CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE

CONTROVERSIES & UPDATES IN VASCULAR SURGERY

JANUARY 23-25 2014

MARRIOTT RIVE GAUCHE & CONFERENCE CENTER PARIS, FRANCE

When branched or fenestrated stent grafts ? When Chimney ?

E Ducasse

Unit of Vascular Surgery

Bordeaux

www.cacvs.org

Disclosure

Speaker name:

Eric DUCASSE .....

- ■ I have the following potential conflicts of interest to report:
- ■ Consulting : Abbott, Bard, Biotronik, Boston-Scientific, Cook, Cordis, Gore, Medtronic
- □ Employment in industry
- □ Shareholder in a healthcare company
- □ Owner of a healthcare company
- □ Other(s)

I do not have any potential conflict of interest

First report of a juxtarenal AAA treatment with a **fEVAR**

A Fenestrated Covered Suprarenal Aortic Stent

F. Browne*[1], D. Hartley[2], S. Purchas[2], M. Rosenberg[3], G. Van Schie[3] and M. Lawrence-Brown

[1]Department of Surgery, Broomfield Hospital, Chelmsford, Essex, U.K.; [2]Department of Vascular Surgery and [3]Department of Radiology, Royal Perth Hospital, Western Australia

EJVES 1999

Since, a number of published series have demonstrated excellent early and mid-term results of the technique.

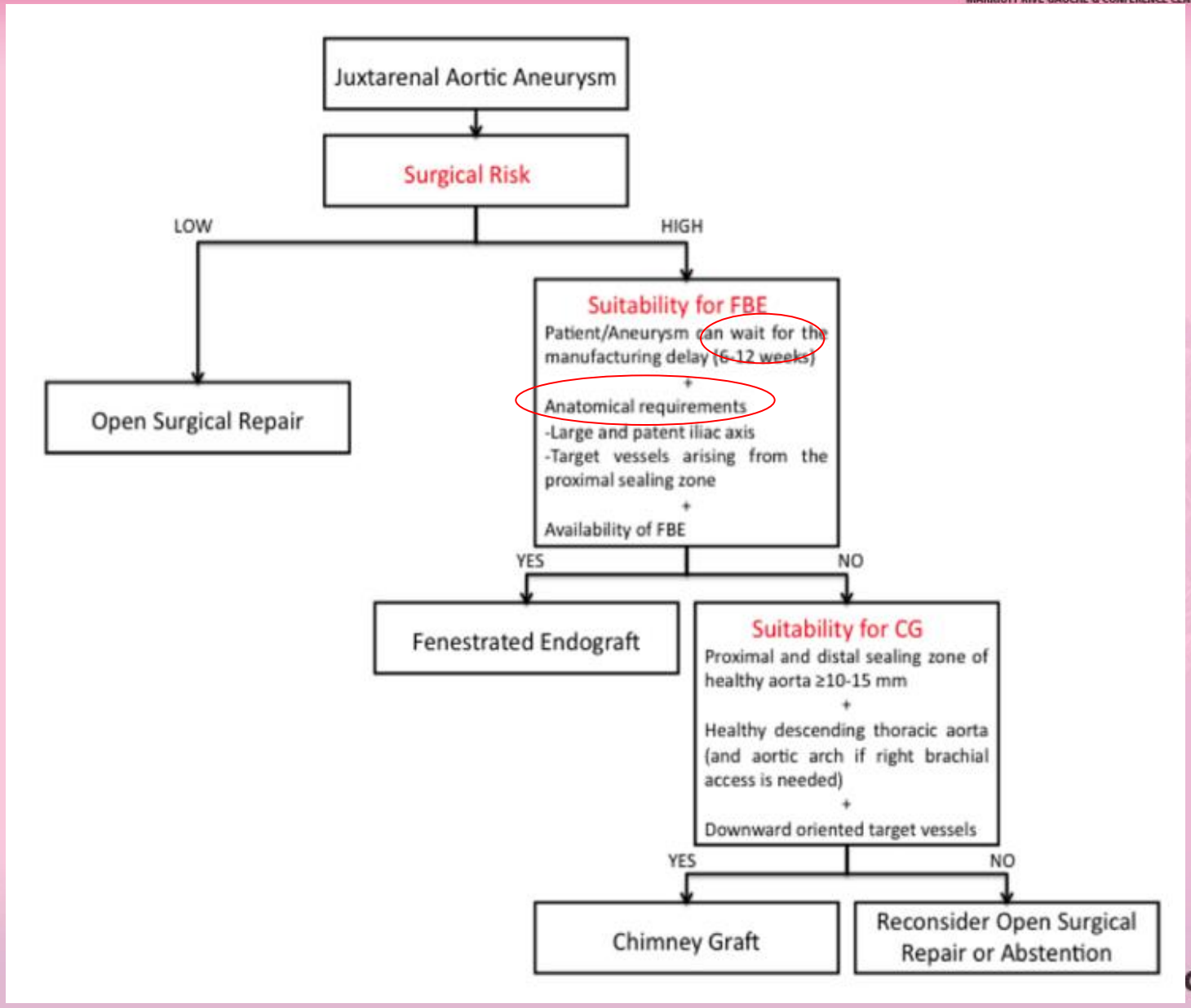
Technical aspects, current indications, and results of chimney grafts for juxtarenal aortic aneurysms

Raphael Coscas, MD,[a] Hicham Kobeiter, MD,[b] Pascal Desgranges, MD, PhD,[a] and Jean-Pierre Becquemin, MD,[a] *Créteil, France*

JVS 2011

- Series included 16 patients
- Median aneurysm diameter : 62 mm
- Indication for CG :
  - occlusion/dissection of an iliac artery (n=3) GOOD ACCESS (X 2)
  - low implantation of a renal artery (n=1) MANUFACTURING PROBLEM
  - emergent repair of ruptured aneurysm (n=4) TIME DELAY
  - large diameter JAA (>70 mm) : not wait for manufacturing delay of FBE (n=3) TIME DELAY
  - type Ia endoleak previously treated by infrarenal EVAR (n=3) MANUFACTURING PROBLEM
  - elective (n=2) INTERREST OF THE physician

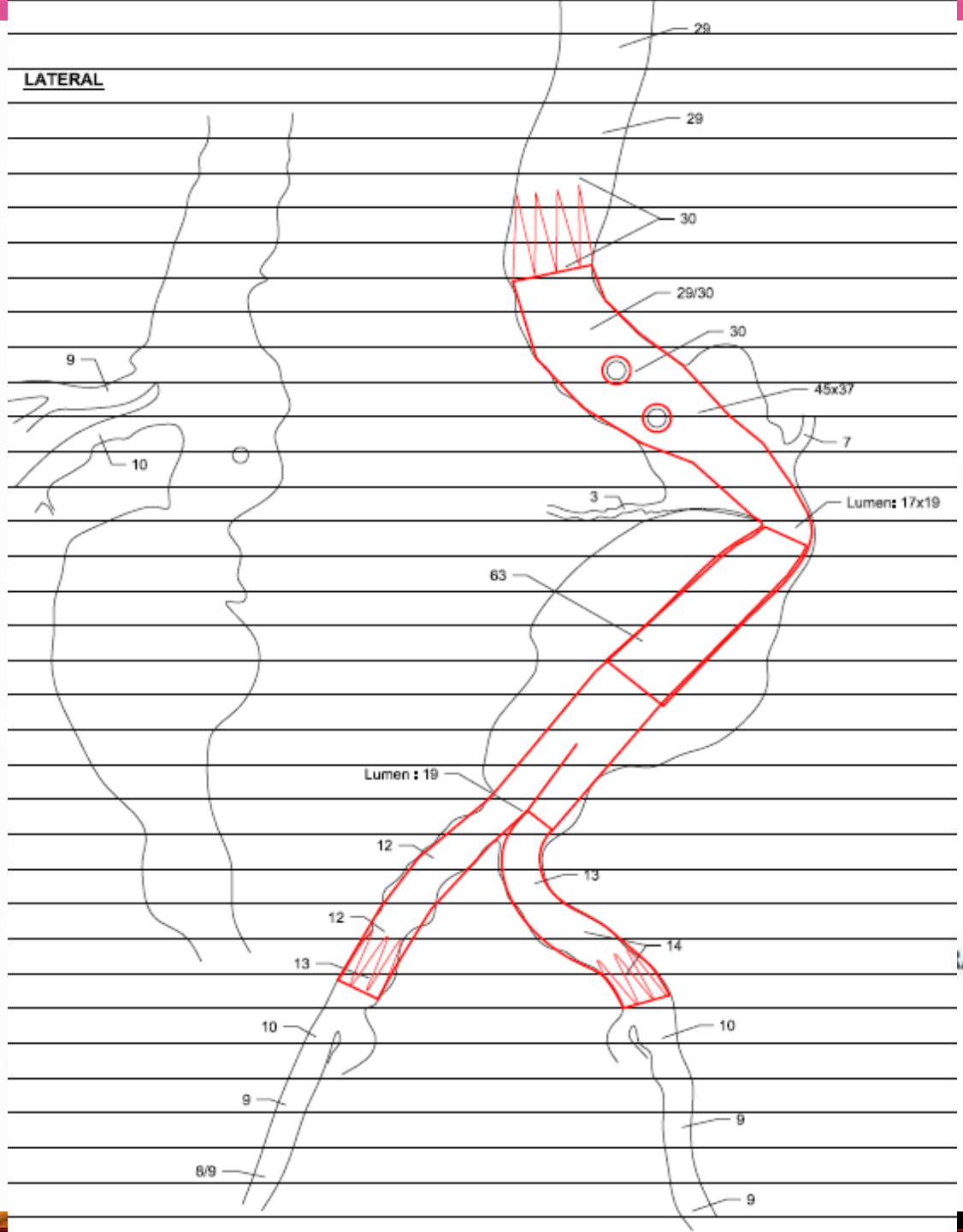
Treatment algorithm of JAA ≥ 55 mm



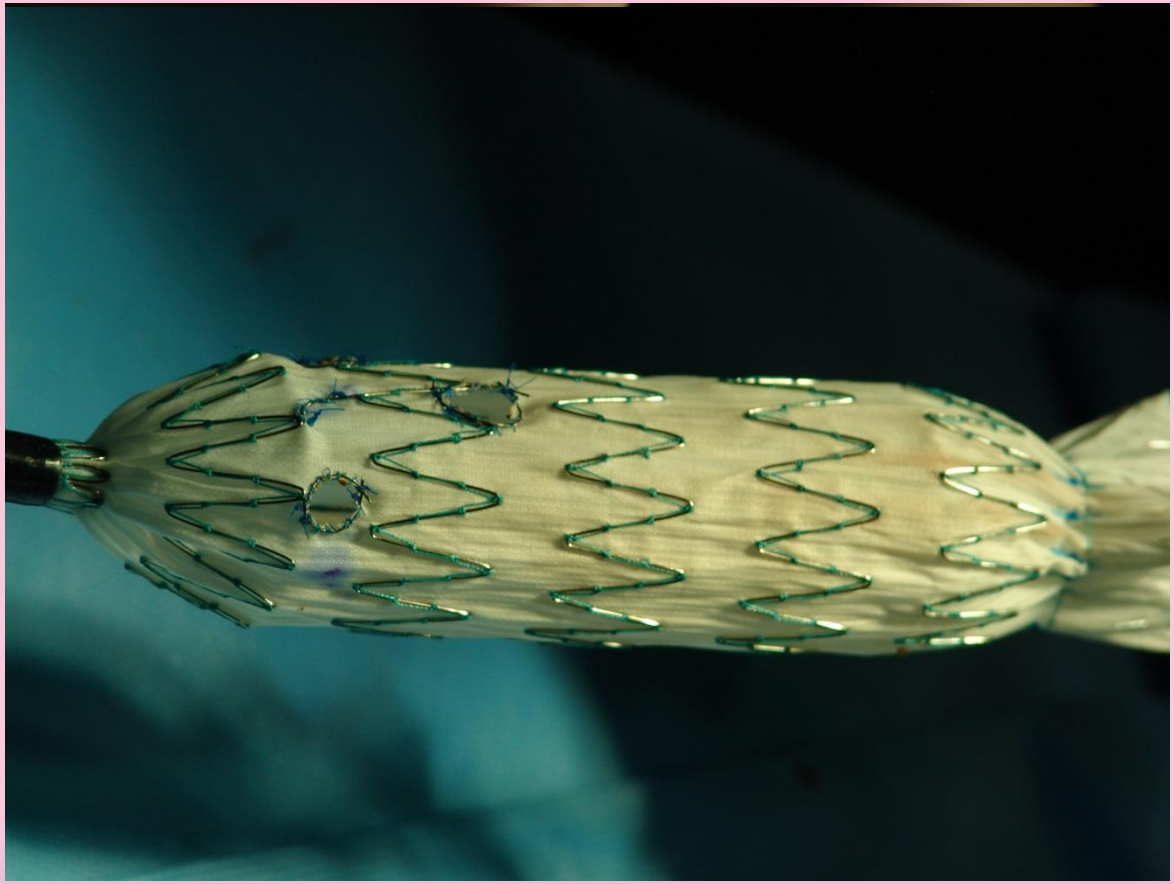
fEVAR

- Not for emergent cases……but….
- Bilateral Iliac access is crucial ++++
  - 18Fr to 24 Fr required on controlateral access for fenestration catheterism
  - Double 7 Fr ponction possible
- Ostium of the target arteries are +/- into the landing/sealing zone (+/- 4 mm to the IVD)
- Angulation/kinking/stenosis of the targeted artery
- Technical considerations
  - Ex: distance small fen.-scallop IVD 15 to 35 : 2h45 to 1h15
  - …..but…..

- f



fEVAR in emergency
Home-made



fEVAR in emergency
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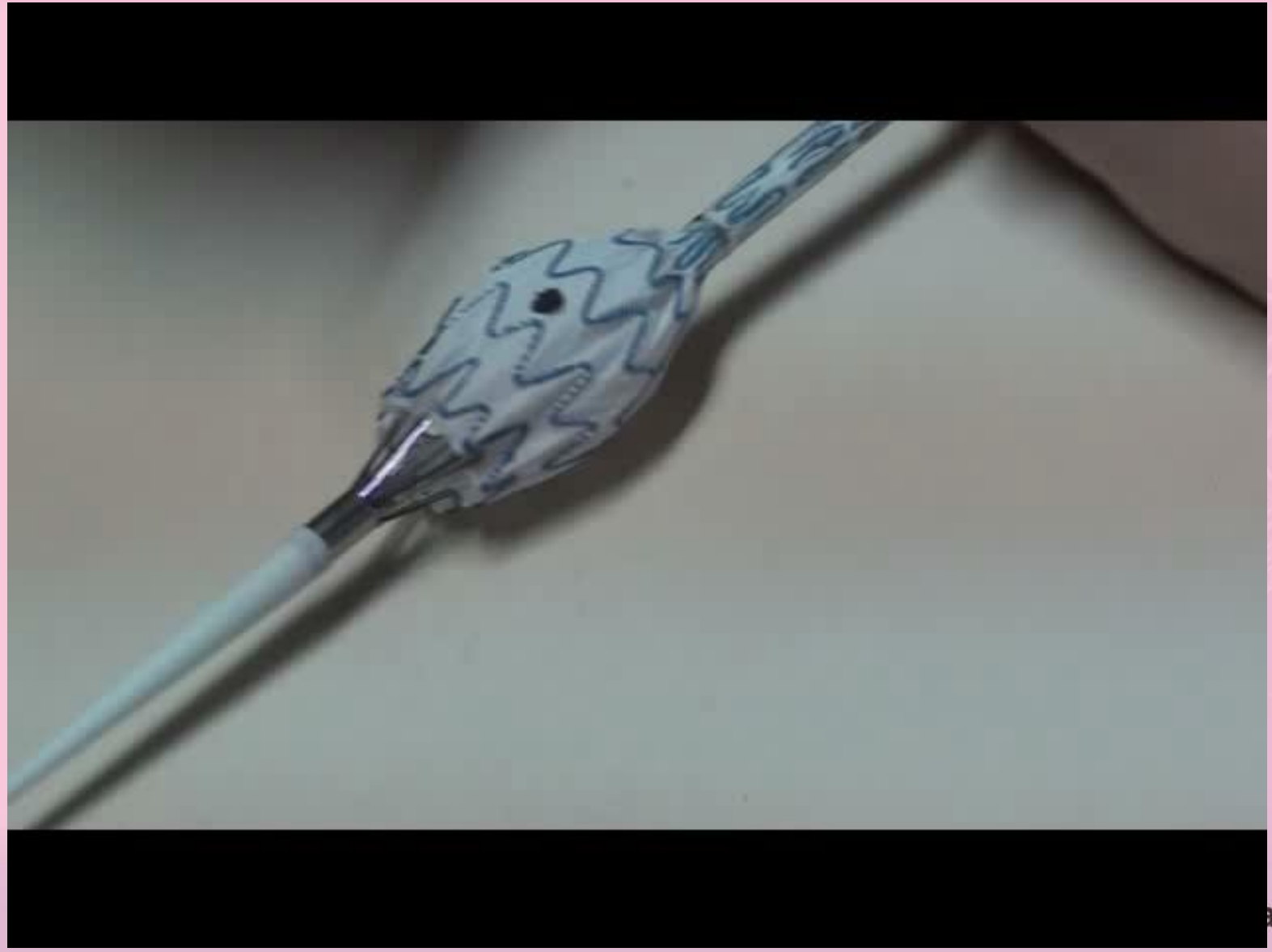

fEVAR in emergency
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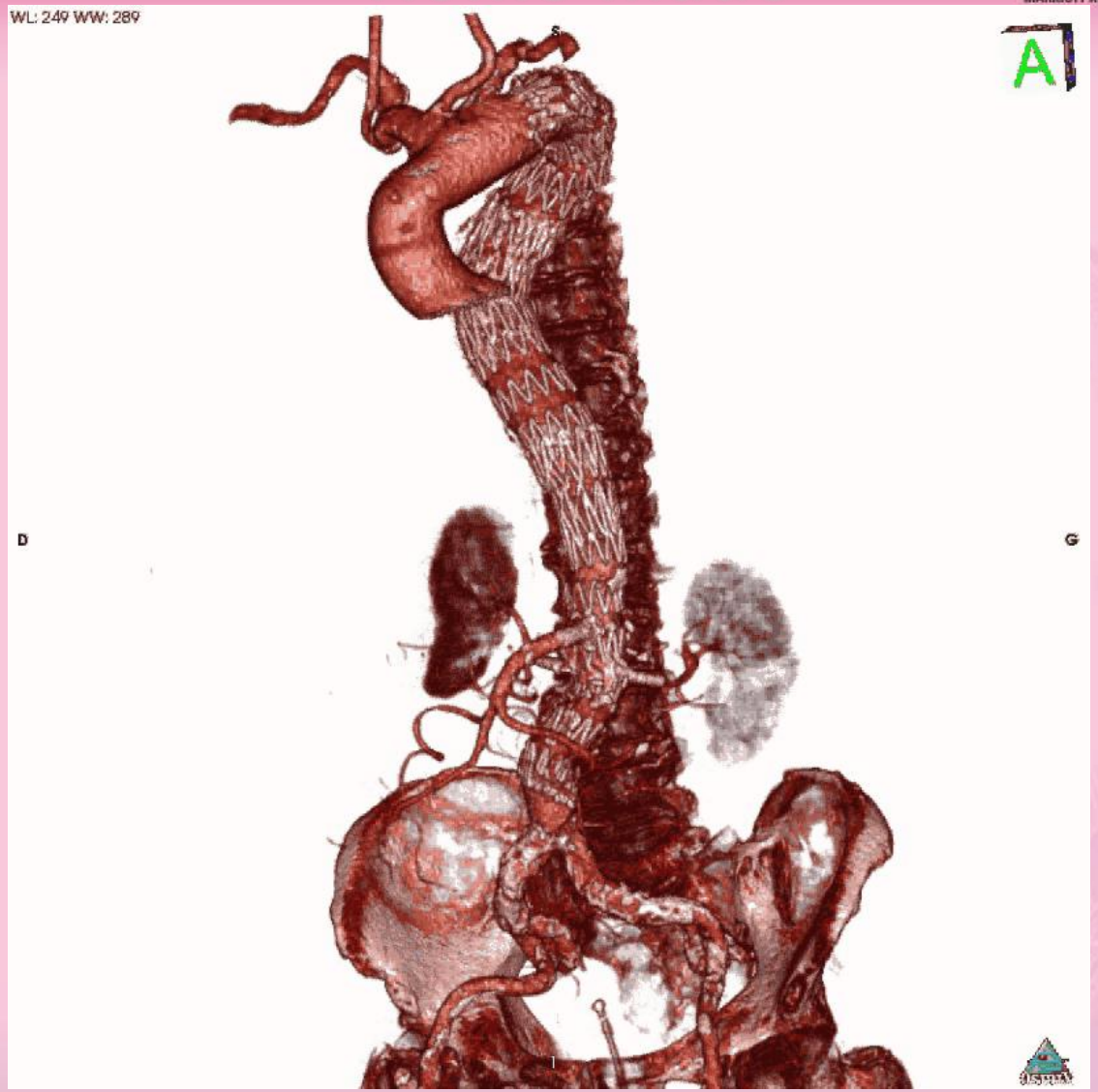
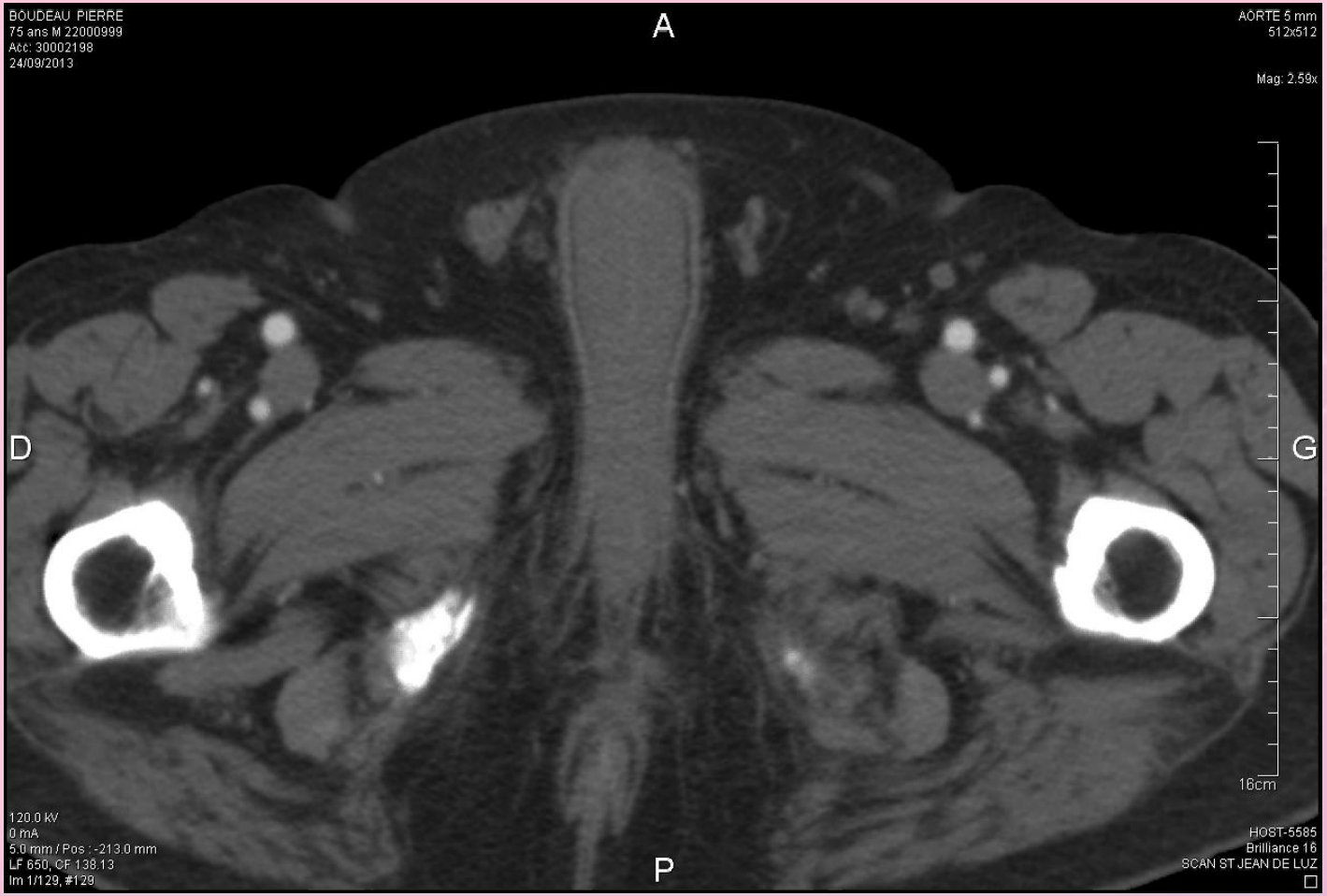
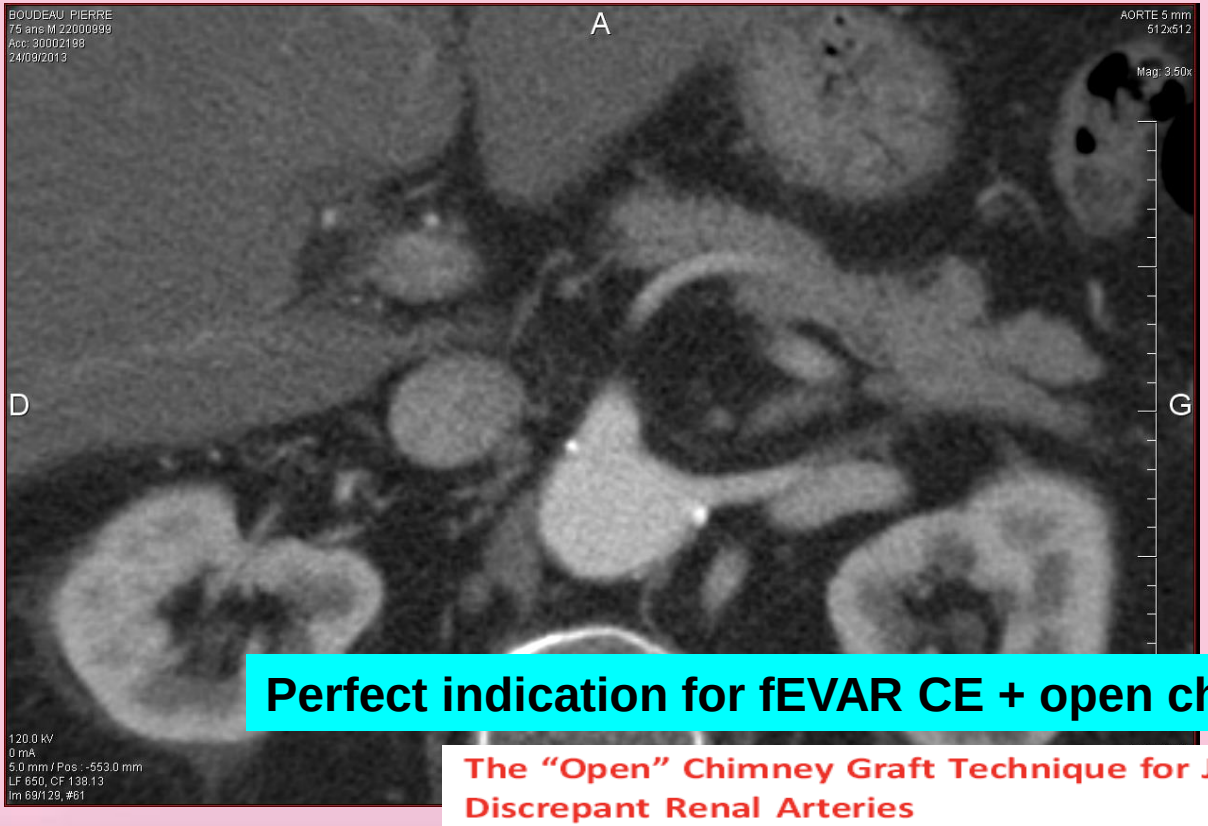


fEVAR
technical considerations



fEVAR technical considerations

- Patient not suitable for fEVAR CE



Perfect indication for fEVAR CE + open chimney

The "Open" Chimney Graft Technique for Juxtarenal Aortic Aneurysms with Discrepant Renal Arteries

E. Ducasse [a], S. Lepidi [a,b,*], C. Brochier [a], S. Deglise [c], X. Berard [a], D. Alberti [d], D. Midy [a]

[a] Vascular Surgery Unit, Pellegrin Hospitals, University of Bordeaux, Bordeaux, France
[b] Division of Vascular and Endovascular Surgery, Department of Cardiac, Thoracic and Vascular Sciences, University of Padova, Padova, Italy
[c] Centre Hospitalier Universitaire Vaudois, CHUV, University Hospital of Lausanne, Switzerland
[d] Ospedale Belcolle, Viterbo City Hospital, Viterbo, Italy

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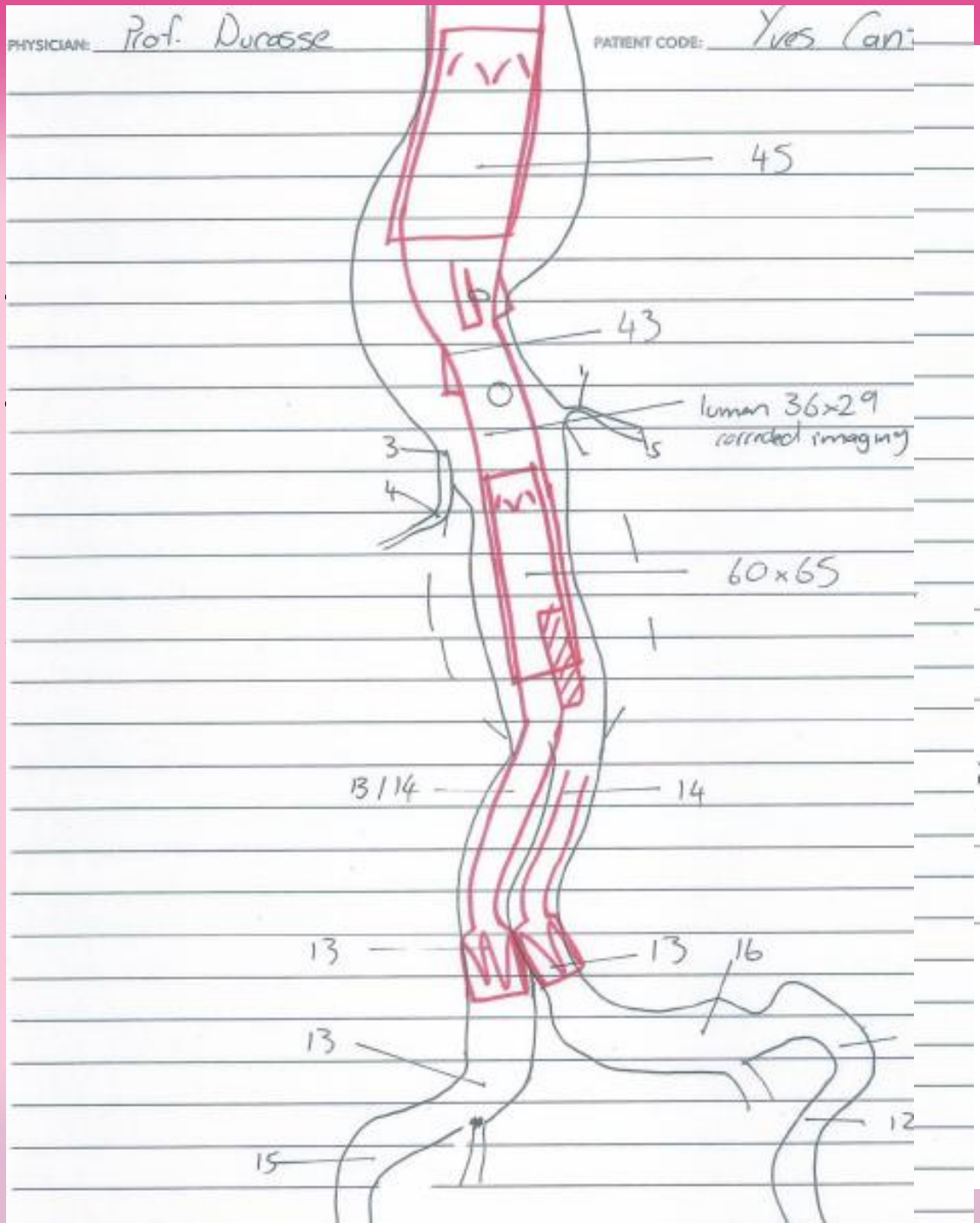
PHYSICIAN: Prof. Durosse
PATIENT CODE: Yves Can
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43
luman 36x29
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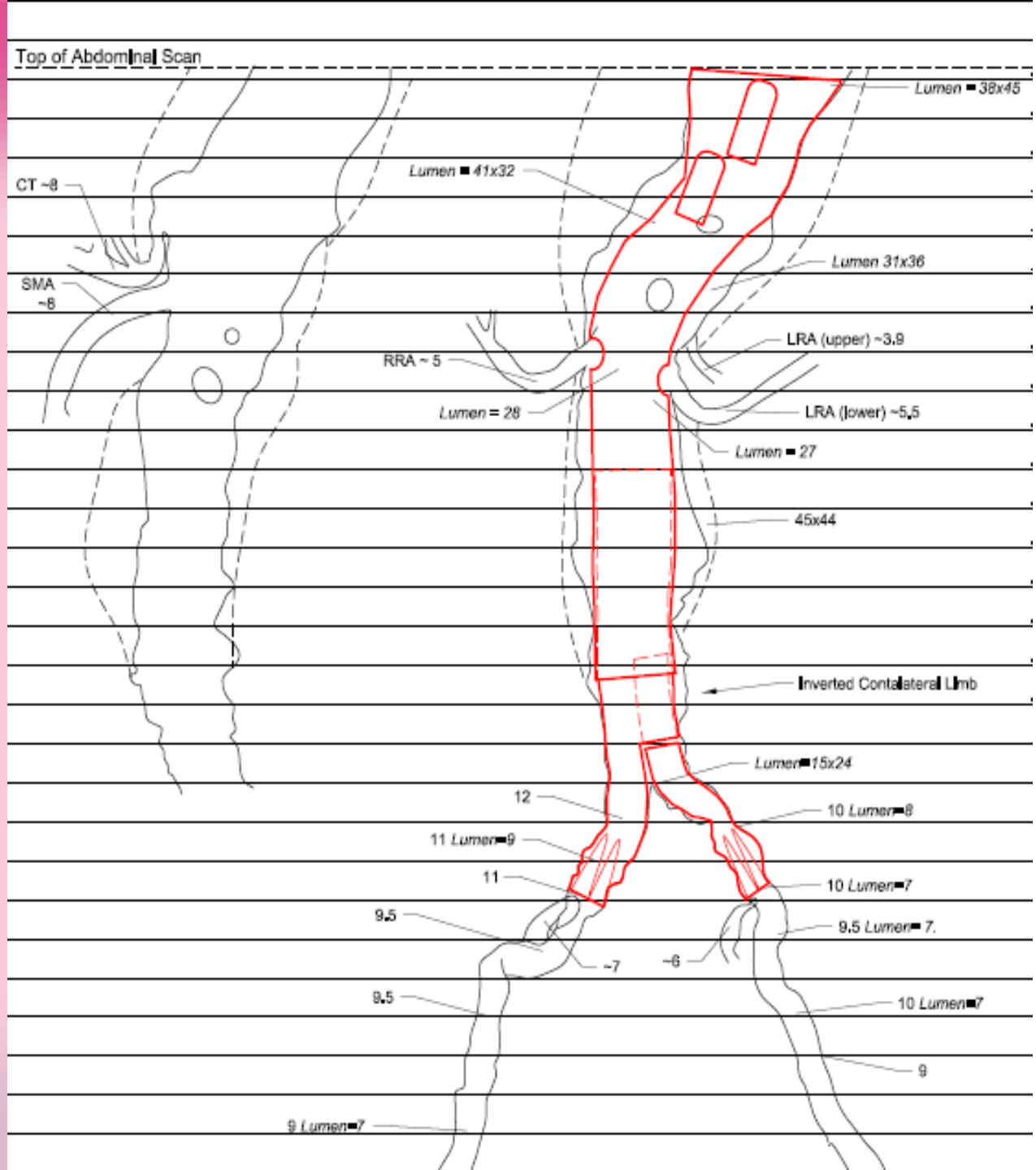
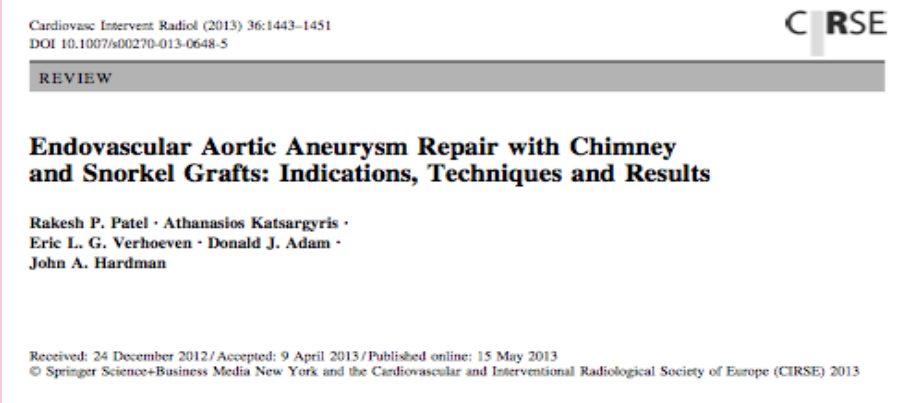
- r of IVD)


Top of Abdominal Scan
CT ~8
SMA ~8
RRA ~ 5
Lumen = 28
Lumen = 41x32
Lumen = 38x45
Lumen 31x36
LRA (upper) ~3.9
LRA (lower) ~5.5
Lumen = 27
45x44
Inverted Contalateral Limb
Lumen=15x24
12
11 Lumen=9
11
9.5
~7
9.5
9 Lumen=7
10 Lumen=8
10 Lumen=7
9.5 Lumen= 7.
~6
10 Lumen=7
9

Ch-EVAR



Cardiovasc Intervent Radiol (2013) 36:1443–1451
DOI 10.1007/s00270-013-0648-5

CIRSE

REVIEW

Endovascular Aortic Aneurysm Repair with Chimney and Snorkel Grafts: Indications, Techniques and Results

Rakesh P. Patel · Athanasios Katsargyris · Eric L. G. Verhoeven · Donald J. Adam · John A. Hardman

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Indication for CG :

-**Bail-out** procedure for accidentally overstented aortic branches

-Adjunct to enable EVAR and TEVAR for treatment of distal arch and juxtarenal anenrysm in **urgent and emergency setting**

-Alternative option patients **not suitable** for open repair or fenestrated endovascular repair

Contraindication : aortic dissection, aortic stenosis

Potential advantages of Ch-EVAR over F-EVAR

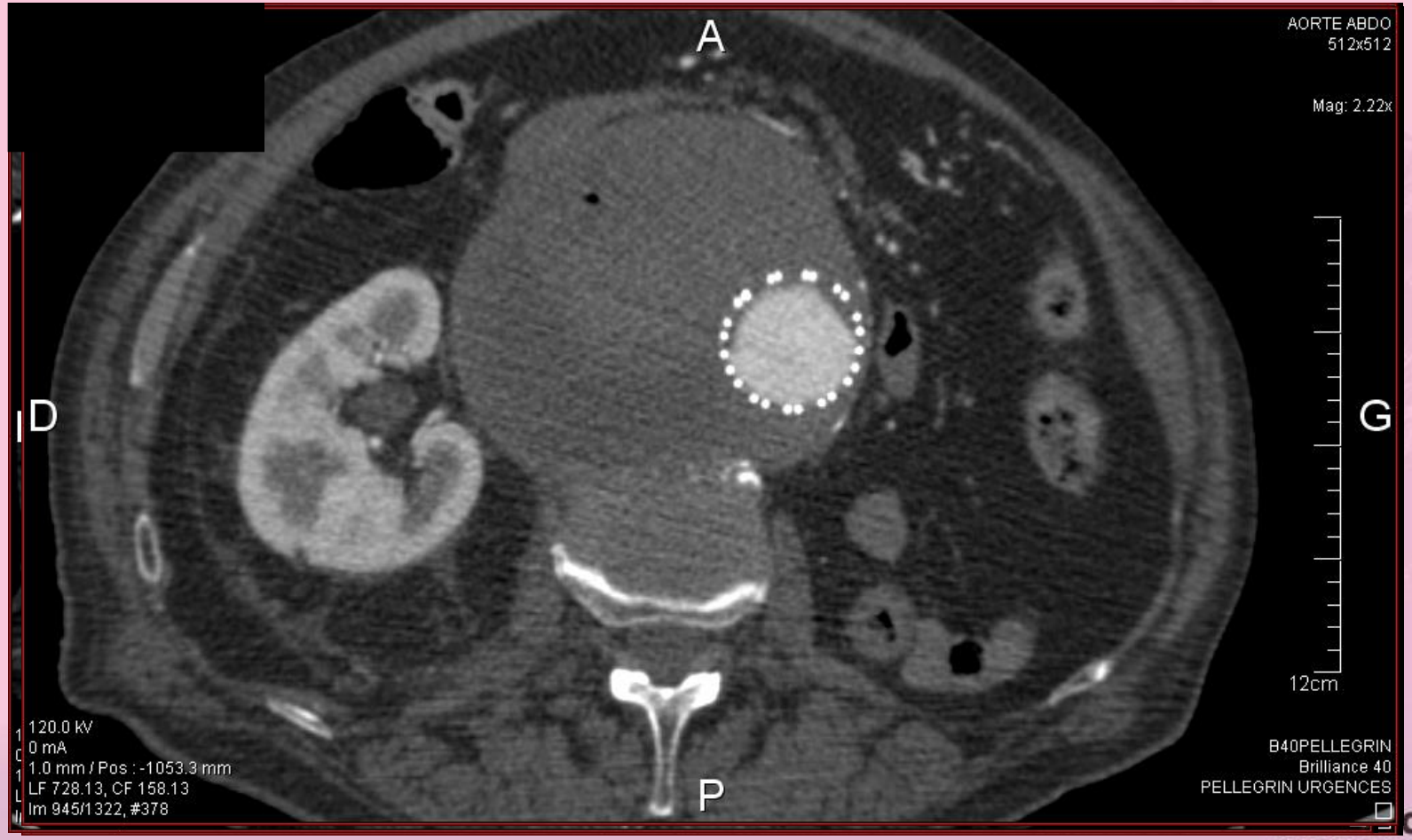
- Reduced complexity
- Wider availability in smaller centers
- Immediate treatment option in the acute setting
- Performed without previous device planning and customization
- Cheaper alternative

ch-EVAR

- In emergency : perfect indication
- Sizing less crucial
- Previous catheterism of targeted arteries before graft insertion/delivery
- But perfect building of the ch-EVAR
- Accesses with 3 or 4 chimney
- All possibilites
  - Ch-EVAR juxta-renal/lift technique (M lachat-JET 2013) snorkel/sandwich/aortic arch

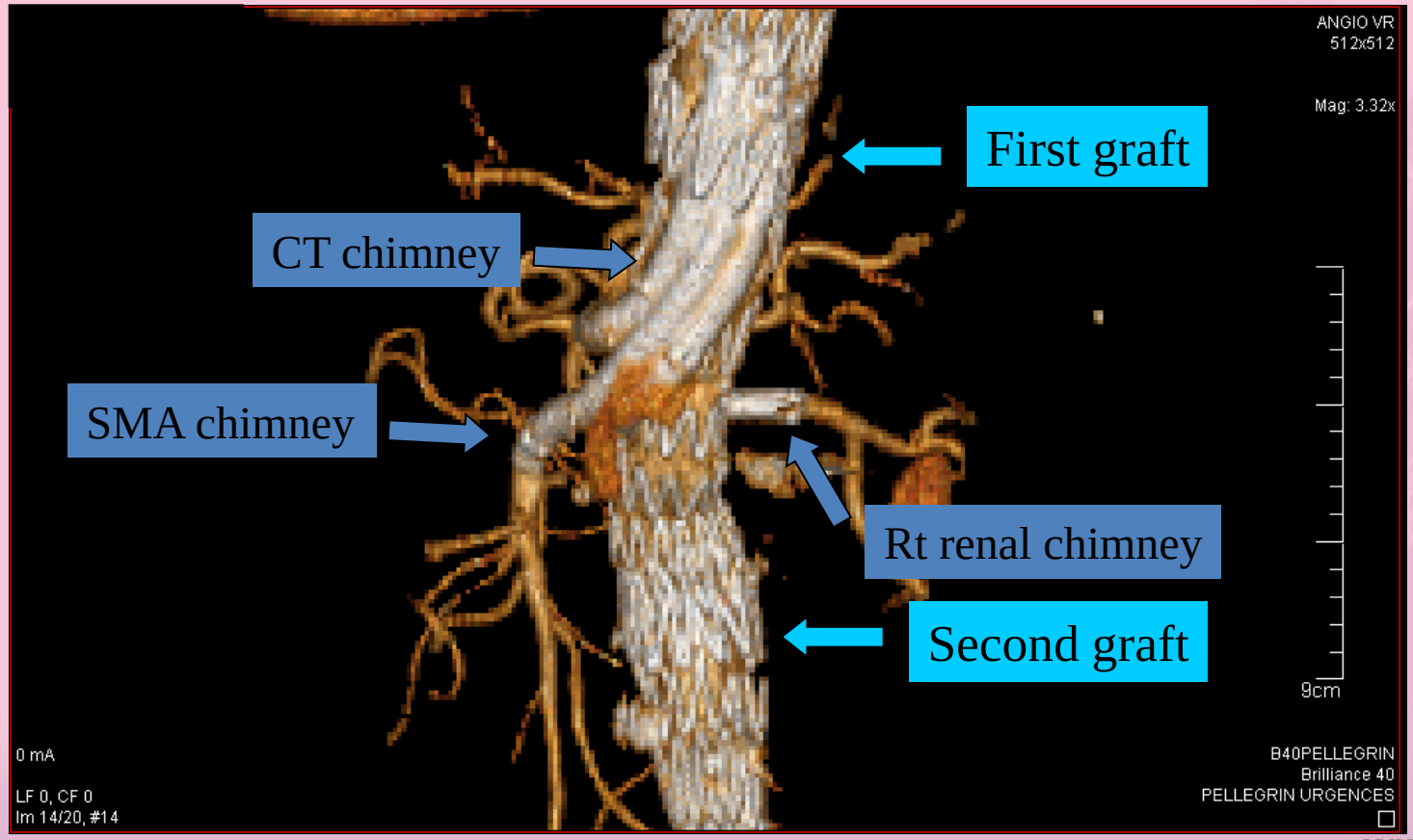
Ch-EVAR

- Patient 83 Y. ruptured false aneurysm…

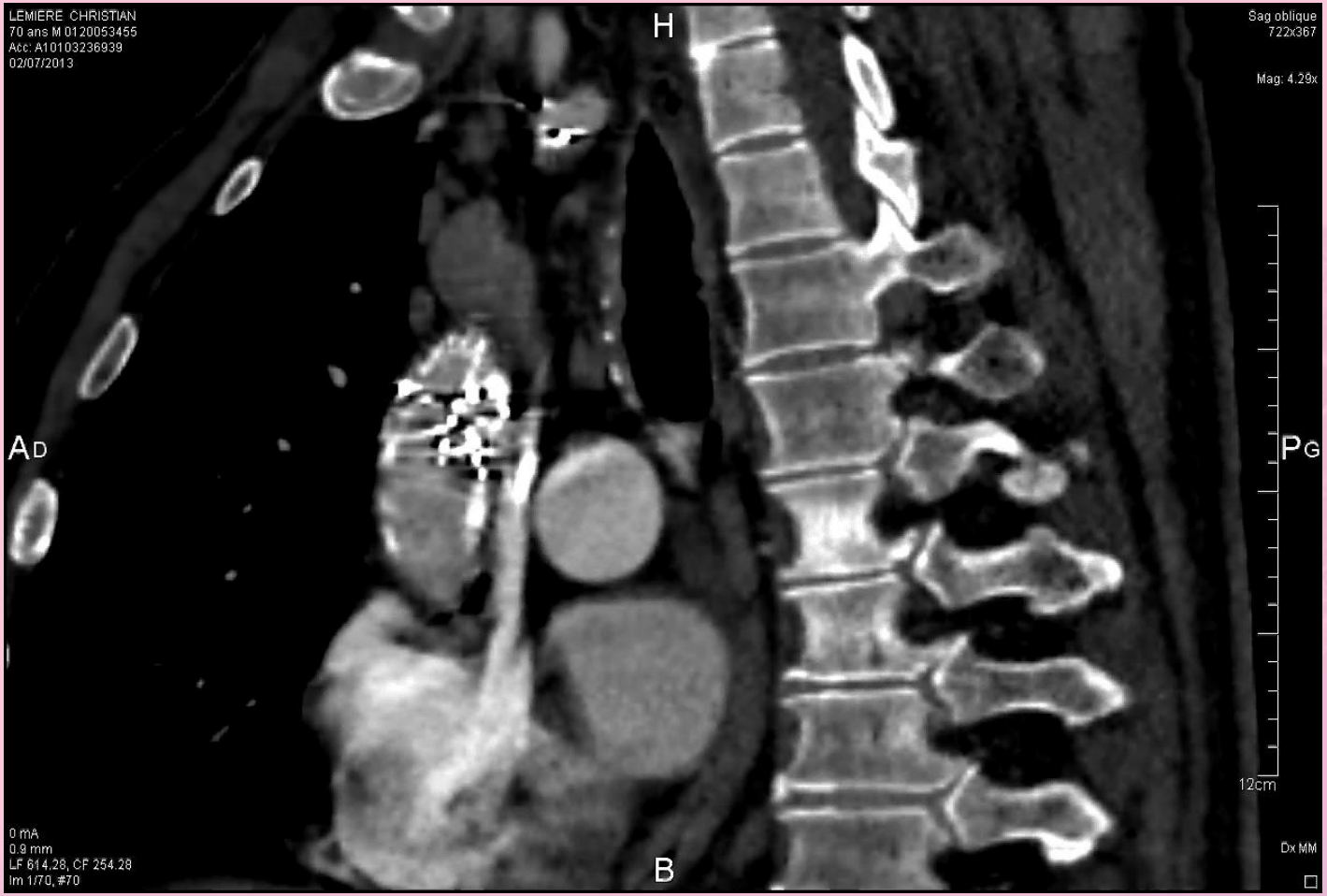


Ch-EVAR SANDWICH

Ch-EVAR SANDWICH



Ch-TEVAR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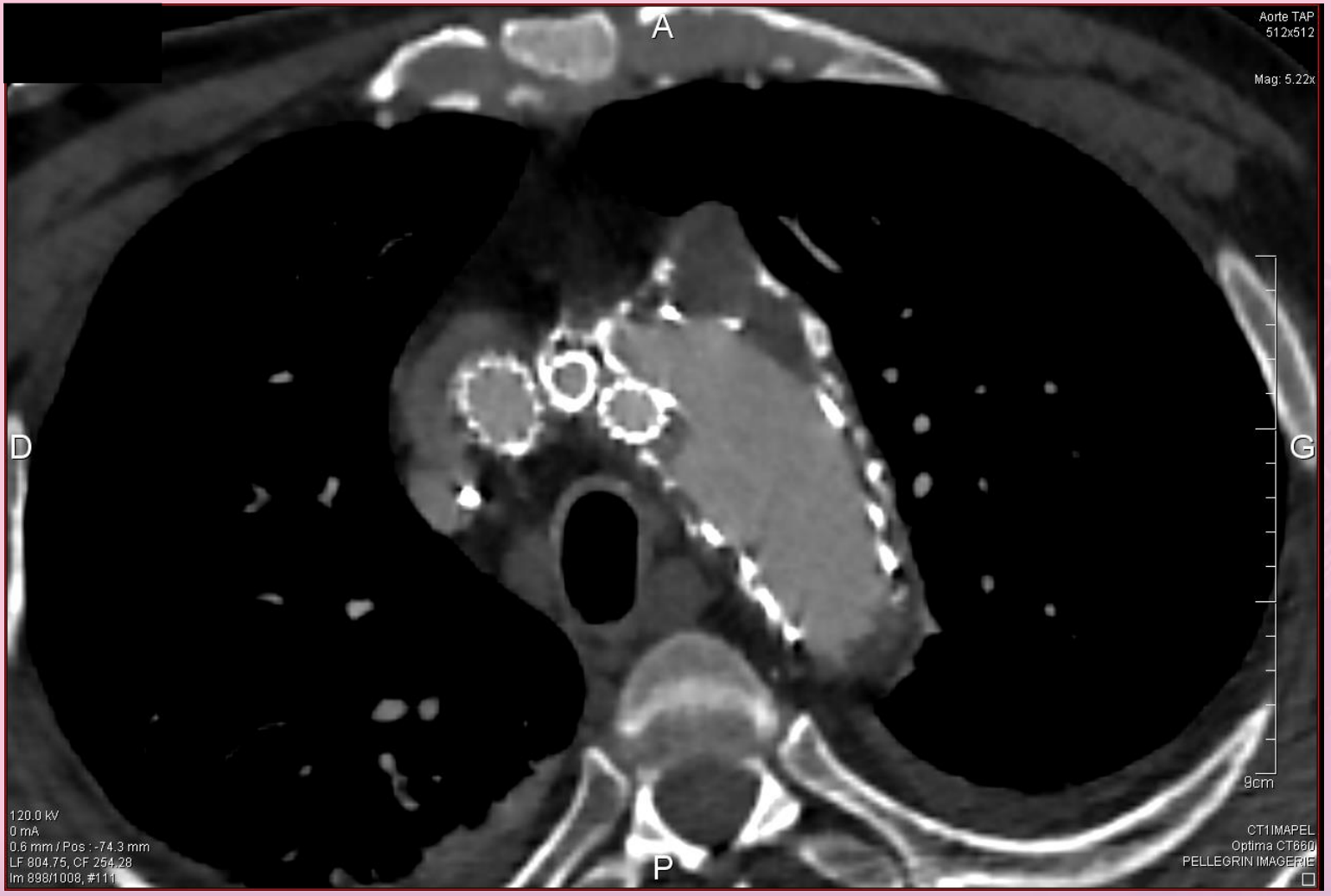
Ch-TEVAR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Im 898/1008, #111
CT1IMAPEL
Optima CT660
PELLEGRIN IMAGERIE

Article Citation:
Konstantinos P. Donas, Giovanni Torsello,Theodosios Bisdas,Nani Osada,Eva Schönefeld,Georgios A. Pitoulias, (*2012*) Early Outcomes for Fenestrated and Chimney Endografts in the Treatment of Pararenal Aortic Pathologies Are Not Significantly Different: A Systematic Review With Pooled Data Analysis. Journal of Endovascular Therapy: December 2012, Vol. 19, No. 6, pp. 723-728.

doi: http://dx.doi.org/10.1583/JEVT-12-3952MR.1

ENDOVASCULAR ANEURYSM REPAIR

Early Outcomes for Fenestrated and Chimney Endografts in the Treatment of Pararenal Aortic Pathologies Are Not Significantly Different: A Systematic Review With Pooled Data Analysis

Konstantinos P. Donas , MD, PhD[1]; Giovanni Torsello , MD, PhD[1]; Theodosios Bisdas , MD, PhD[1]; Nani Osada , PhD[2]; Eva Schönefeld , MD, PhD[1]; and Georgios A. Pitoulias , MD, PhD[1]

[1]Department of Vascular Surgery, St. Franziskus Hospital and Clinic for Vascular and Endovascular Surgery, Münster University Hospital, Münster, Germany.
[2]Institute for Biomathematics, Münster University Hospital, Münster, Germany.

To compare short-term outcomes between fenestrated and chimney endografts for pararenal aortic anenrysm.

17 articles

5 articles leading 123 patients with ch-EVAR

12 articles leading 660 patients with f-EVAR

Ch-EVAR Vs f-EVAR

	Ch-EVAR	F-EVAR	p
30-day mortality	0,58%	1,17%	0,645
renal impairment	12,43%	9,67%	0,628
dialysis	0,57%	1,33%	0,567
type Ia endoleak	1,93%	2,06%	0,939
type II endoleak	2,16%	6,88%	0,352
type III endoleak	0%	0,32%	0,079

No statistically significant differences found between the two endovascular approaches.

Ch-EVAR Vs f-EVAR Vs Open Repair

The role of open and endovascular treatment with fenestrated and chimney endografts for patients with juxtarenal aortic aneurysms

Konstantinos P. Donas, MD, PhD,[a] Markus Eisenack, MS,[a] Giuseppe Panuccio, MD, PhD,[a] Martin Austermann, MD, PhD,[a] Nani Osada, PhD,[b] and Giovanni Torsello, MD, PhD,[a] *Münster, Germany*

Conclusions: Endovascular treatment of JAAA is a safe alternative for the short-term management of JAAA. (J Vasc Surg 2012;56:285-90.)

- Ch-EVAR (30) Vs f-EVAR (29) Vs OR (31)
- 3 years study (january 2008 to december 2010)

Ch-EVAR Vs f-EVAR Vs Open Repair

Table I. Demographics and comorbidities in patients with JAAAs treated by open or endovascular repair

	Ch-EVAR	*f-EVAR*	*OR*	P
Age, years	74.5 ± 7.3	73.7 ± 6.1	71.2 ± 7.8	2.2
Men	27/30	29/29	27/31	1.34
Size of the aneurysm, cm	6.2	6.5	6.0	2.4
Creatinine (mg/dL, mean ± SD)	1.2 ± 0.8	1.2 ± 0.2	1.1 ± 1.4	2.1
eGFR (mL/min/1.73 m^2, mean ± SD)	64.5 ± 27	63.5 ± 29	69 ± 99	1.1
Comorbidities				
Cardiac	22	24	9	.45
Renal (creatinine >100 mg/mL)	7	5	2	.56
Respiratory	10	11	6	.55
Previous aortic intervention	11	8	2	.34
Previous aortocoronary bypass or intervention	10	12	2	.03
Previous myocardial infarction	9	7	0	.36

ch-EVAR, Chimney endovascular abdominal aortic repair; *f-EVAR*, fenestrated endovascular abdominal aortic repair; *JAAAs*, juxtarenal aortic aneurysms; *OR*, open repair.

Ch-EVAR Vs f-EVAR Vs Open Repair

Table II. Procedure details and 30-day outcomes for patients with JAAAs treated by open or endovascular repair

	Ch-EVAR	*f-EVAR*	*OR*	P
Target vessel preservation	97.4%	97.7%	—	.56
Operation duration, minutes	89 ± 21	290 ± 122	—	.04
Contrast medium (mL)	112 ± 23	156 ± 56	—	.23
Fluoroscopic time, minutes	44.8 ± 13.2	54.3 ± 12.2	—	.34
Renal artery chimney	35/38			
Bilateral	5			
Right	19			
Left	16			
SMA chimney	3			
Types of chimney stent				
- Covered balloon expandable (Advanta)	38/38			
f-EVAR bridging stent				
- Covered balloon expandable (Advanta)		32/44		
- Bare balloon expandable (Palmaz)		12/44		
Endoleak				
Type I	0	0		
Type II	2	1		
Mortality	0	0	2	.023

ch-EVAR, Chimney endovascular abdominal aortic repair; *f-EVAR*, fenestrated endovascular abdominal aortic repair; *JAAAs*, juxtarenal aortic aneurysms; *OR*, open repair; *SMA*, superior mesenteric artery.

Conclusion

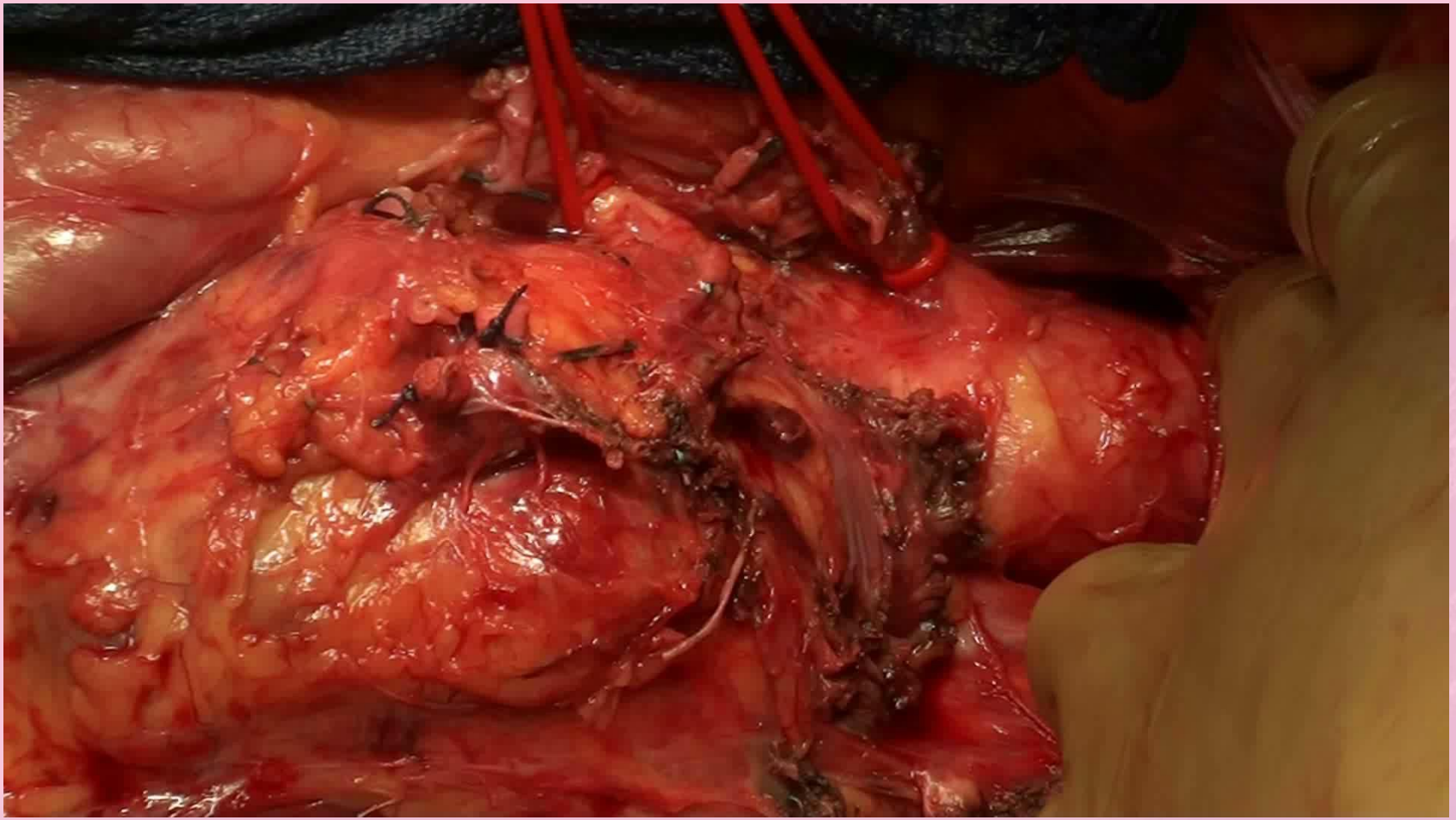
- F-EVAR, branched graft and ch-EVAR are
  - Efficient
  - Safe
  - Adapted to the conditions
    - Anatomy
    - emergency
- Adapt the technique to the anatomical conditions
  - Accesses
  - Diameters (IVD and targeted arteries)
  - Angulation, stenosis

Conclusion

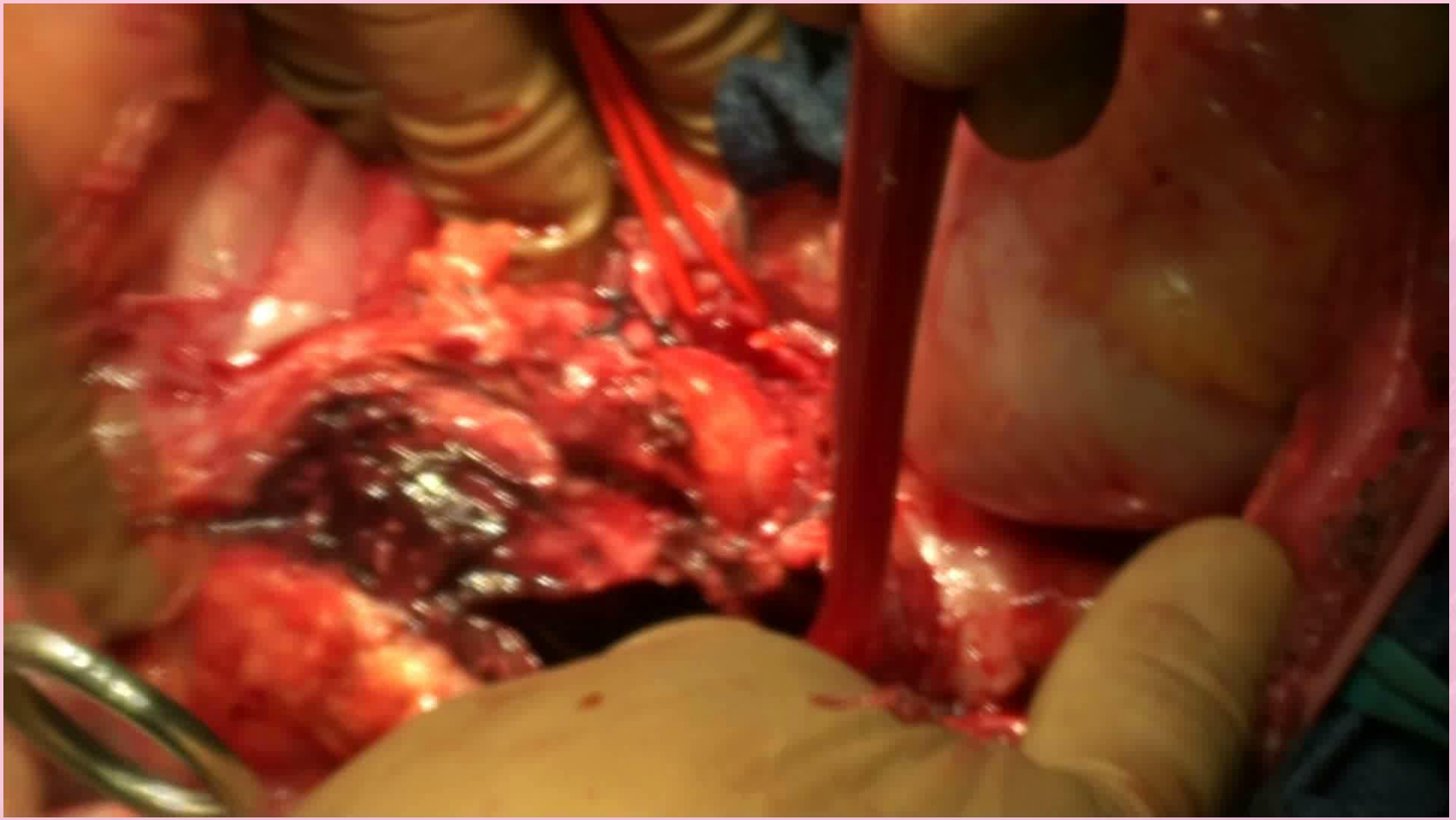
- F-EVAR and Branched are CE or CMD
- Ch-EVAR are off-label
- At least one ultimate other option: surgery…

Conclusion

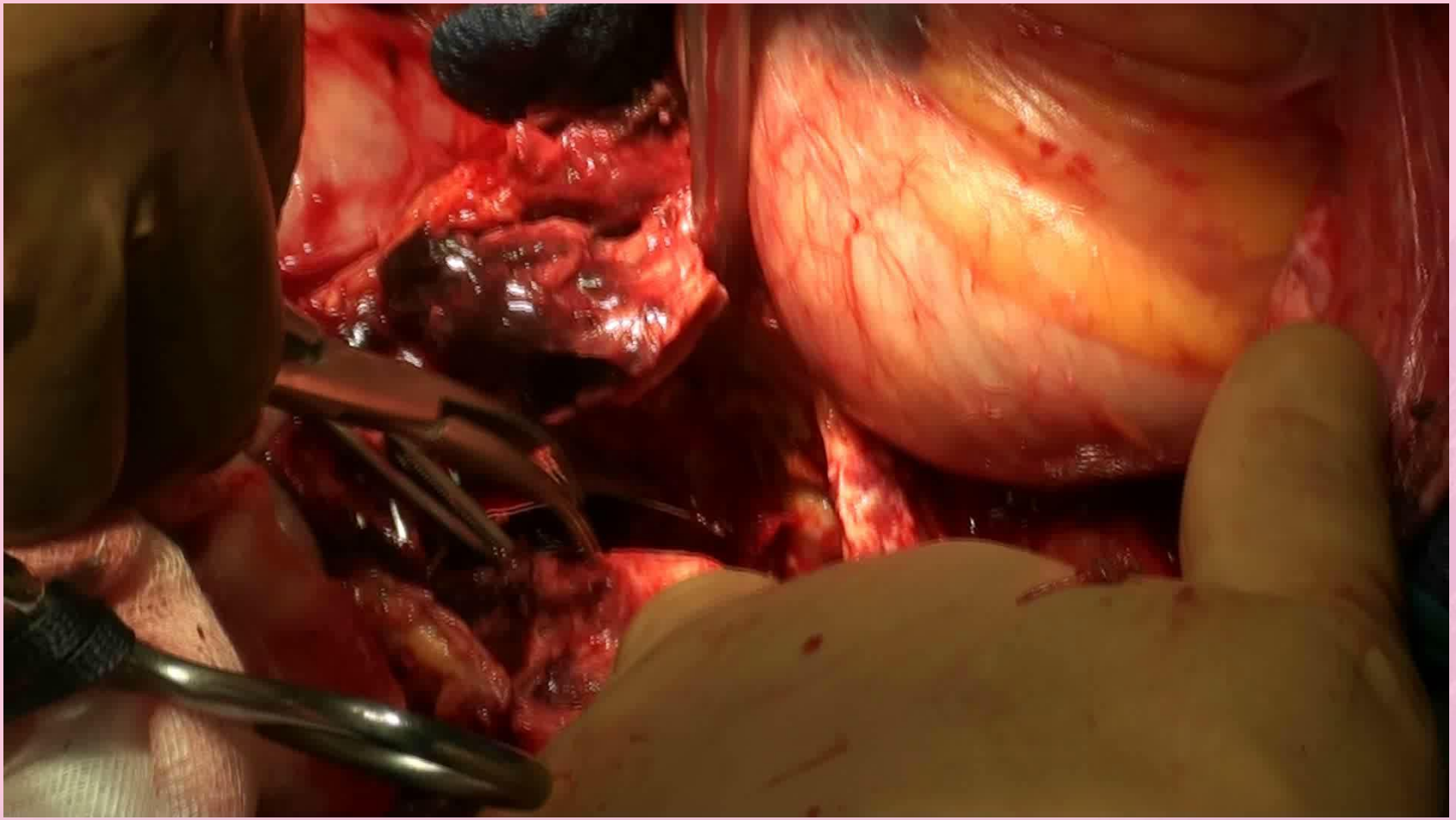
Conclusion



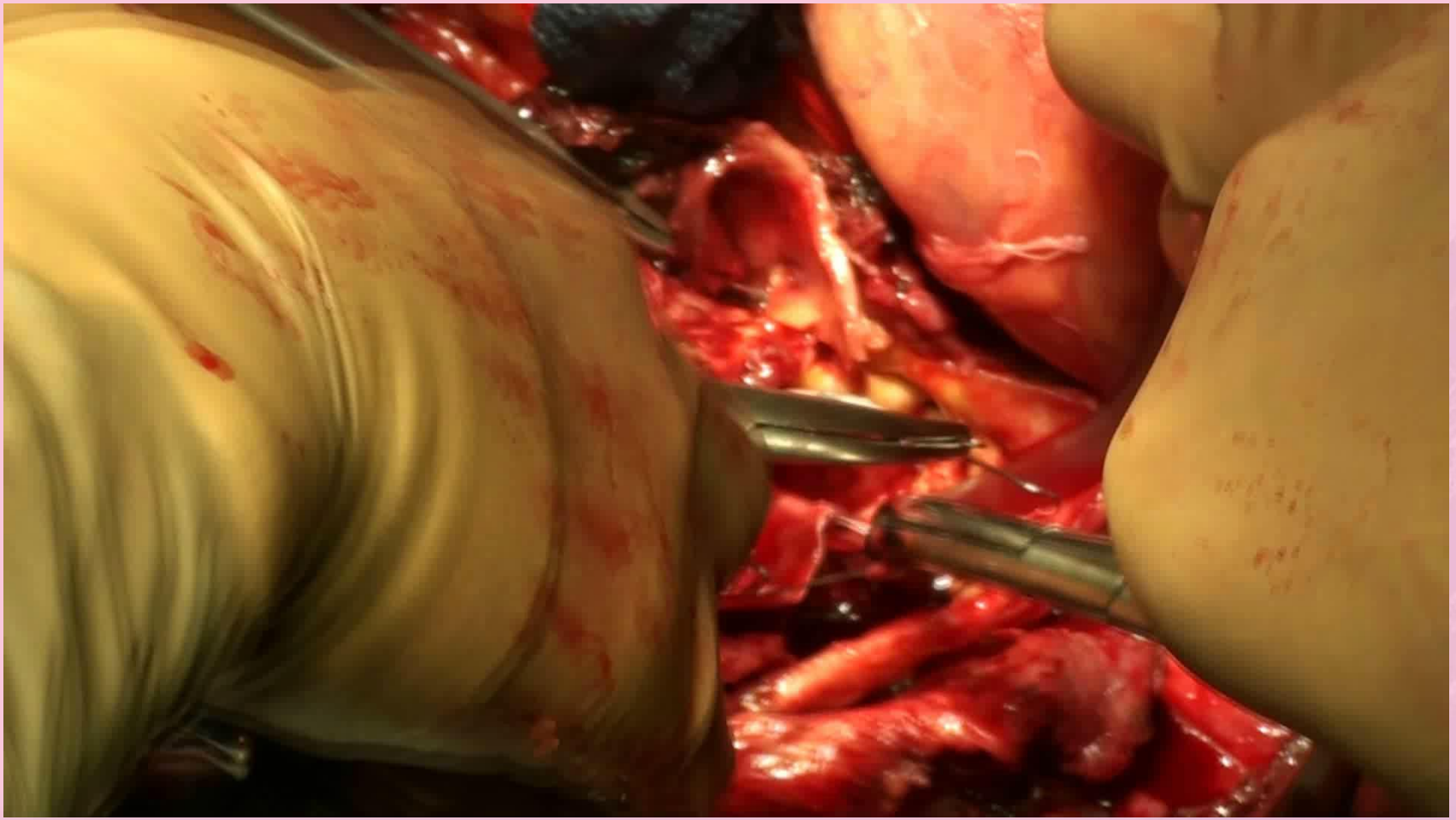
Conclusion



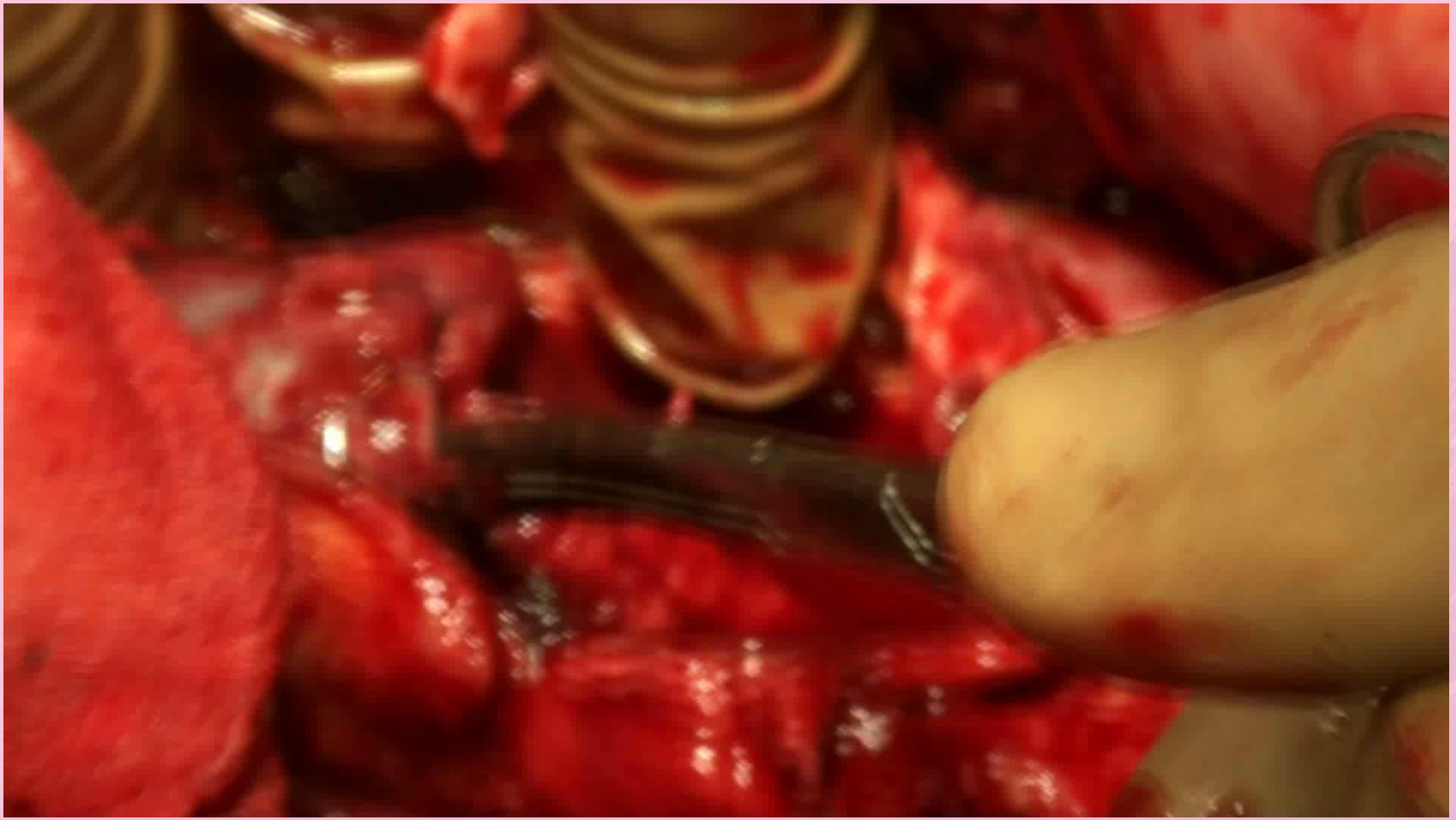
Conclusion



Conclusion



Conclusion



Conclusion

- In sumary:

Do what you want, we can retreive all….