

# Late open surgical repair for endoleak after EVAR

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# Disclosure

- No potential conflicts of interest in this presentation



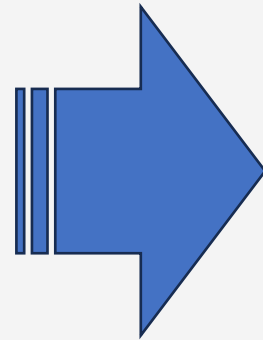
# CONTENTS

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- Current status for open conversion on type II endoleak
- The appropriate method for open conversion

## Type II endoleak

- **Embolization**
  - ✓ **Coil**
  - ✓ **Glue**
  - ✓ **Onyx**



- **Aneurysmorrhaphy**  
**(Preservation of stent graft)**
- **Ligation of culprit arteries**  
**(Preservation of stent graft)**
- **Total explantation**  
**(Explantation of stent graft)**

**Until when we try endovascular procedures?**

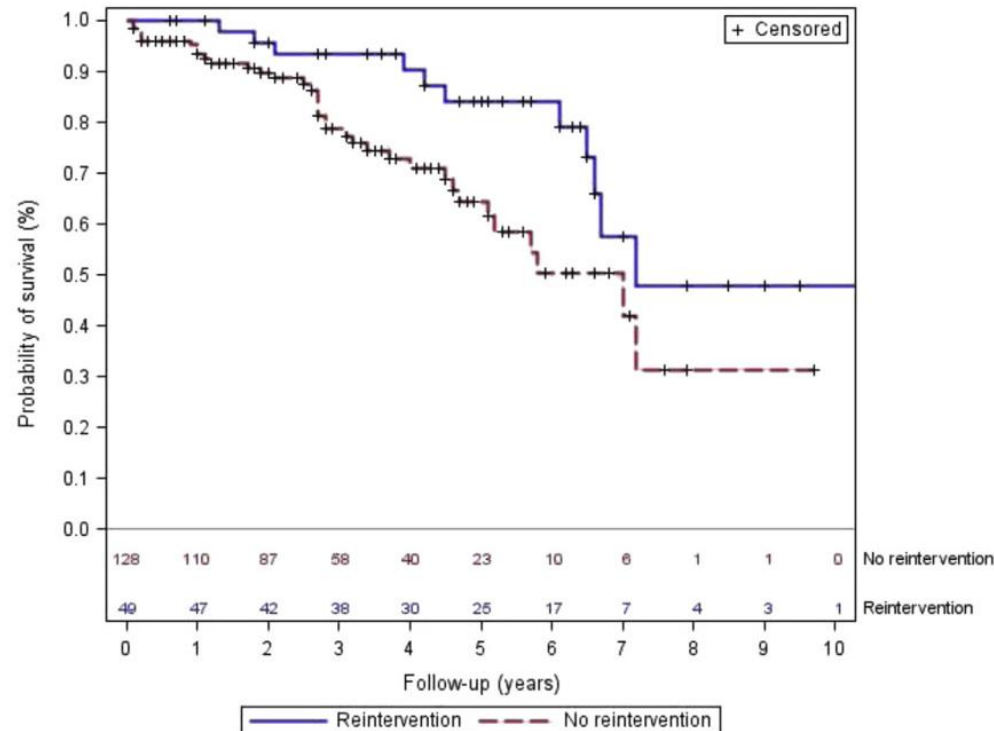


**No consensus, yet**

**In my opinion...**

# Late open conversion for type II endoleak

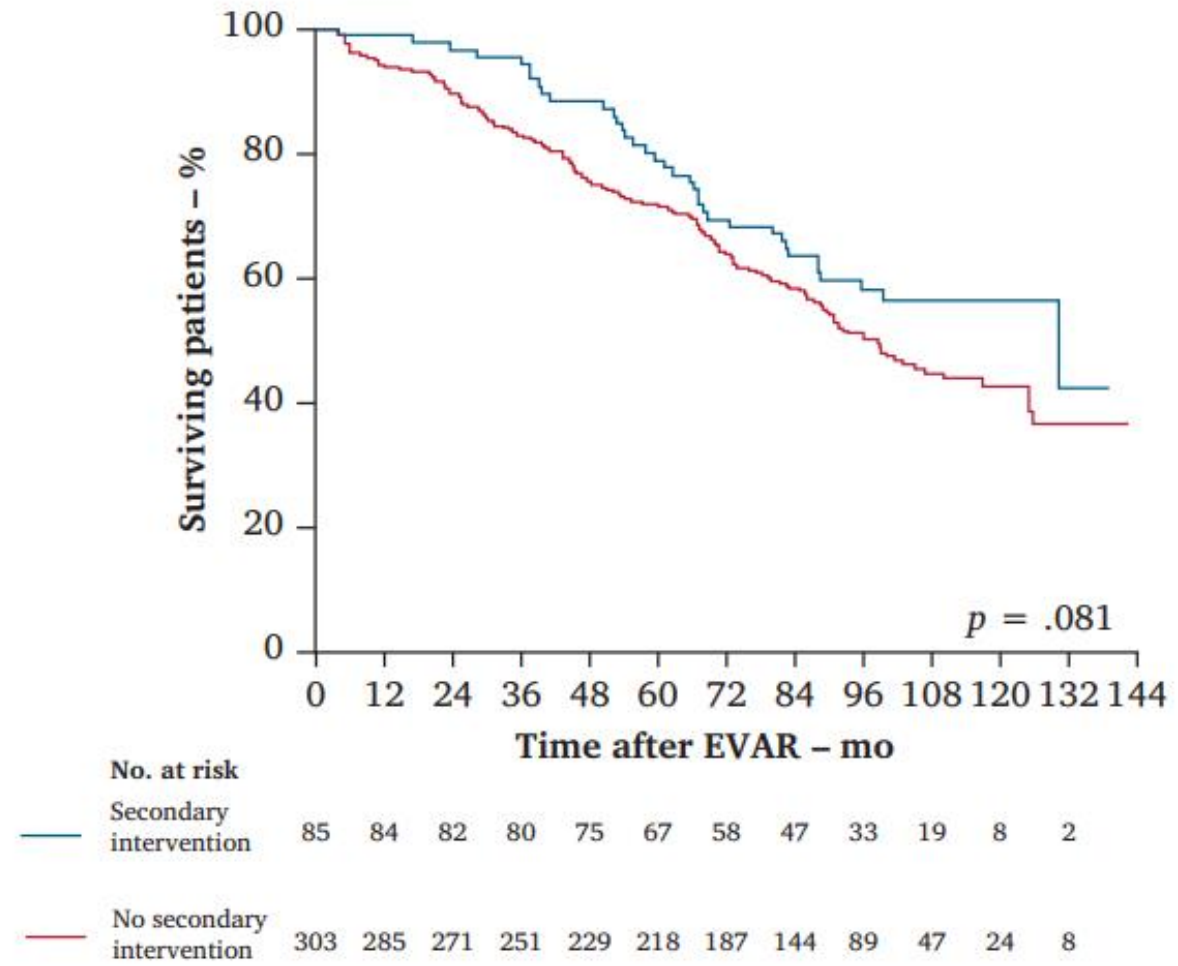
Type II endoleak with or without intervention after endovascular aortic aneurysm repair does not change aneurysm-related outcomes despite sac growth



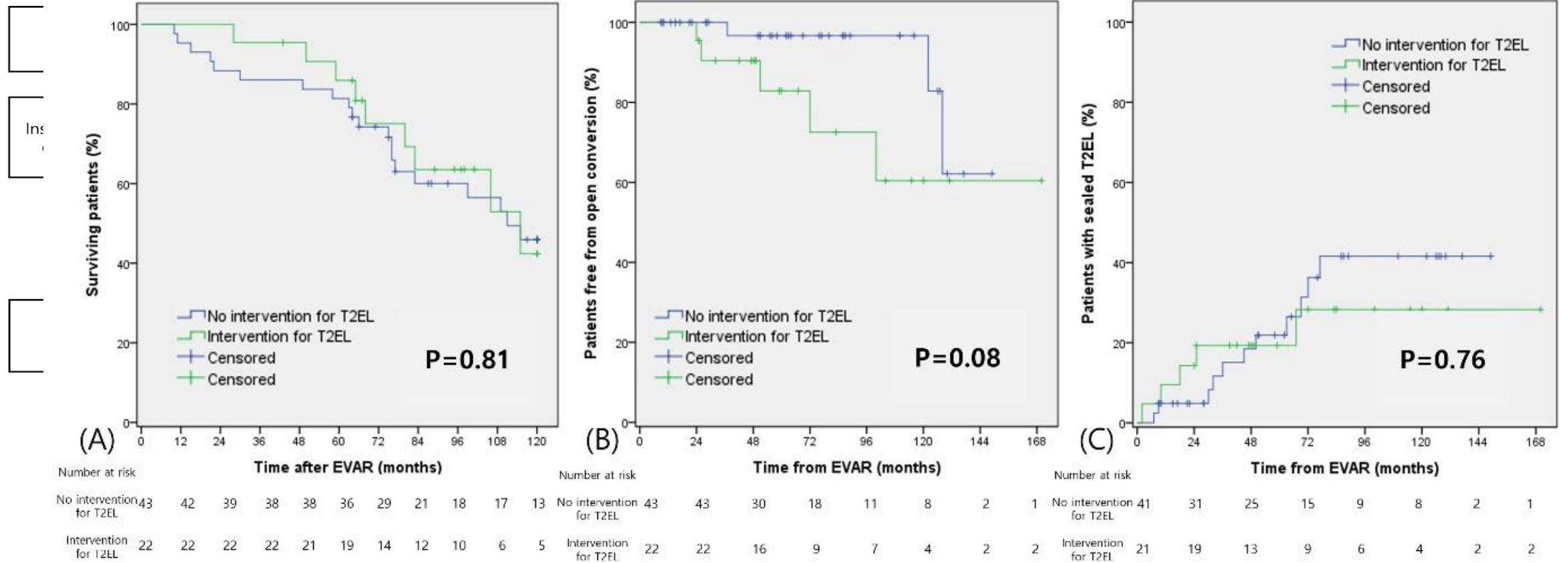
# Late open conversion for type II endoleak



## Type 2 Endoleak With or Without Intervention and Survival After Endovascular Aneurysm Repair



# Late open conversion for type II endoleak



22  
Intervention for  
type 2 endoleaks+

43  
Intervention for  
Type 2 endoleaks-



**Until when we try endovascular procedures?**



**No consensus, yet**

**In my opinion...**

**If late onset or rapid growth type II endoleak, operate when the patient is at least one year younger...**

# Late open conversion for type II endoleak



### **Semi open conversion – Preservation of stent graft**

**Aneurysmorrhaphy**

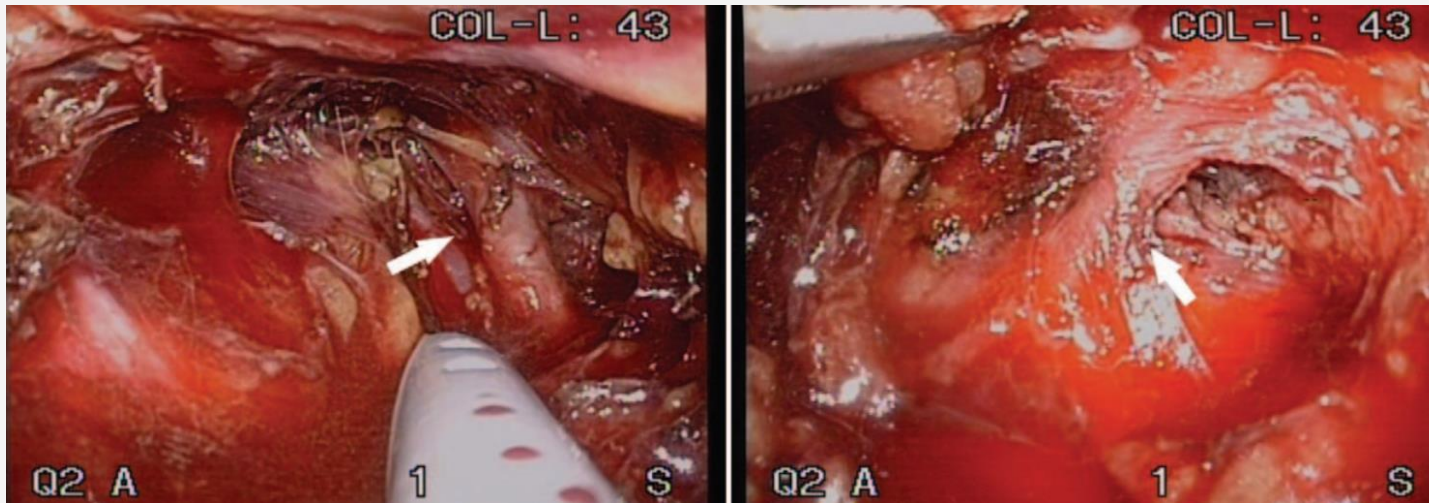
**Ligation of culprit arteries**

**VS**

### **Total open conversion – Explantation of stent graft**

# Methods for open conversion

## Ligation of culprit arteries

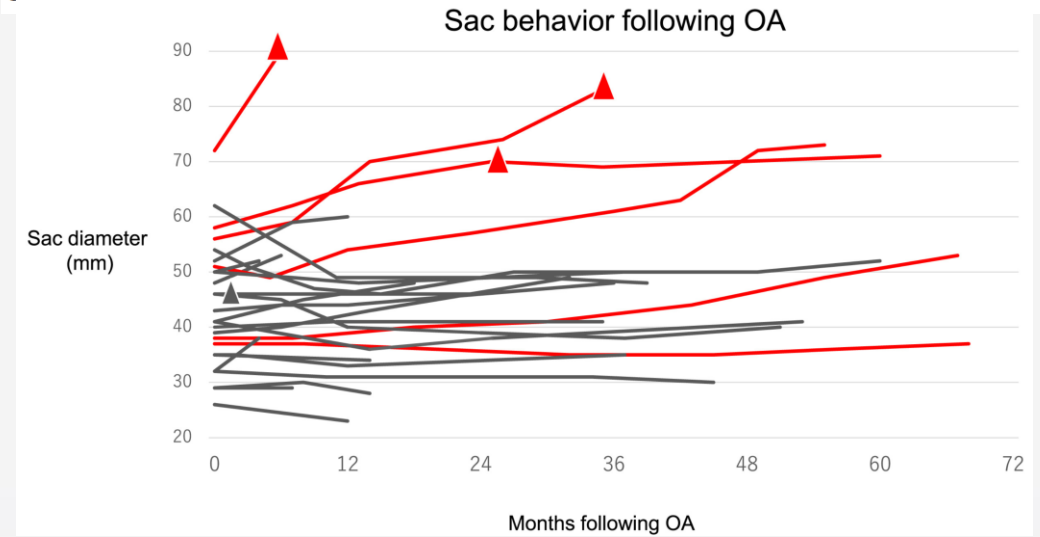
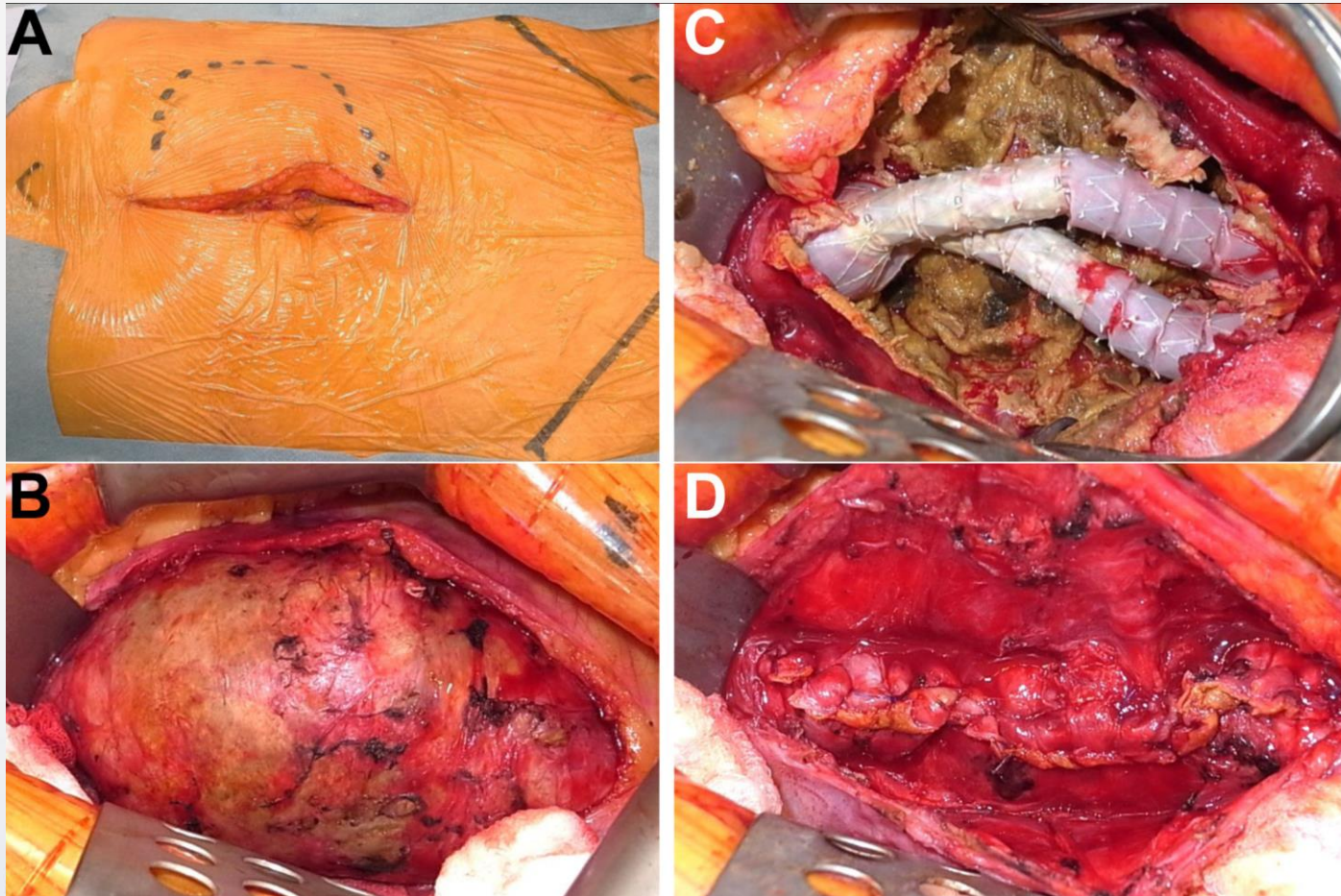


Clinical research study

Abdominal aortic and iliac artery aneurysms

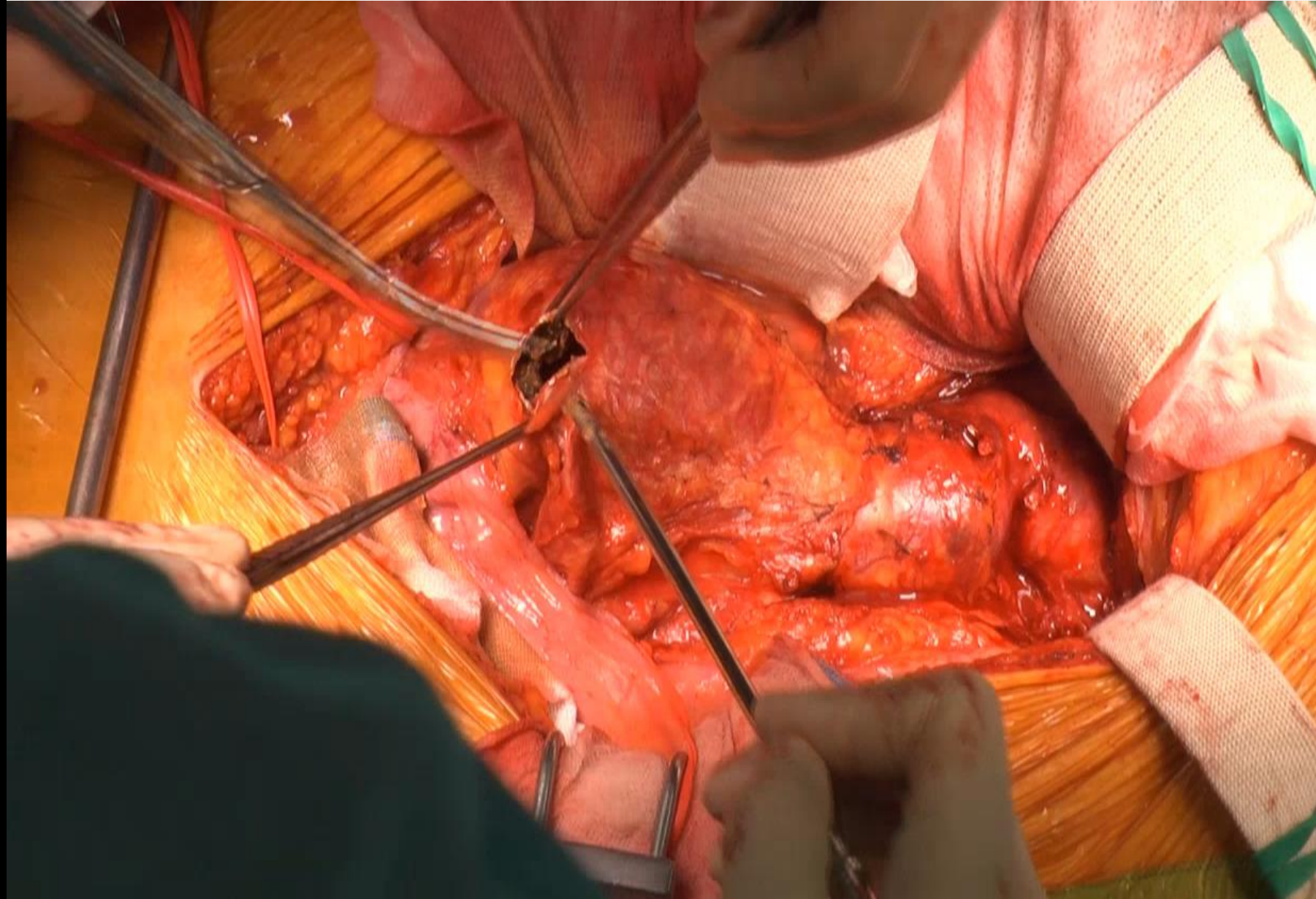
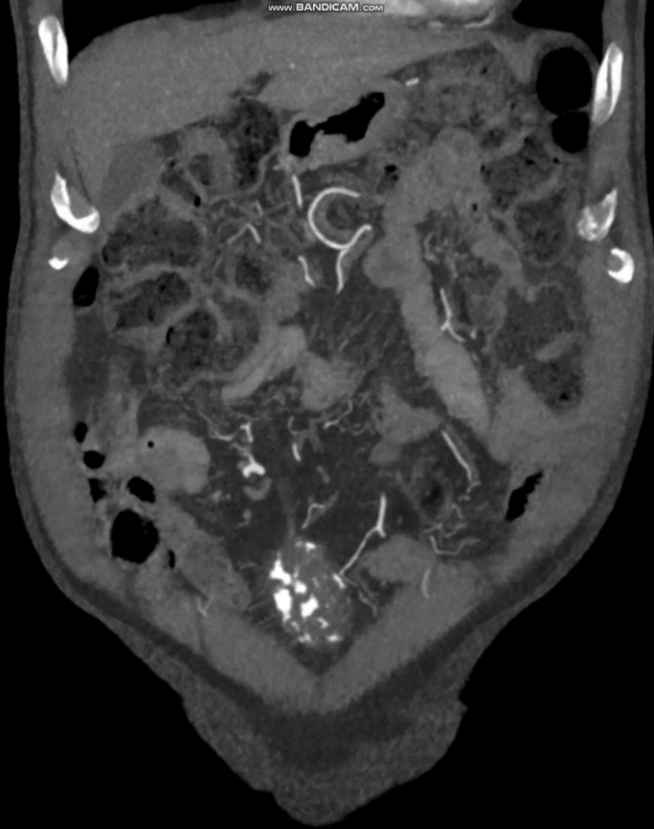
## Evolution of open aneurysmorrhaphy for management of sac expansion after endovascular repair of abdominal aortic aneurysms

## Aneurysmorrhaphy

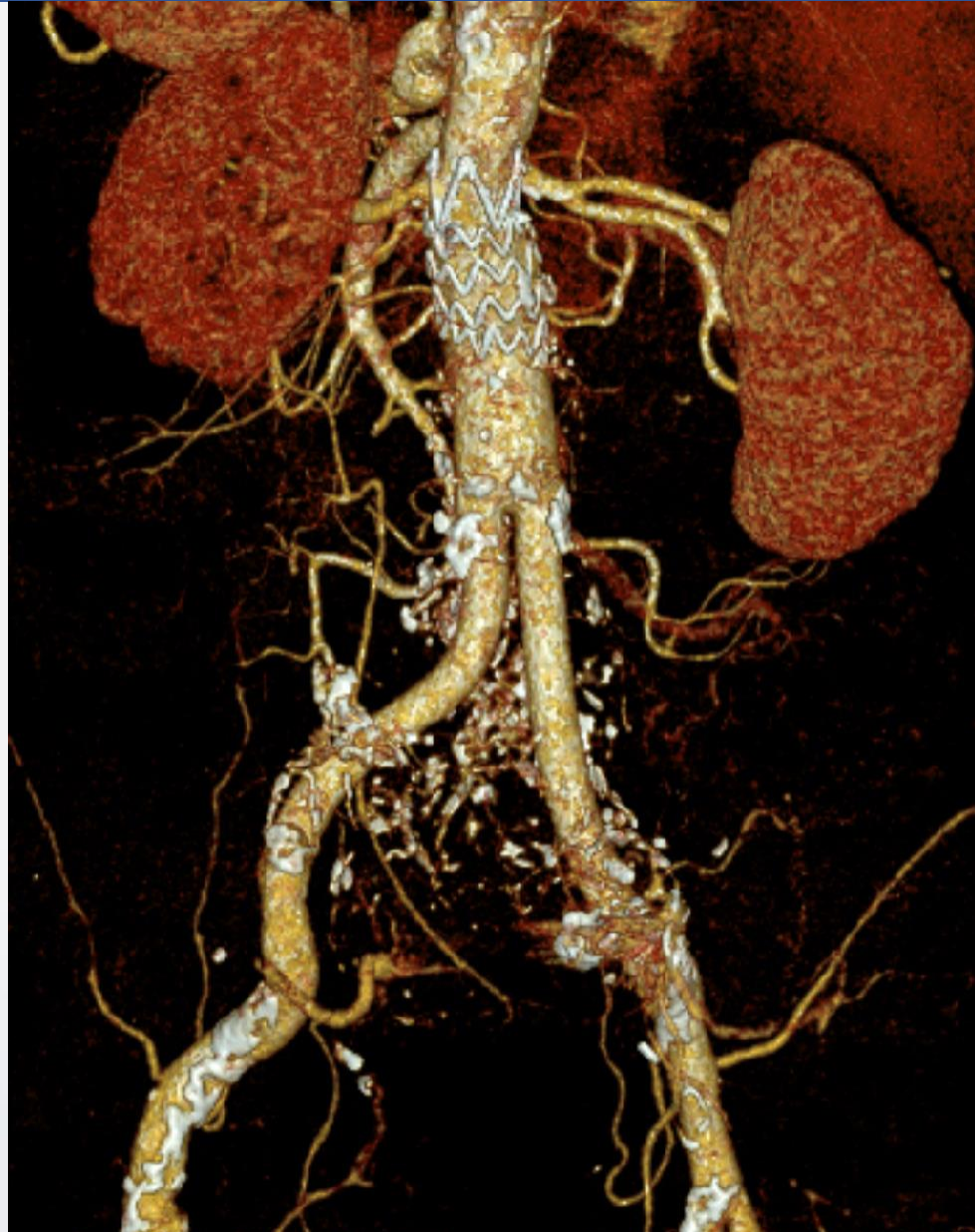


**Sac size increases again at 6/28 (21.4%) ???**

# Methods for open conversion (6cm -> 10cm / 6 years)



# Methods for open conversion (6cm -> 10cm / 6 years)



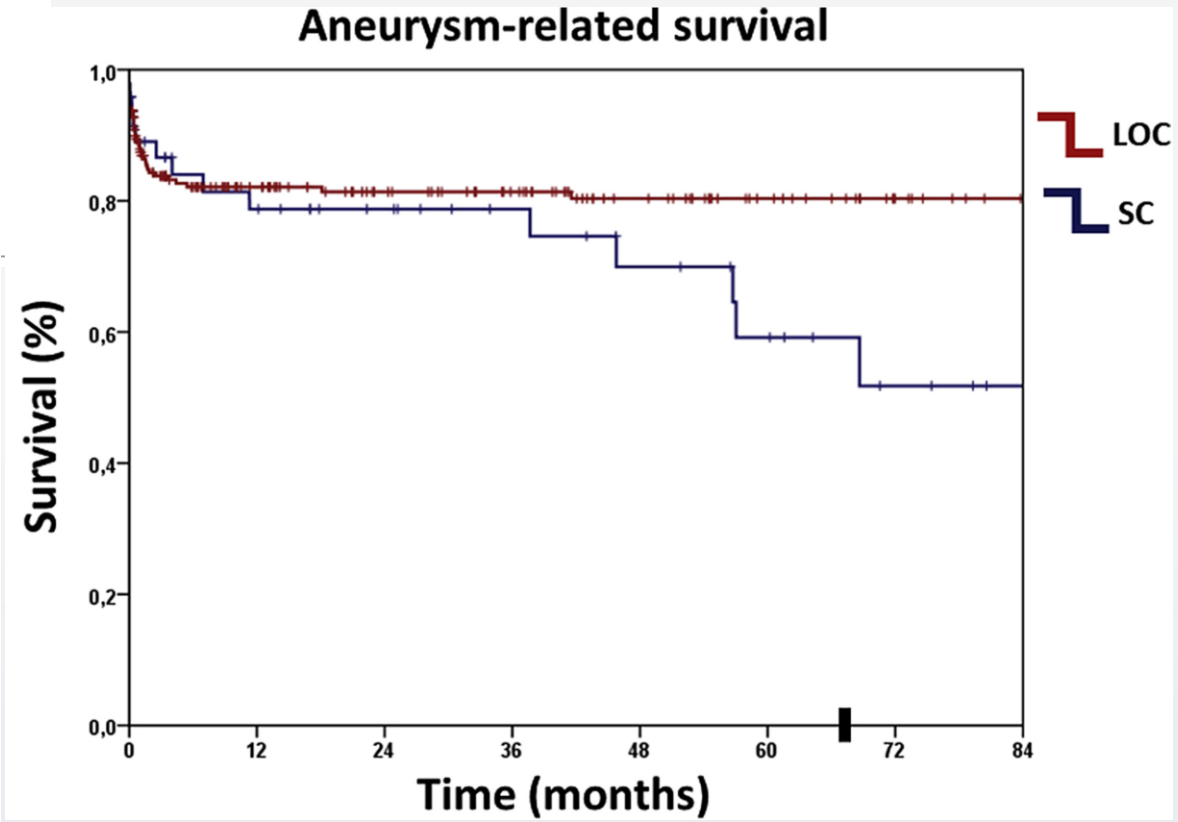
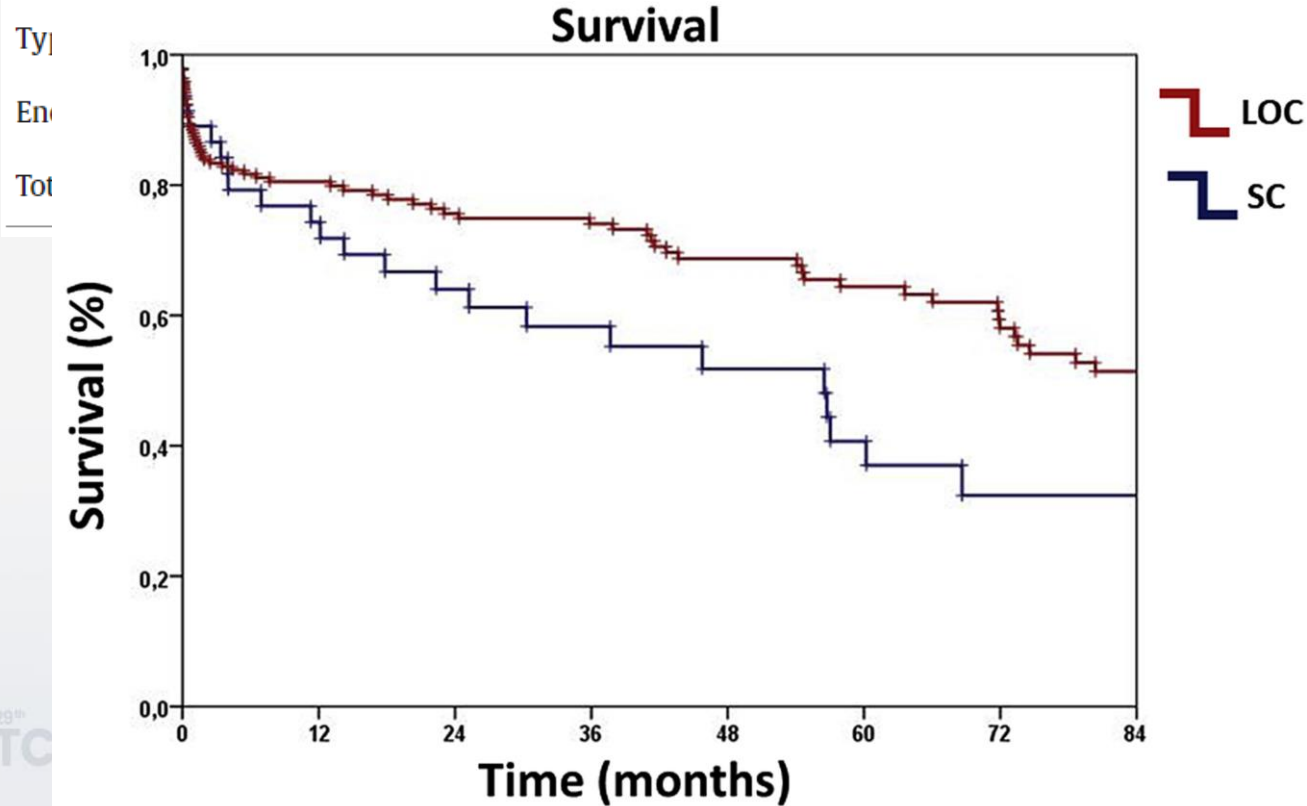
Clinical research study

Abdominal aortic and iliac aneurysms

Multicenter comparison between open conversions and semi-conversions for late endoleaks after endovascular aneurysm repair

## Semi (SC) vs Total (LOC)

Indication for surgery	LOC (n, %)	SC (n, %)	P value
Type I EL	138 (62.2)	16 (33.3)	<.001
Type II EL	48 (21.6)	31 (64.6)	<.001





# Conclusion

- Type II endoleak can be treated with **endovascular treatment**, but the probability of **recurrence is high**.
- When embolization of late onset or rapid sac growth type II endoleak fails, a strategy of **early open surgical repair is also worth considering**.
- **Total explantation of stent graft** has relatively low risk of recurrence and has a **better prognosis** than semi open conversion.