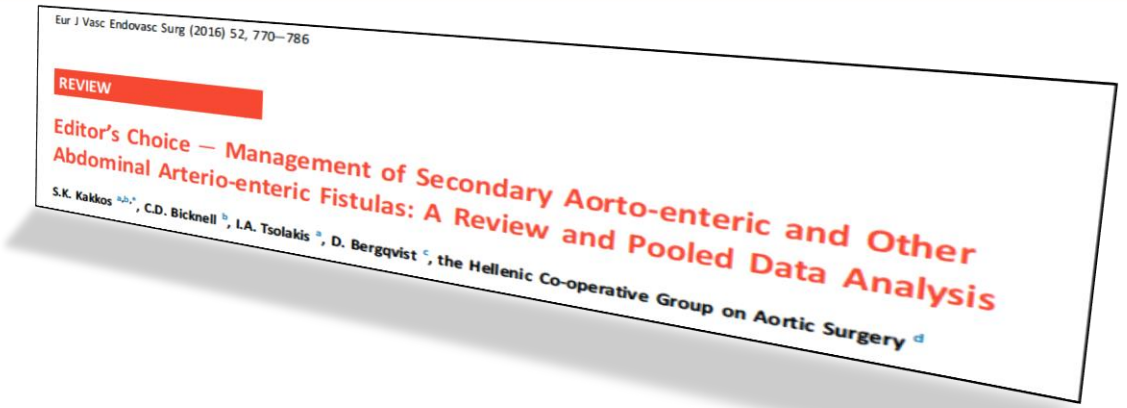


LONG TERM – SECONDARY AORTIC INFECTION

- Graft excision
  - In situ bypass
    - Vein
    - Dacron
    - Bovine or similar
    - Human aorta
  - **EXTRA-ANATOMICAL**
- Conservative measures
  - Antibiotics
  - Drainage of sac



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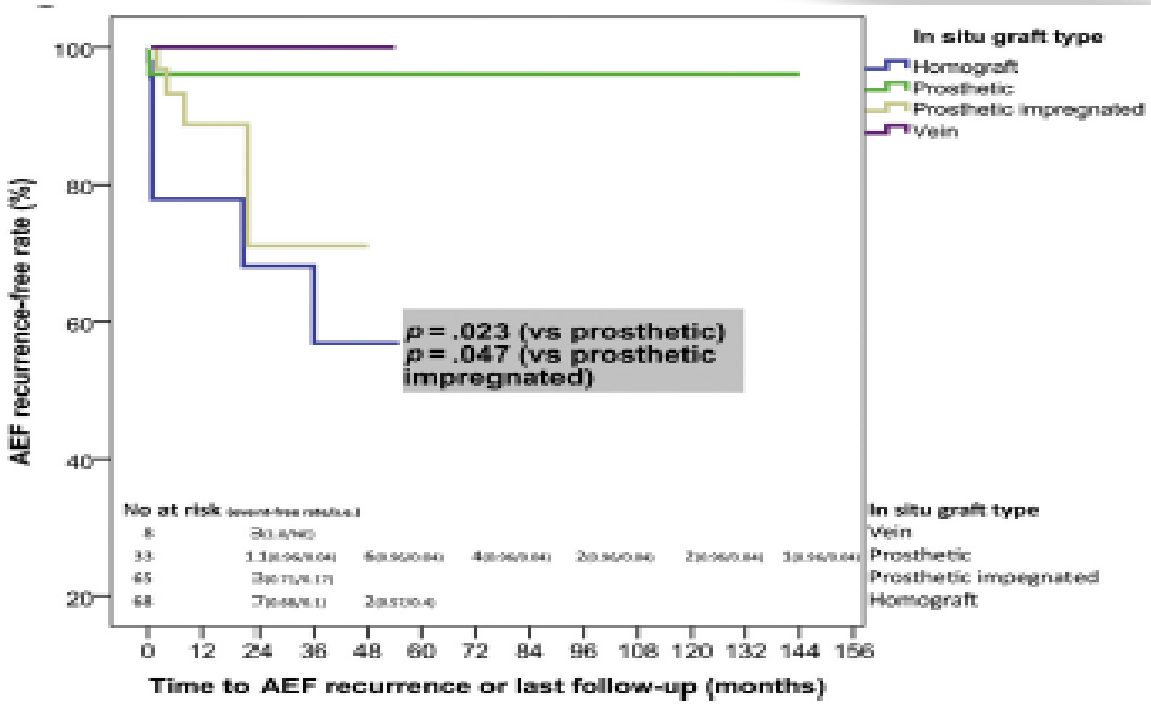
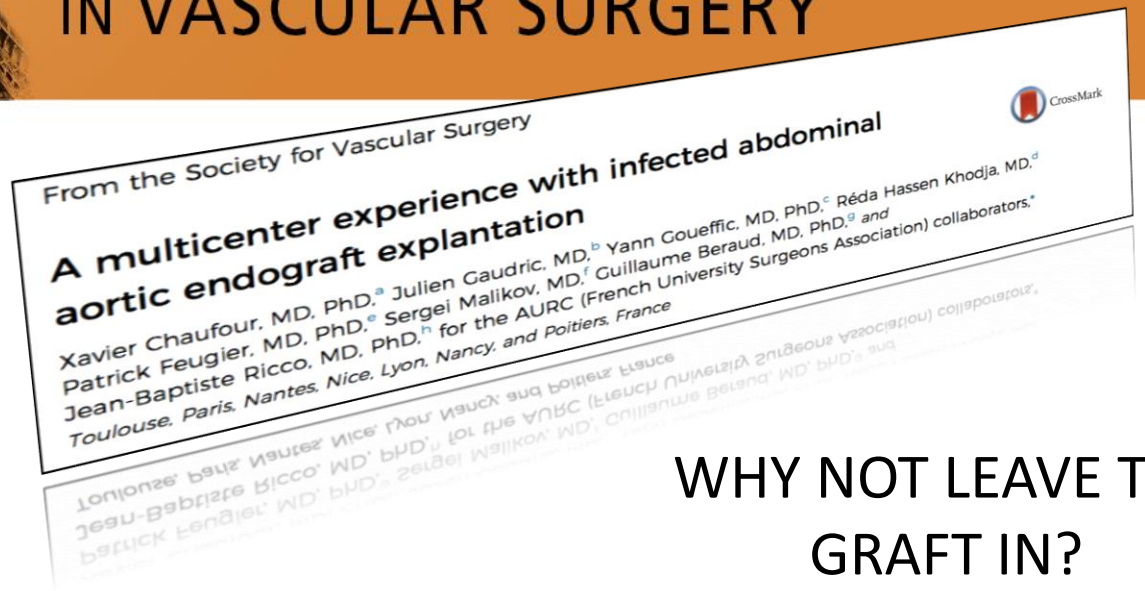


RATE OF RECURRENT SEPSIS:

Open graft excision surgery 19% at 2 years

Endovascular 42% at 2 years


From the Society for Vascular Surgery

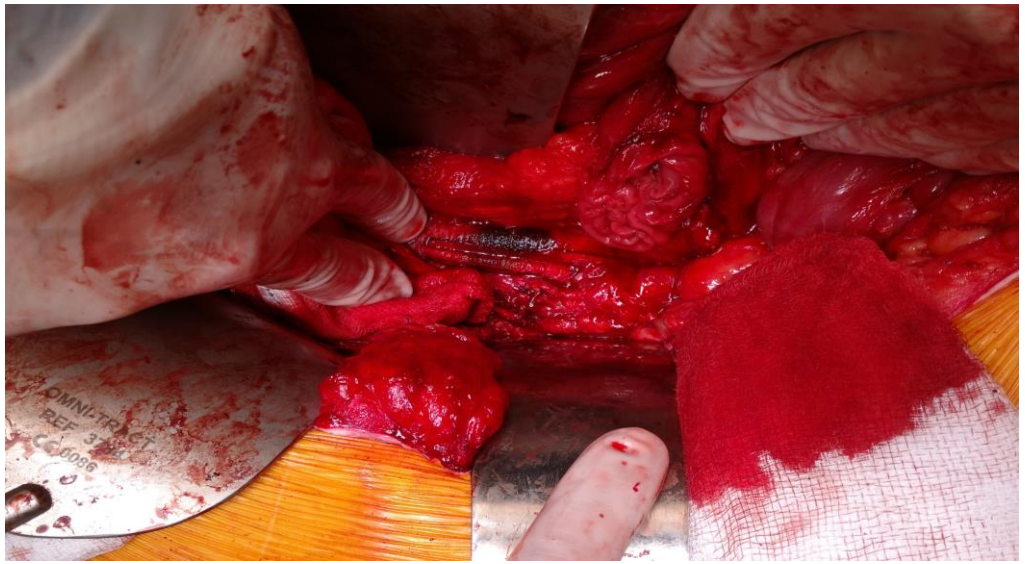
A multicenter experience with infected abdominal aortic endograft explantation

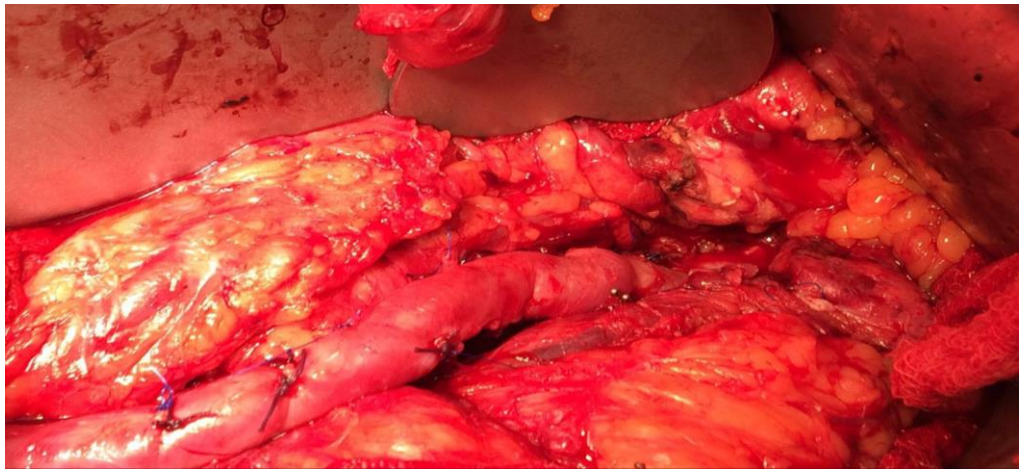
Xavier Chaufour, MD, PhD,[a] Julien Gaudric, MD,[b] Yann Goueffic, MD, PhD,[c] Réda Hassen Khodja, MD,[d] Patrick Feugier, MD, PhD,[e] Sergei Malikov, MD,[f] Guillaume Beraud, MD, PhD,[g] and Jean-Baptiste Ricco, MD, PhD,[h] for the AURC (French University Surgeons Association) collaborators,* *Toulouse, Paris, Nantes, Nice, Lyon, Nancy, and Poitiers, France*

WHY NOT LEAVE THE GRAFT IN?

An interesting finding in a study by Chaufour et al was that AEF was present in a third of patients with infected endografts

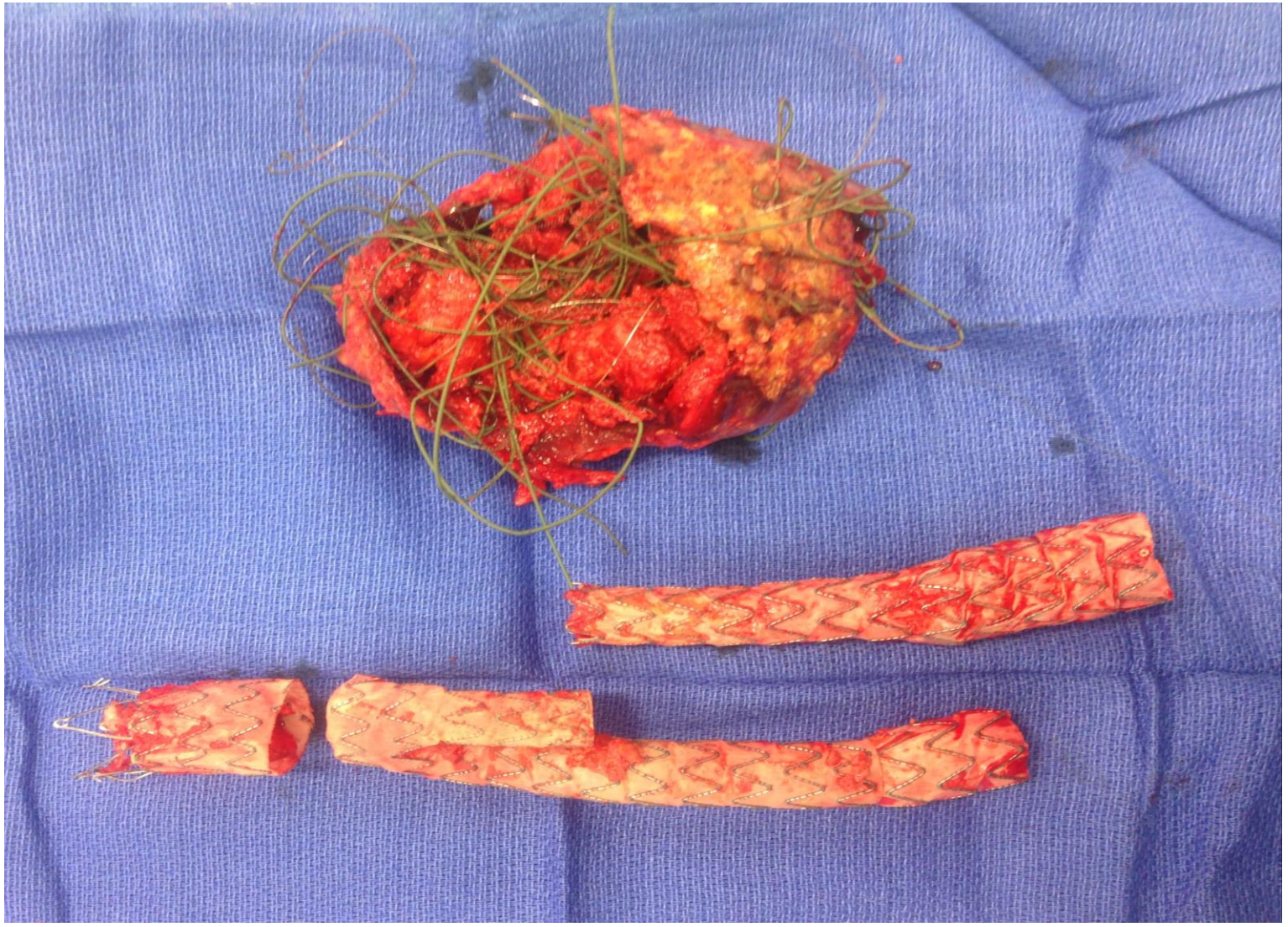
AEF is a more common finding than initially thought.





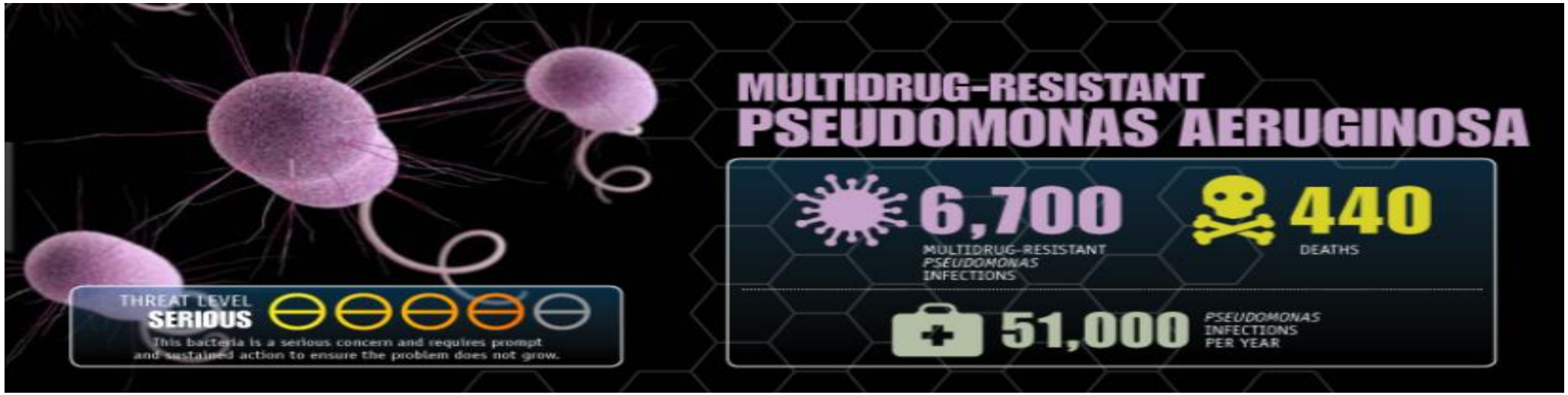
WHY NOT LEAVE THE GRAFT IN?

Graft infection is commonly associated with multiple interventions, providing a further nidus for infection



ANTIMICROBIAL RESISTANCE

- In 2013, CDC published a report outlining the top 18 drug-resistant threats to the United States.
- Threats are categorized based on level of concern: urgent, serious, and concerning.



The Reality – I am sorry

KEY MESSAGES

- Stenting of infected aorta and graft infection in emergency is life saving

- For primary cases, endografts in those without ongoing sepsis, aorto-enteric fistula and certain microbiological types

- For infection in vascular grafts the traditional teaching is removal…for a reason and anything but graft removal is palliation.
- Graft excision, with extra-anatomical bypass or deep vein reconstruction should be the aim of surgery
- The reality is not all of the reach this stage and we can palliate successfully in many