
MEET 2015
MULTIDISCIPLINARY EUROPEAN
ENDOVASCULAR THERAPY
BUILDING
ENDOVASCULAR
SYNERGIES
OFF THE SHELF SOLUTION:
SELECTION BASED ON PLANNING
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San Filippo Neri Hospital
Roma Italy

Disclosure

Speaker name:

.....NICOLA MANGIALARDI.....

I have the following potential conflicts of interest to report:

- ■ Consulting GORE, CORDIS, TRIVASCULAR
- □ Employment in industry
- □ Shareholder in a healthcare company
- □ Owner of a healthcare company
- □ Other(s)

- □ I do not have any potential conflict of interest

Chimney Technique for Aortic Arch Pathologies:
An 11-Year Single-Center Experience

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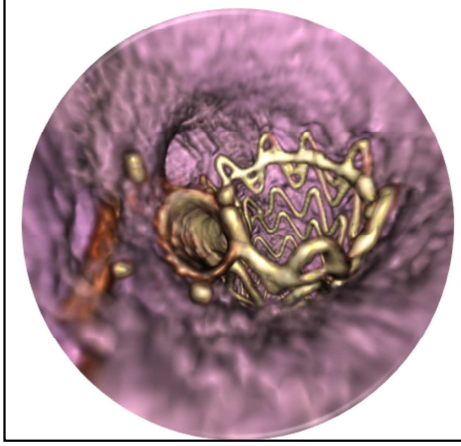
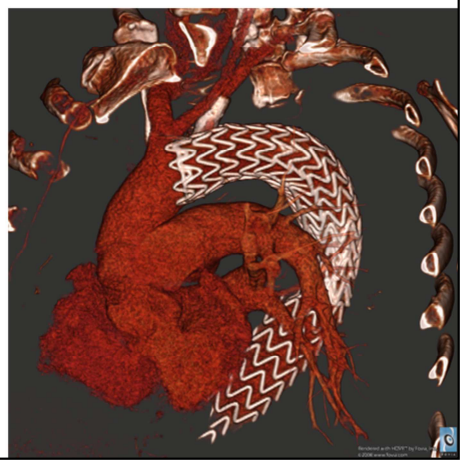
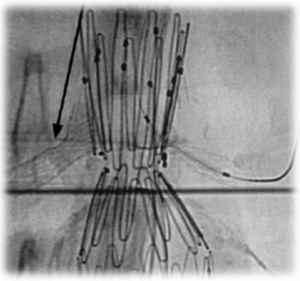
Department of Vascular Surgery, San Filippo Neri Hospital, Rome, Italy.

J Endovasc Ther. 2014;21:312–323

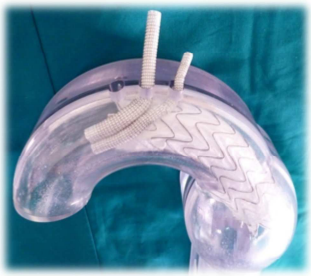




RECENTLY WE PUBLISHED OUR EXPERIENCE ON CHIMNEY TECHINQUE THAT I CONSIDER THE QUEEN OF OTS SOLUTIONS



RK Greenberg JVS 2003

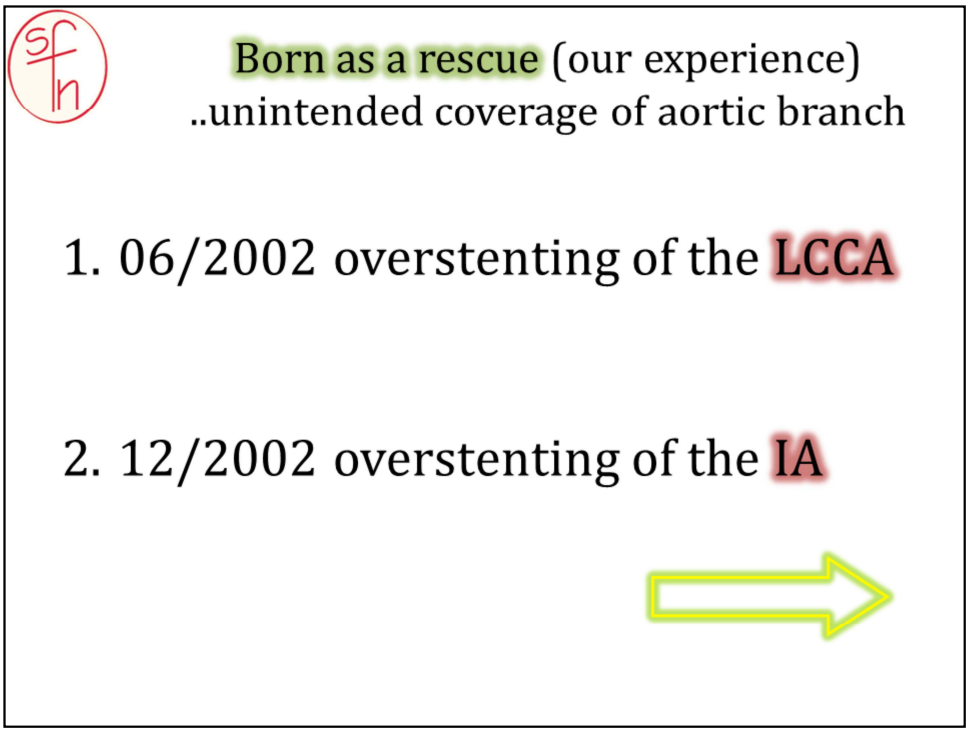


T Larzon EJVES 2005

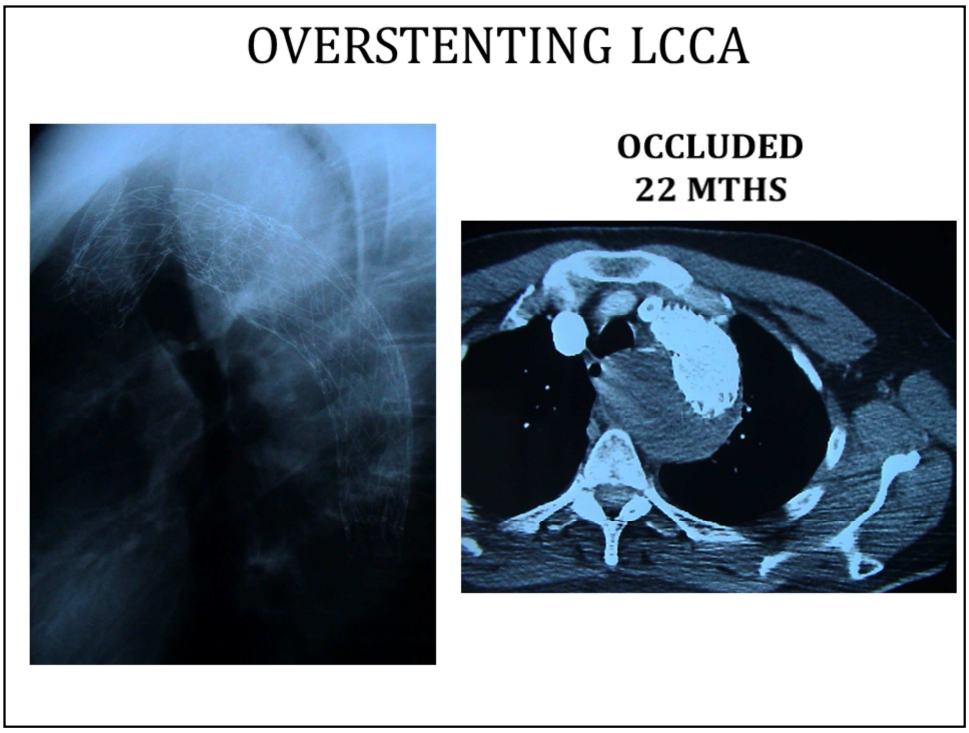
Born as a rescue CHIMNEY/PERISCOPE/ DOUBLE BARREL:

preservation of overstented vessels with bare or covered stent parallel to the aortic graft

BECAUSE IT WAS FIRSTLY DESCRIBED AS A RESCUE FOR UNVULONTARY COVERAGE OF SUPRAORTIC VESSELS

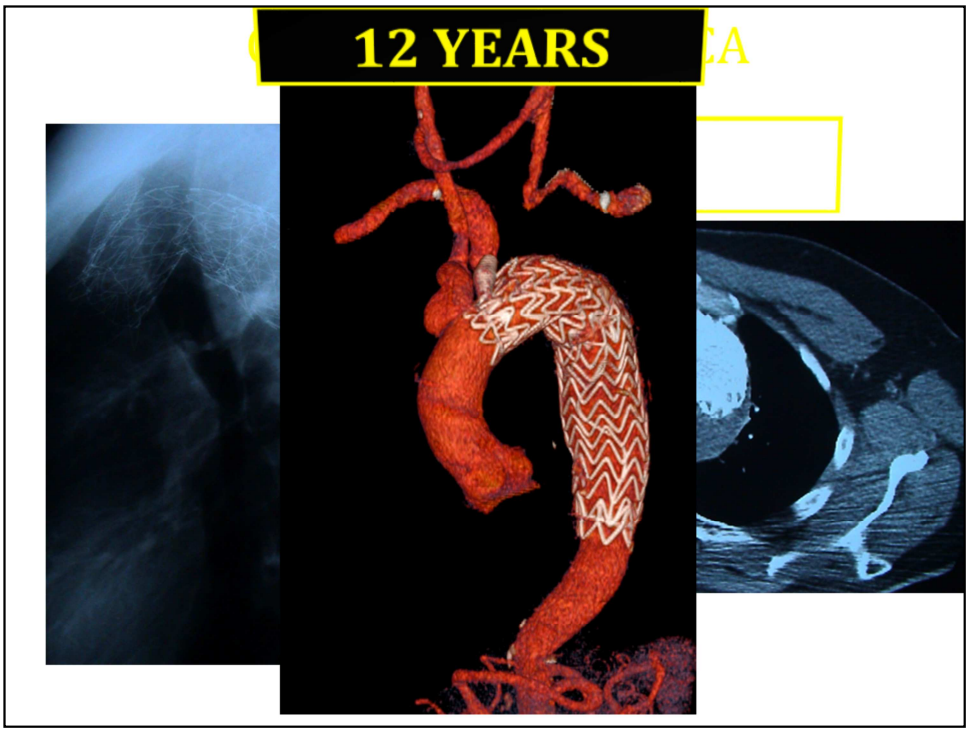


AS WELL AS IN OUR EXPERIENCE WITH 2 RESCUE CASES

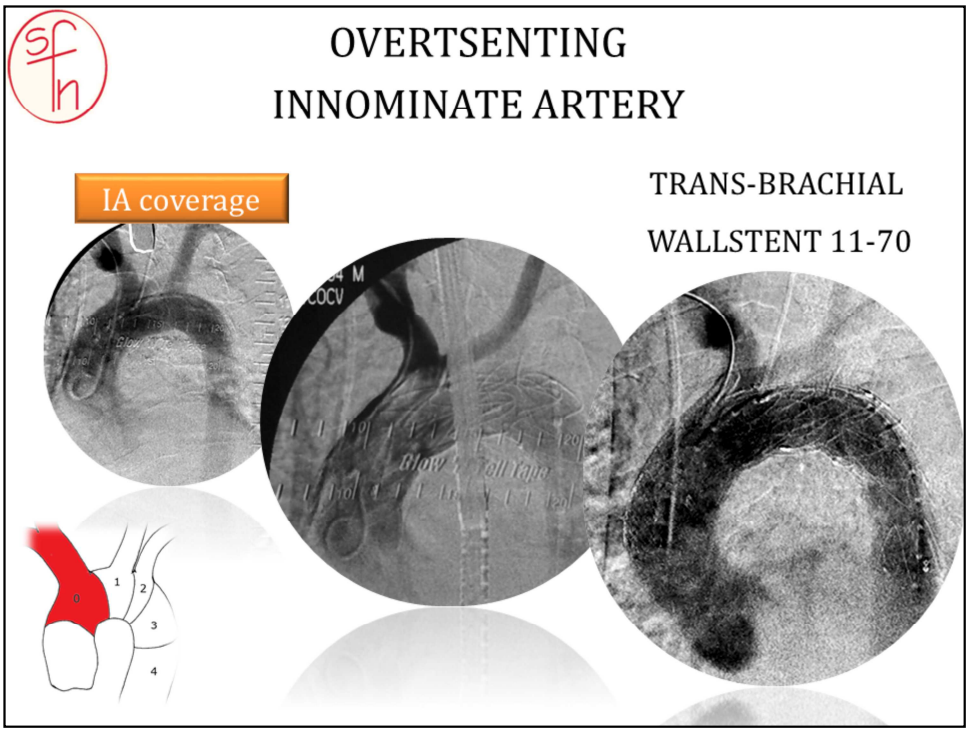


THE ONE FOR AN A LCCA OVERSTENTING ,

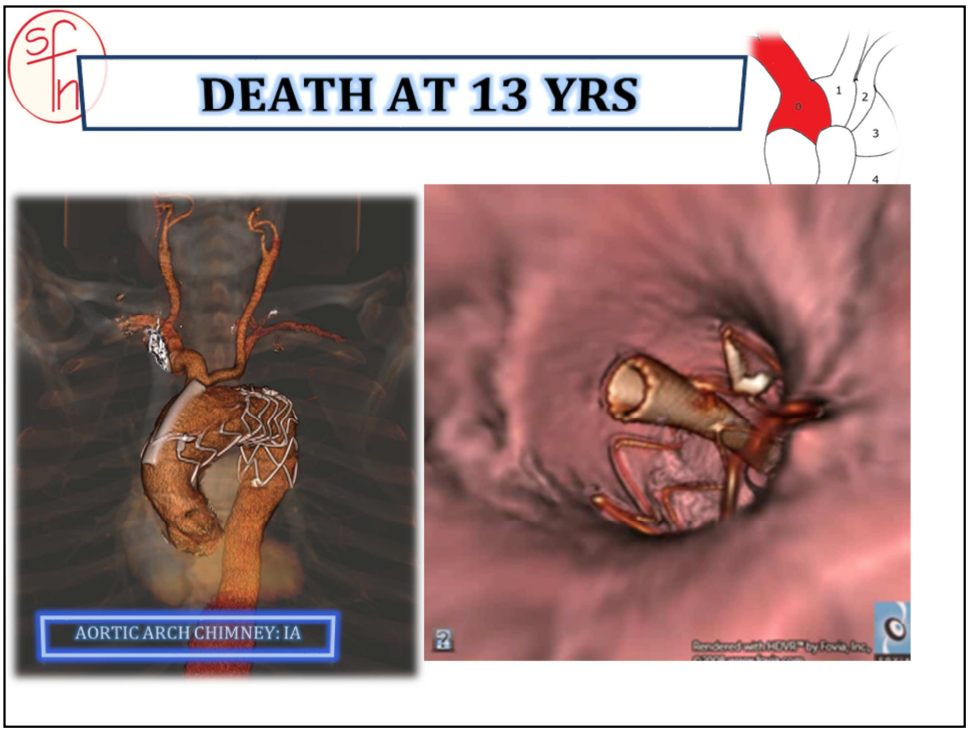
THE STENT WAS PROBABLY TOO SHORT AND ASYMPTOMATICALLY OCCLUDED AFTER 22 MONTHS



AND WAS RESCUED WITH A CAROTID-CAROTID BYPASS

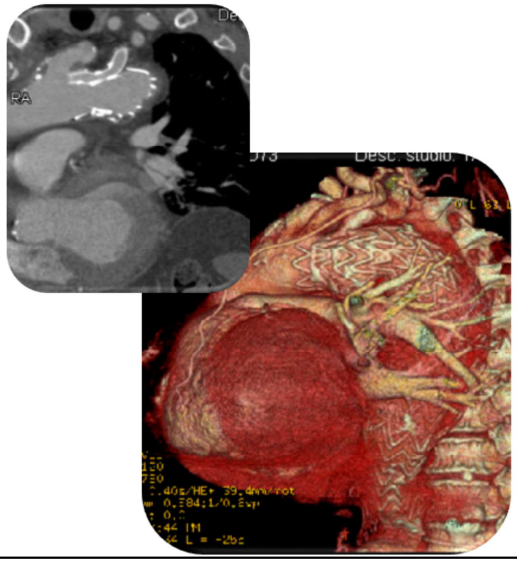


THIS IS THE SECOND CASE, HERE A BARE STENT WAS USED TO RESTORE PERFUSION AFTER AN ACCIDENTAL COVERAGE OF THE INNOMINATE ARTERY



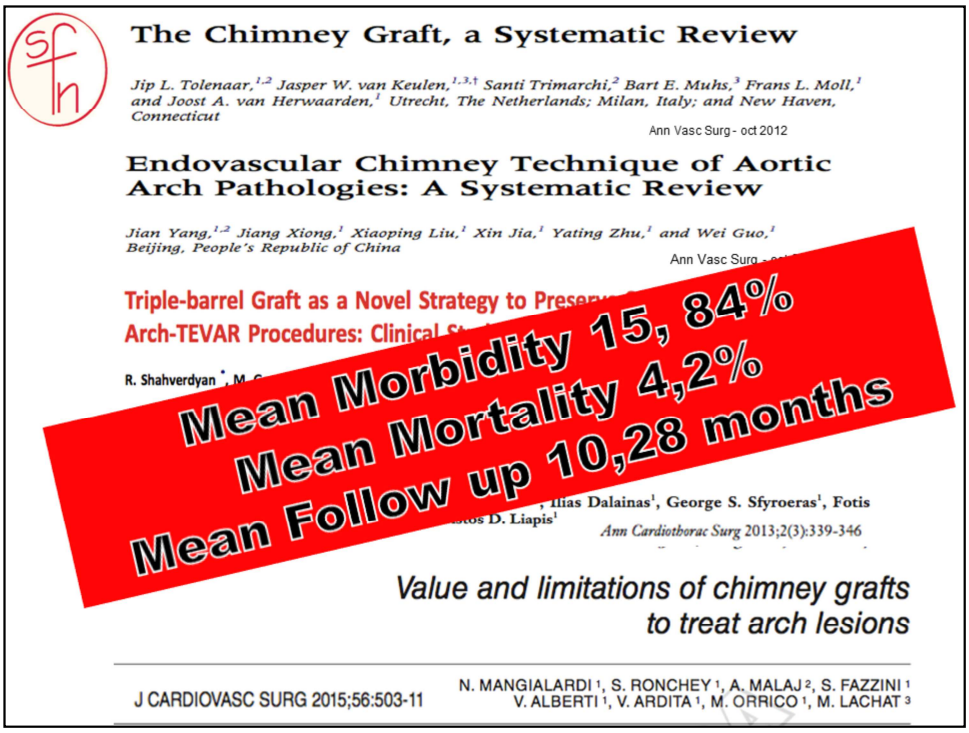
THE PATIENT DIED FOR PULMONARY COMPLICATIONS WITH HIS CHIMNEY STILL PATENT

BETWEEN 2002 & 2008
RESCUE



LSA	1
LSA+LCCA	1
LCCA	1

IN THE SUBSEQUENT YEARS WE TREATED ALWAYS FOR RESCUE SPORADICAL CASES



WITH GOOD RESULTS CONFIRMED BY ONGOING LITERATURE

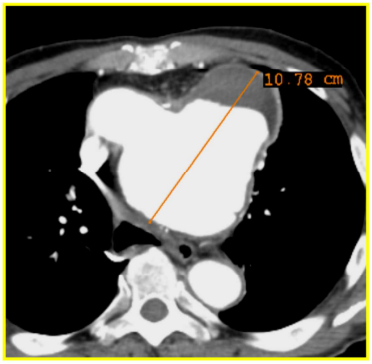
2008 PLANNED

INNOMINATE ARTERY CHIMNEY

•81 YRS – 108 mm ATA

•COPD (O2 Dep)- CAD - HTA

•UNFIT FOR TOT DEBRANCH/



TECHNIQUE

•RETROPHARINGEAL HEMIARCH DEBRANCHNG
> CUT-DOWN
•R/t FEMORAL
•R/t BRACHIAL

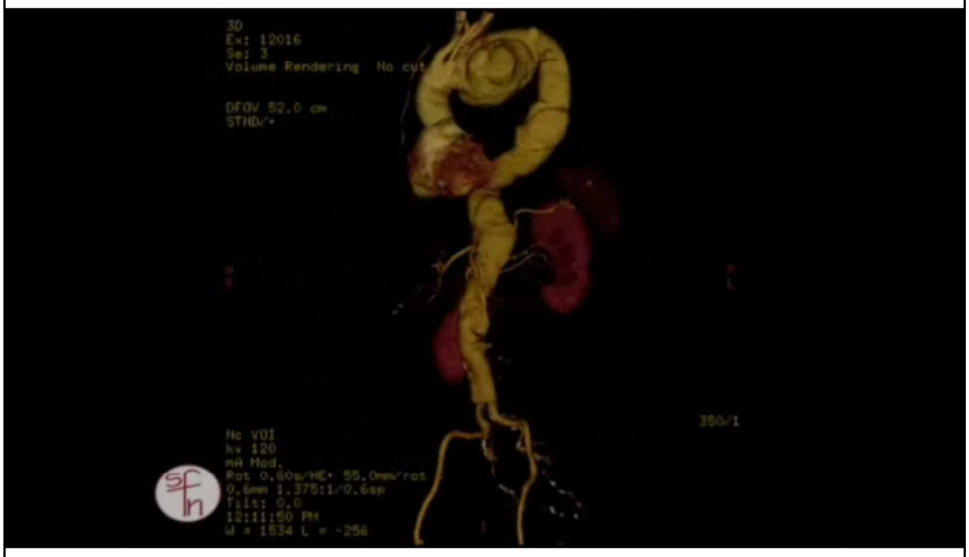
MATERIALS

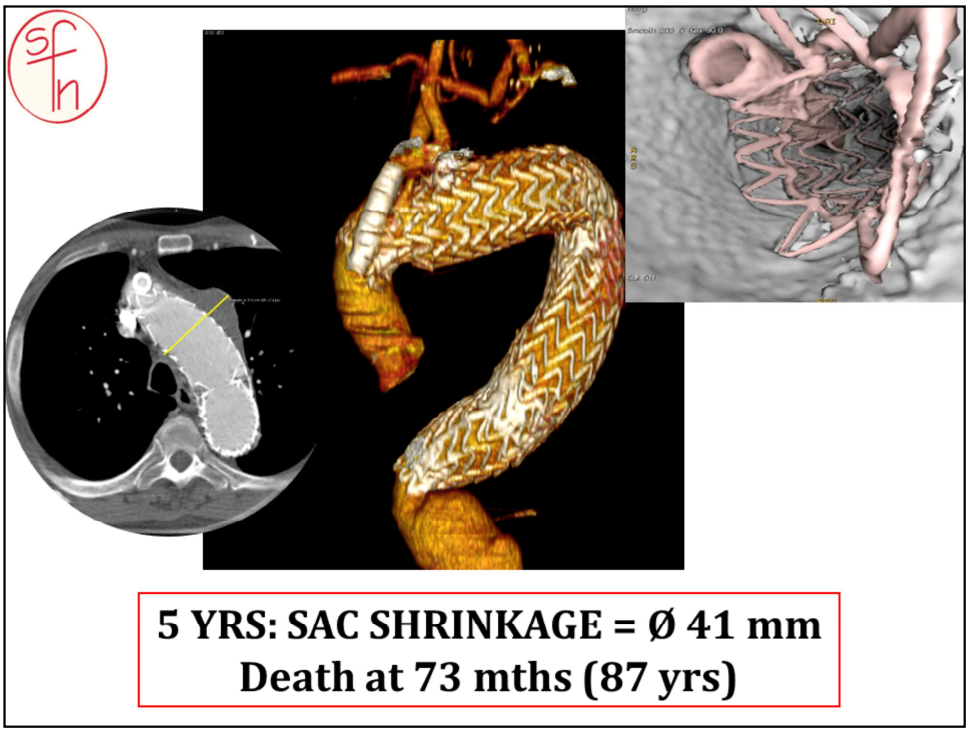
•GORE TAG 40 (20+15)

•GORE HEMOBAHN 11 - 50

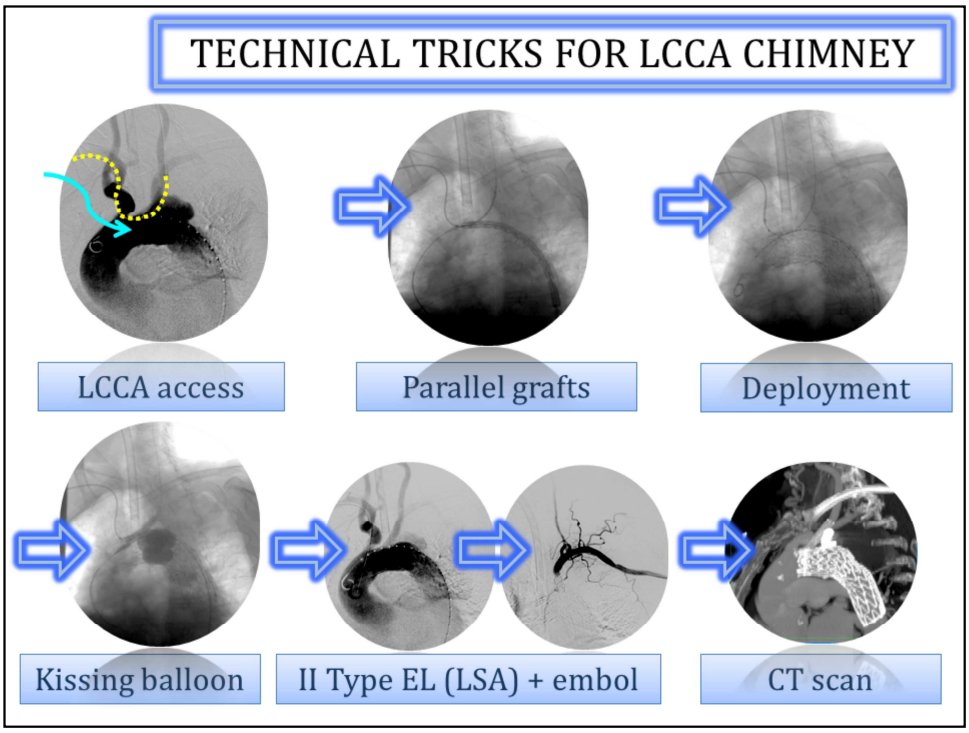
•WALLSTENT 12 - 40

THIS IS WHY IN 2008 WE PLANNED A CHIMNEY STRATEGY IN THIS HIGH RISK PATIENT WITH A HUGE, SYMPTOMATIC ANEURYSM TURNED DOWN FROM ANY OTHER OPTION


3D
Ex: 12016
Se: 3
Volume Rendering No cut
DFOV 52.0 cm
STHD/+
No VOI
kv 120
mA Mod.
Rot 0.60s/HE+ 55.0mm/rot
0.6mm 1.375:1/0.6sp
Tilt: 0.0
12:11:50 PM
W = 1634 L = -256
350/1

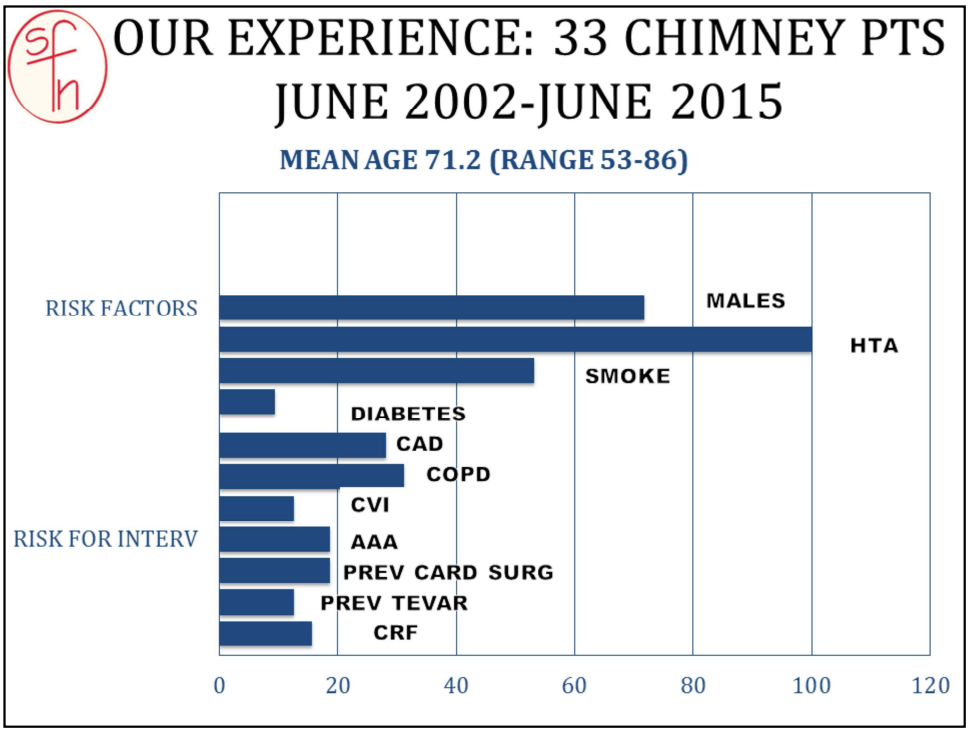


AND YOU CAN SEE WE OBTAINED A DRAMATIC SHRINKAGE OF 5 CM DURING FOLLOW UP



IN SOME CASES TO AVOID CUTDOWN FOR LEFT C CAROTID CHIMNEY WE FOUND USEFUL THE INSERTION OF THE CHIMNEY GRAFT FROM THE RIGHT BRACHIAL ARTERY

THE CANNULATION OF THE LCCA FROM A RIGHT BRACHIAL ACCESS TO INSERT THE PARALLELL GRAFT



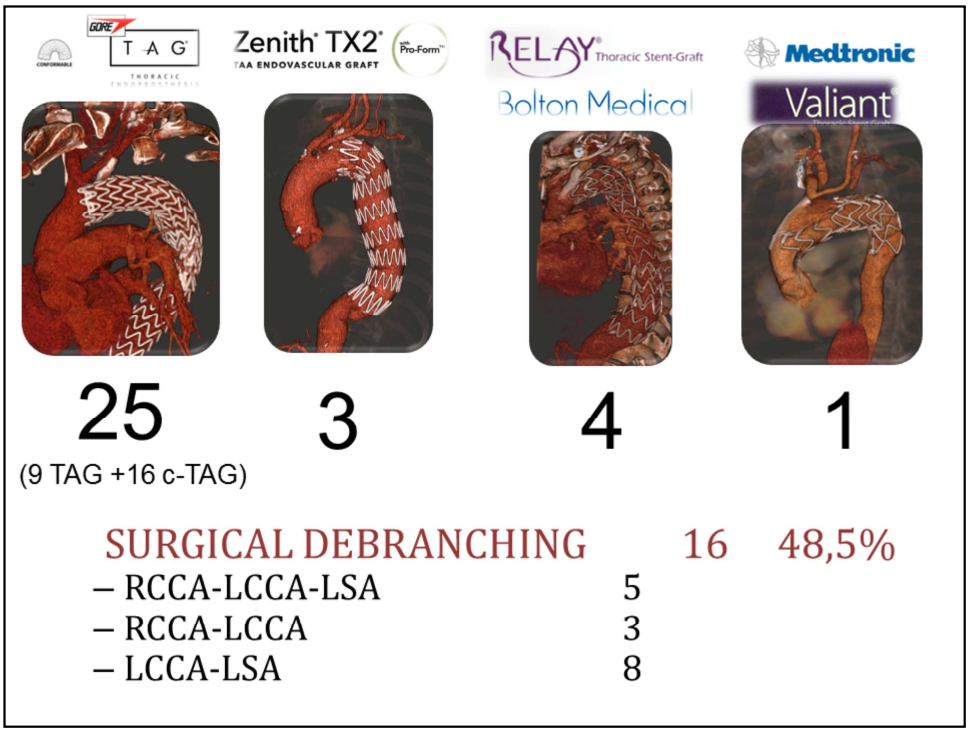
GLOBALLY OUR EXPERIENCE CONSIST IN 33 CASES COLLECTED OVER 13 YEARS

OUR EXPERIENCE - 33 CASES
JUN 2002 - JUNE 2015

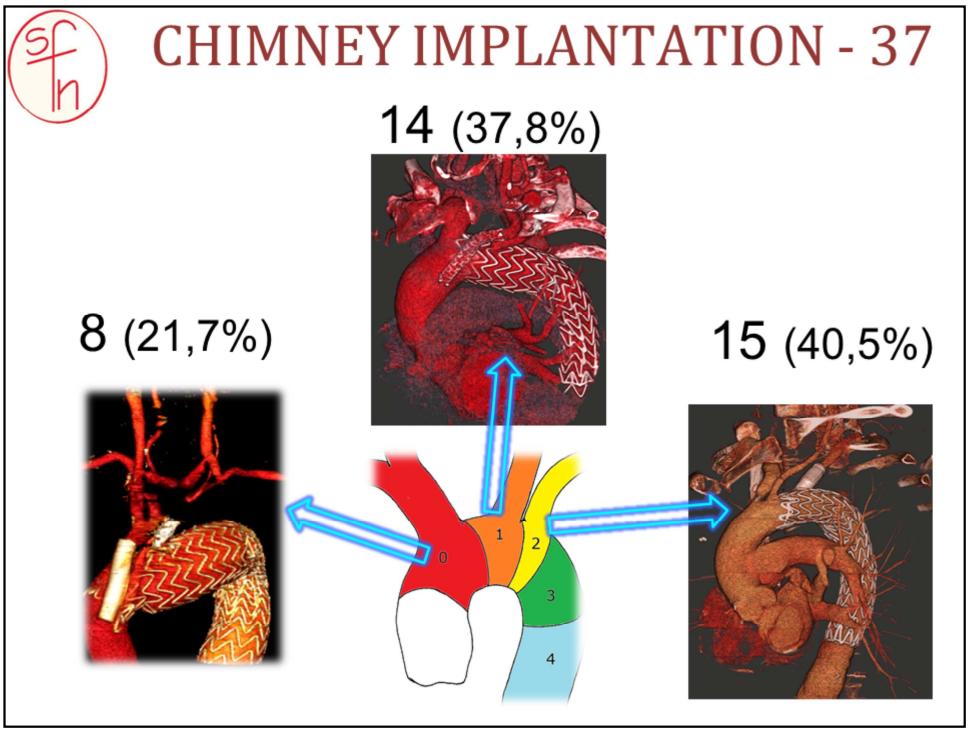
• INDICATIONS		
– EMERGENCY	9 (5 salvage)	27,3%
– PLANNED	24	72,7%
• PATHOLOGY		
– TAA	17	51,6%
– TYPE B DISS	13	39,4%
– EL type I (TEVAR)	2	6,0%
– PAU	1	3,0%

9 CASES WERE DONE IN EMERGENCY, THE OTHER WERE PLANNED FORCOMORBIDITIES OR PREVIUOS CARDIAC SURGERY.

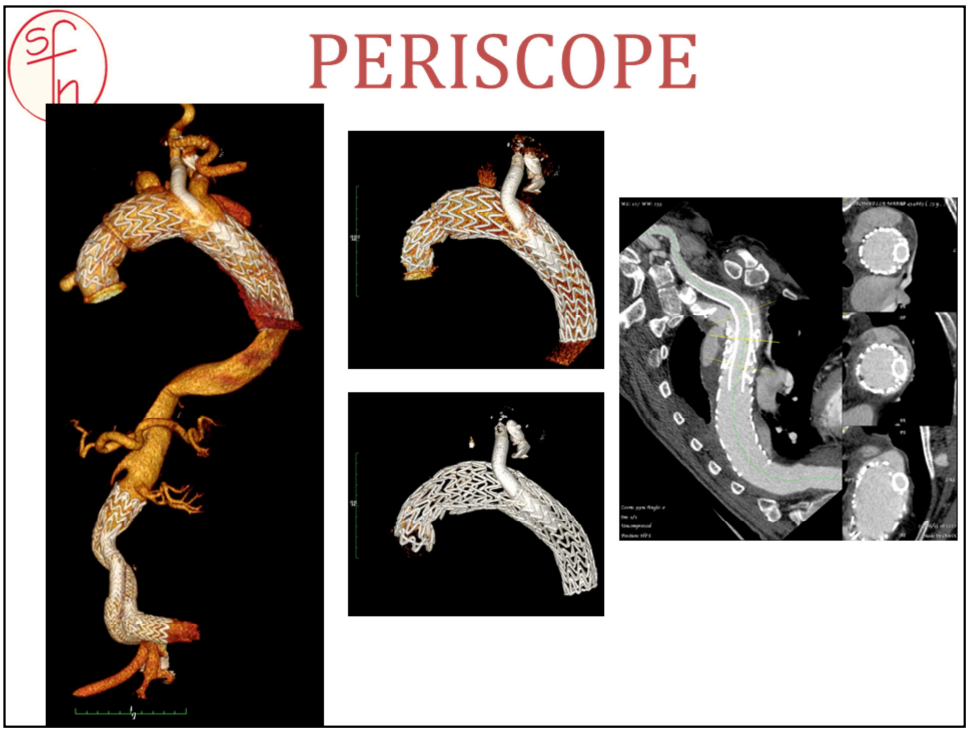
ANEURYSM and dissections were the MOST FREQUENT LESION but we used the technique even in 2 cases of type one endoleak



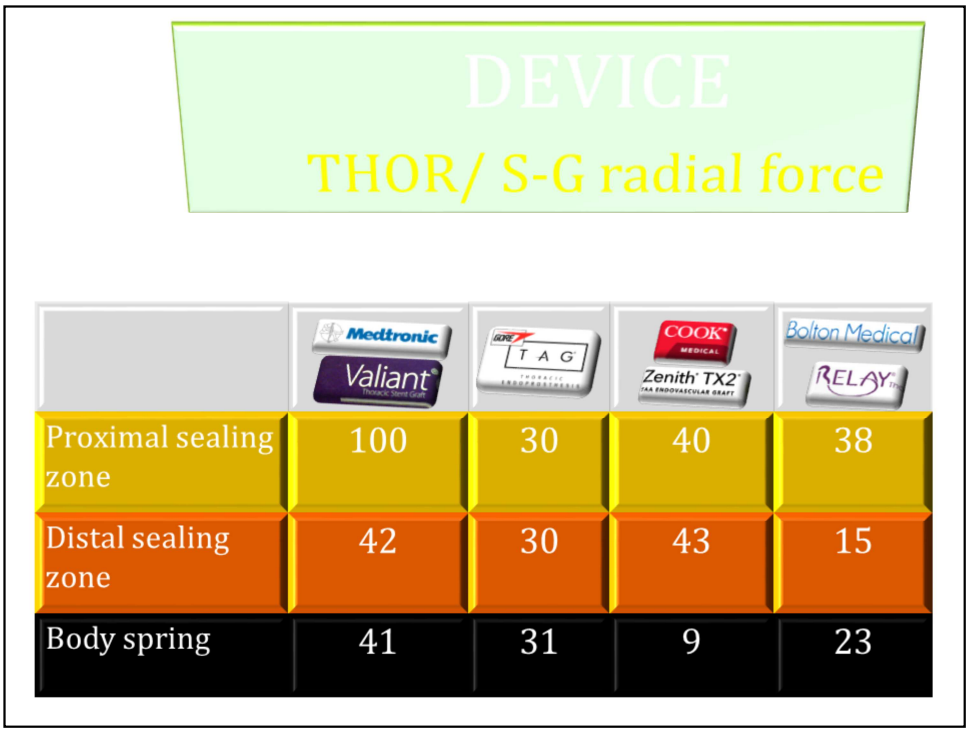
IN THE MAJORITY OF CASES WE USED THE GORE GRAFT AND CERVICAL DEBRANCHING WAS ASSOCIATED IN MORE THAN 40%



25% OF THE CHIMNEY WERE PLACED IN THE INNOMINATE ARTERY



AND IN TWO CASES WITH UNFAVOURABLE VESSEL TAKE OFF WE PERFORMED A PERISCOPE

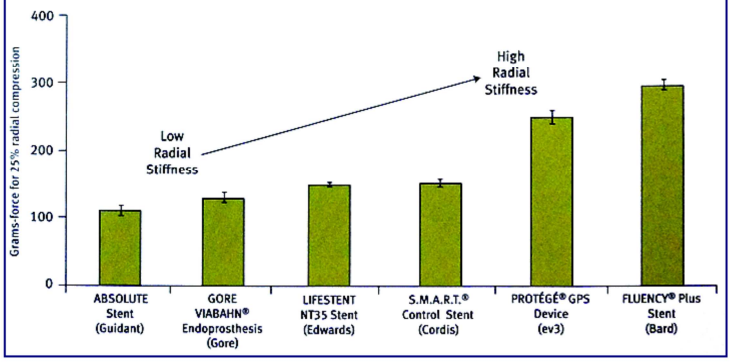


THE SG RADIAL FORCE

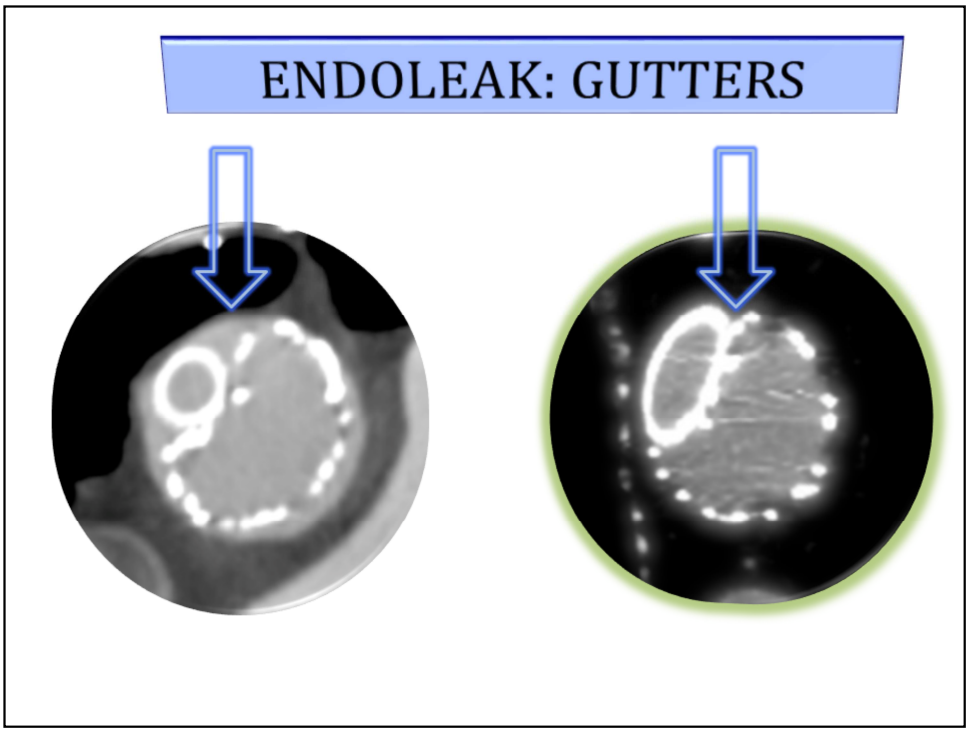
DEVICE

Choice of parallel graft: flexibility ≈ radial force

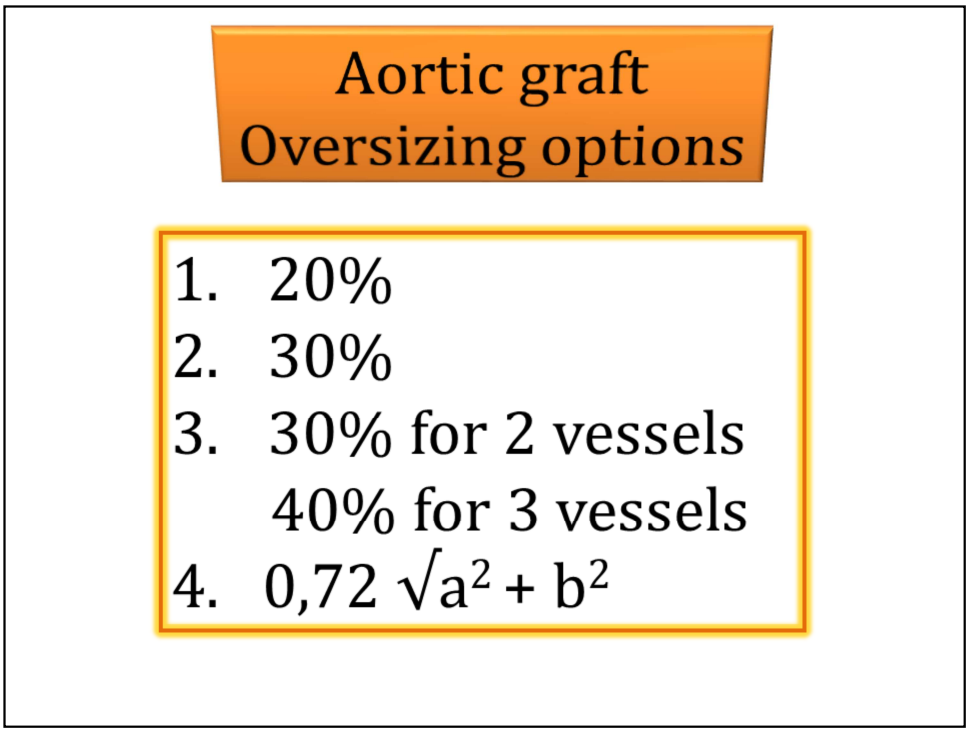
FIGURE 8. Force (grams-force) required to compress stent radially by 25%.



AS WELL AS THE FEATURES OF THE CHIMNEYS GRAFT MUST BE CONSIDERED WHEN PLANNING FOR THE OVERSIZING



TO REDUCE THE EL GUTTERS



WHAT WE CURRENTLY ADOPT IS A MAIN GRAFT OVERSIZING BETWEEN 20 AND 30 %, ACCORDING TO LACHAT FORMULA

Aortic graft Oversizing options

$4.\ 0{,}72\ \sqrt{a^2 + b^2}$ (Lachat)

Oversizing 25-35%
for double chimney
Lower for larger diameter

OR HIGHER FOR MORE COMPONENTS

CHIMNEY GRAFT

(OUR EXPERIENCE)

– HEMO/VIABAHN	28 (15 REINF)
– GORE LEG	3 (1 REINF)
– ADVANTA	1 (REINF)
– WALLSTENT	2
– BIOTRONIK	2
– PROTEGE'	4
– VISI-PRO	1

AS PARALL GRAFT WE USED SELF EXPANDABLE BARE STENT MAINLY FOR RESCUE AND VIABAHN FOR PLANNED CASES REINFORCED WITH BARE STENT IN PRESENCE OF SHARP ANGLE AND ALWAYS WHEN THE CHIMNEY WAS FOR THE INNOMINATE ARTERY

LIMB GRAFTS CAN BE NECESSARY IN CASE OF LARGE ARTERY DIAMETERS

30 DAYS RESULTS

- TECHNICAL SUCCESS 100%
- MORTALITY 3 9.1%
  (RETR TYPE A-CEREBR HEMORR-RESP FAILURE)
- COMPLICATIONS 7 21.2%
  - MINOR STROKE (2 RUPT-1 ELECT) 3
  - PARAPARESIS 1
  - TYPE I EL 0
  - OTHERS (minor) 3

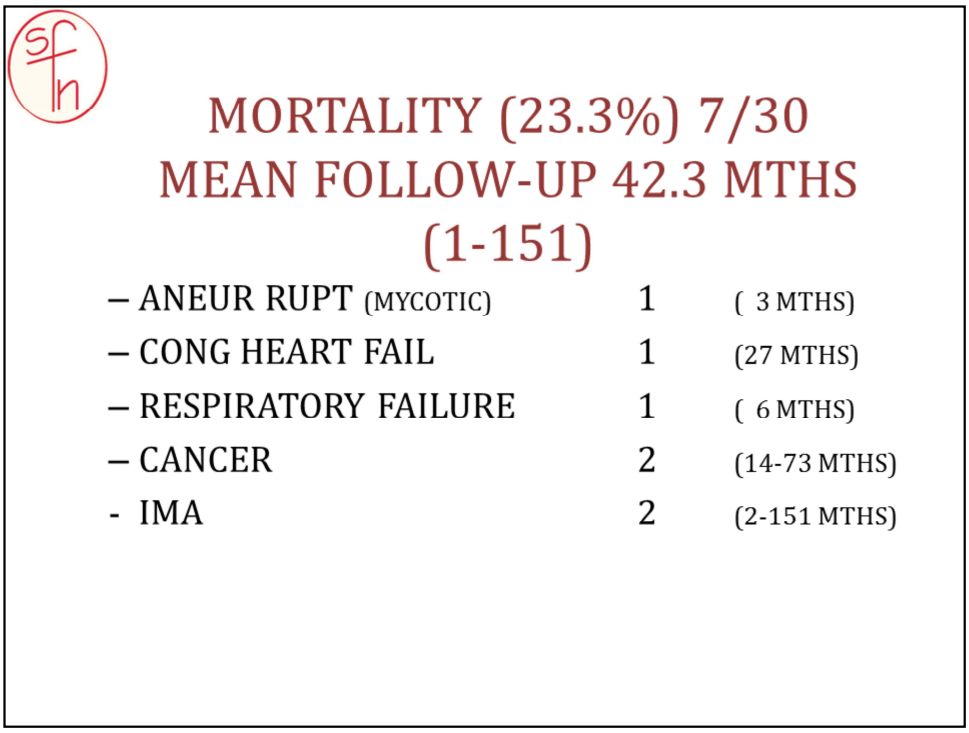
TECHNICAL SUCCESS WAS 100% AS IN OTHER EXPERIENCE

WE HAD 9 % OF MORTALITY

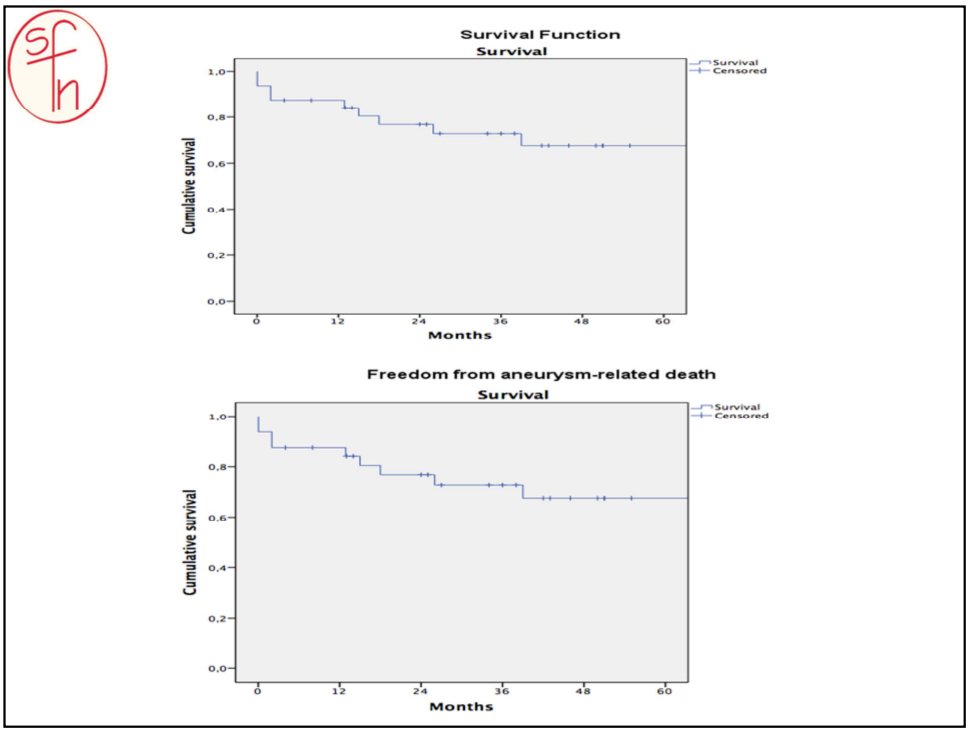
ONE PATENT DIED FOR RETROGRADE DISSECTION

3 MINOR STROKES OCCURRED TWO OF WHICH IN EMERGENCY

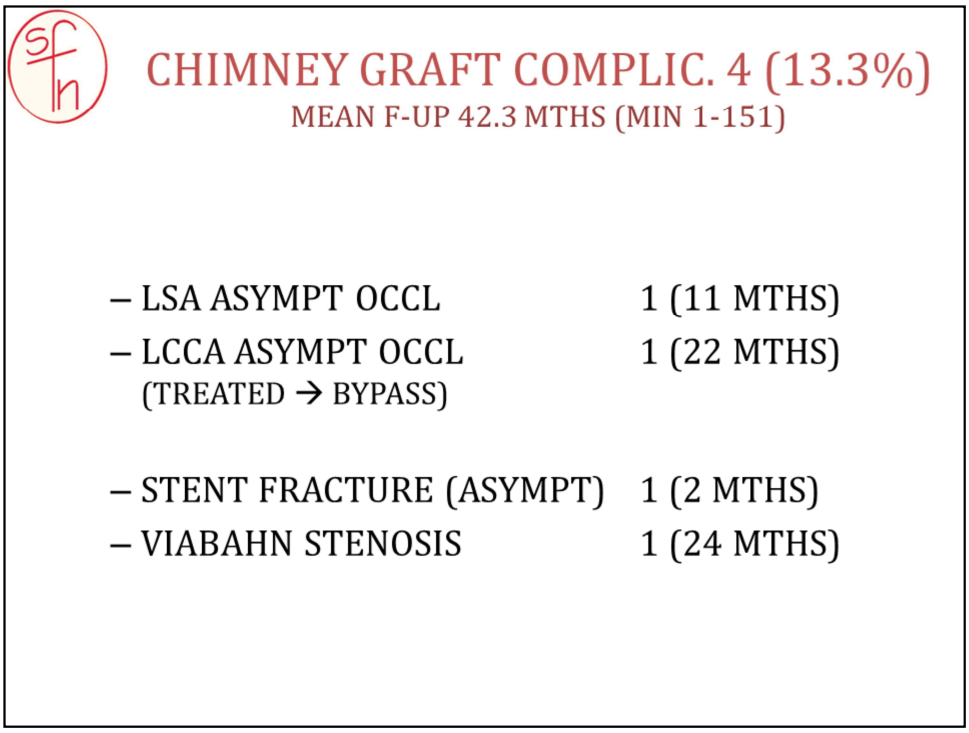
NO TYPE ONE ENDOLEAK WAS DETECTED AT COMPLETION ANGIOGRAPHY



AT 3 AND HALF YEARS FOLLOW UP WE HAD 4 DEATH ONLY ONE PTHOLOGY RELATED DUE TO A MICOTIC ANEURYSM RUPTURE



THESE ARE THE SURVIVAL AND FREEDOM FROM ANEURYSM RELATED DEATH

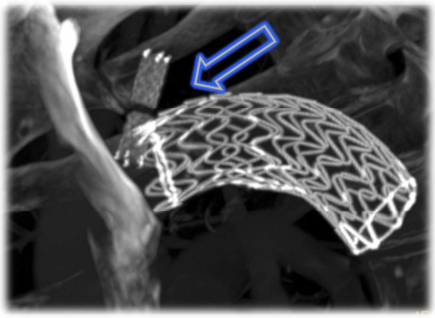


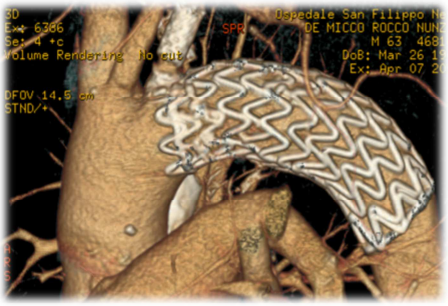
WE OBSERVED 4 ASYMPTOMATIC CHIMNEY GRAFT COMPLICATIONS: 2 OCCLUSIONS, ONE ALREADY SHOWN, TREATED BECAUSE OF THE LEFT COMMON CAROTID ARTERY;

STENT FRACTURE

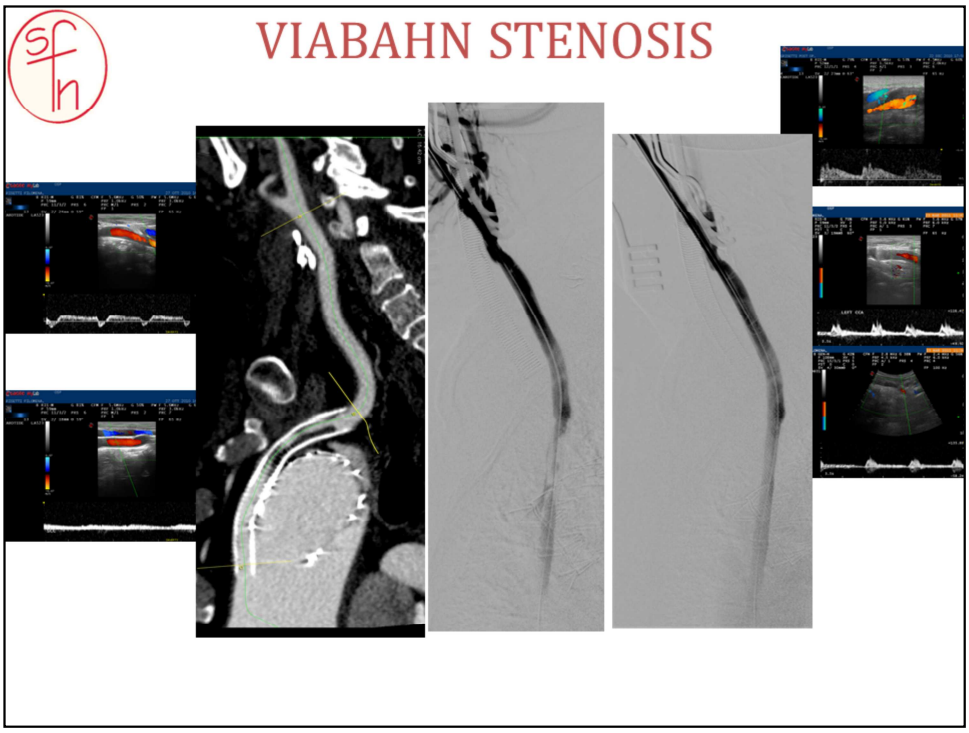
LSA Stent Fracture after 2 months

PATENT AT 54 mths

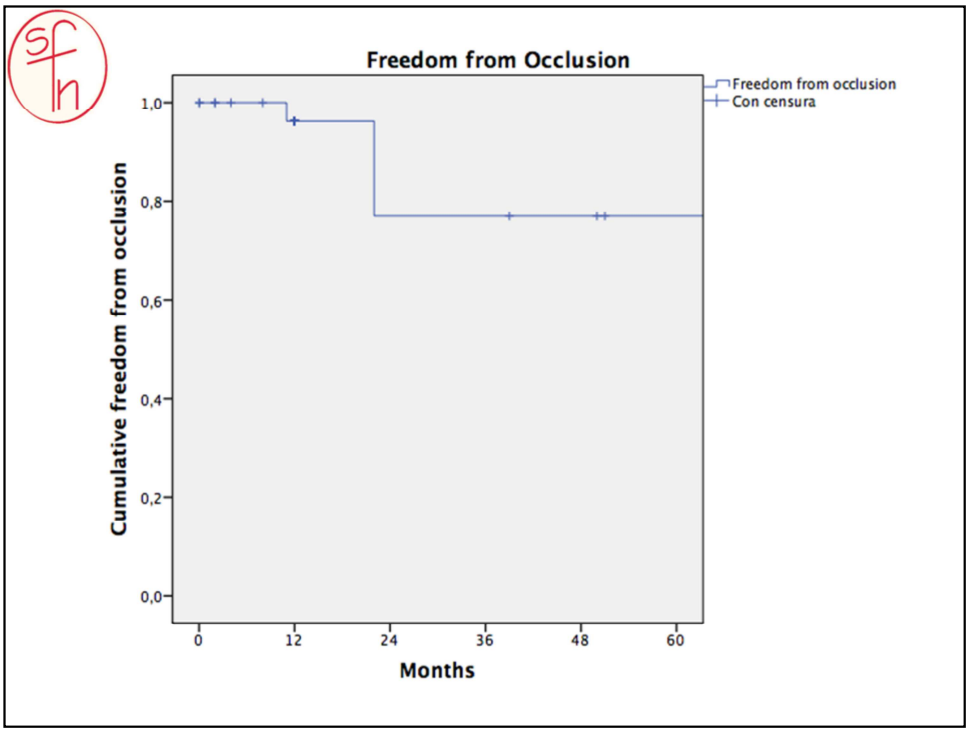




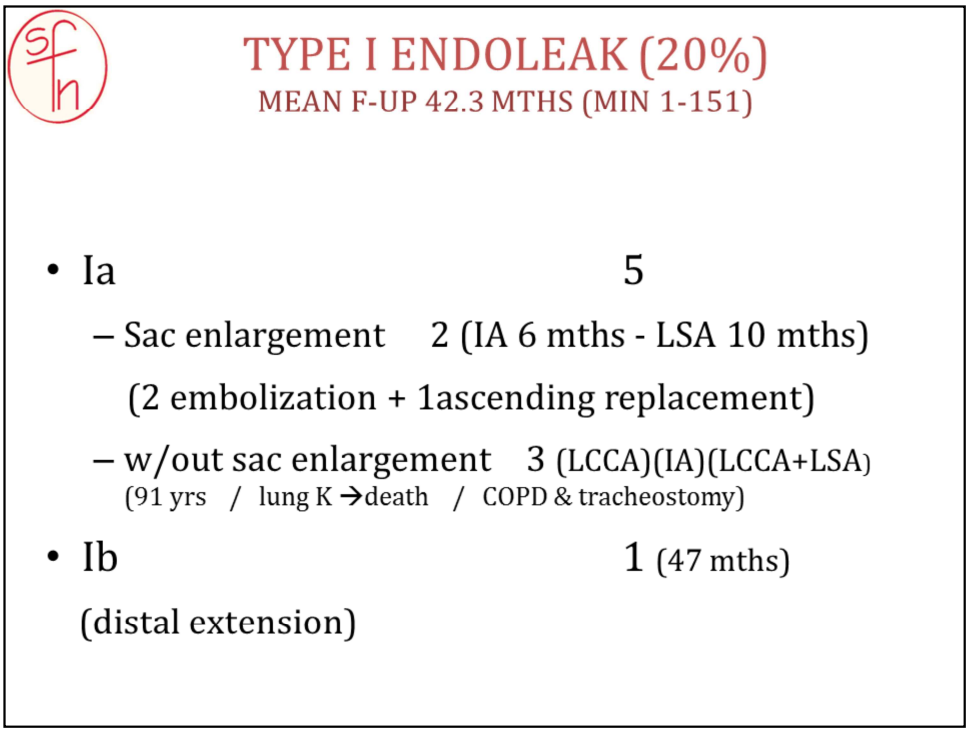
THE CHIMNEY WITH STENT FRACTURE IS STILL PATENT AND WAS LEFT UNTREATED



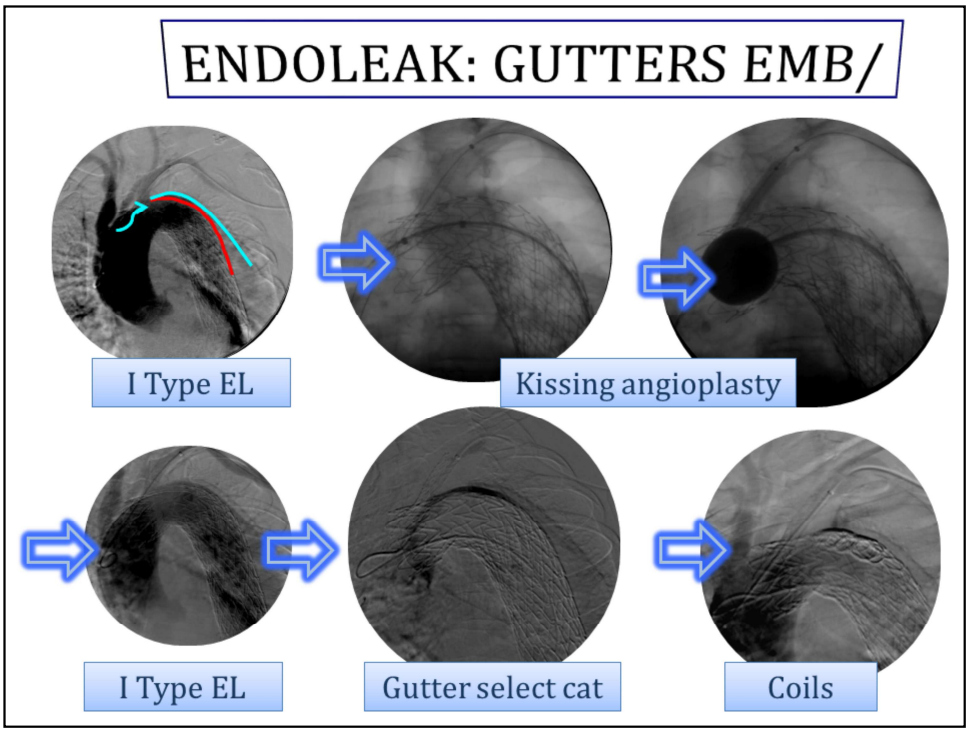
THE VIABAHN STENOSIS WAS TREATED BY ANGIOPLASTY AND STENTING VIA EXTERNAL CAROTID ARTERY



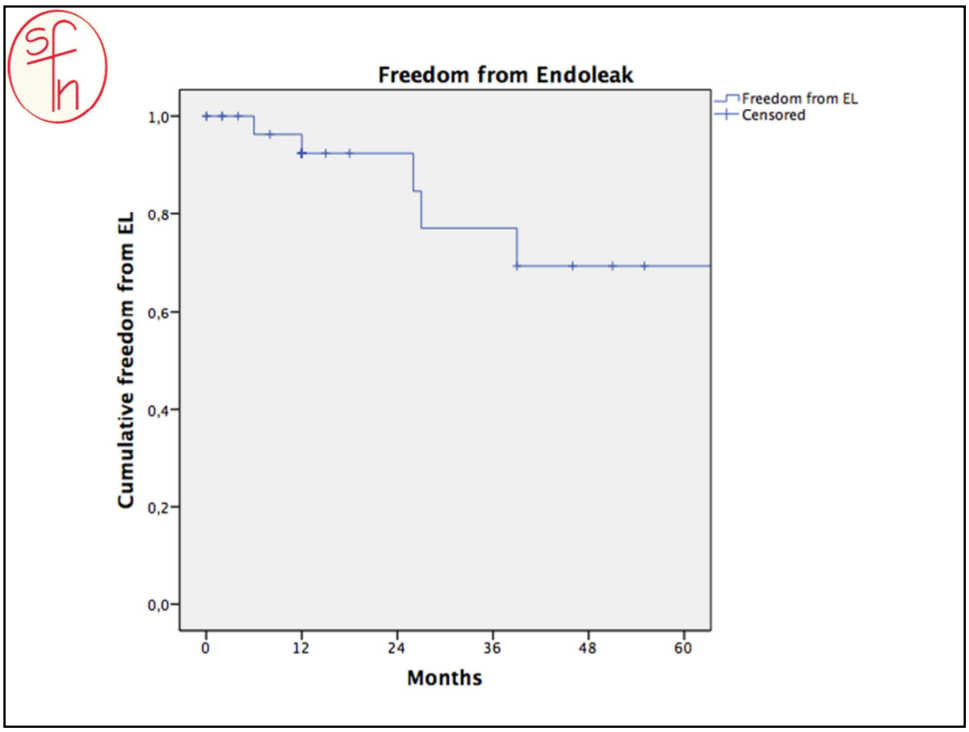
AND THIS IS THE FREEDOM FROM OCCLUSION CURVE



DURING FOLLOW UP 6 PATIENTS DEVELOPED TYPE ONE ENDOLEAK, THE ONE WITH TYPE ONE B WAS TREATED BY DISTAL EXTENSION, 3 WERE LEFT UNTREATED BECAUSE OBSERVED IN PROHIBITIVE RISK PATIENTS AND W/OUT SAC ENLARGEMENT, 2 WERE TREATED BY EMBOLIZATION AND ONE WAS EVEN TREATED FOR AN ASCENDING DILATATION BY THE CARDIAC SURGEON



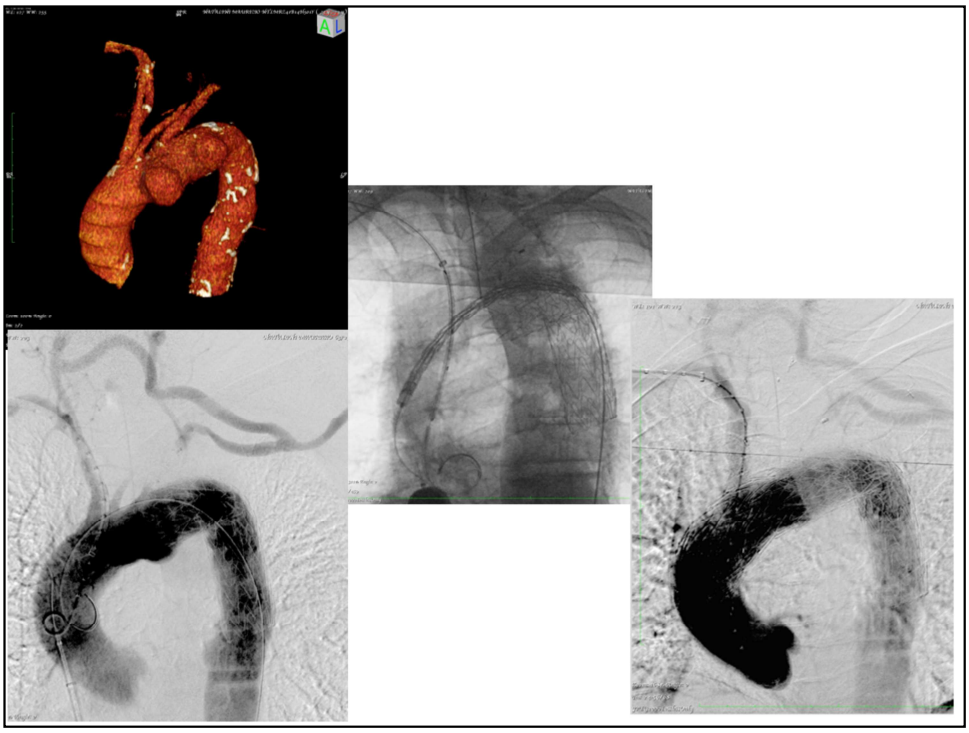
THIS IS ONE OF THE TWO: AFTER AN INEFFECTEVE REDO KISSING BALLON ANGIOPLASTY WE PERFORMED A TRANSFEMORAL COILS EMBOLIZATION



AND THIS IS THE TYPE ONE ENDOLEAK FREE SURVIVAL CURVE

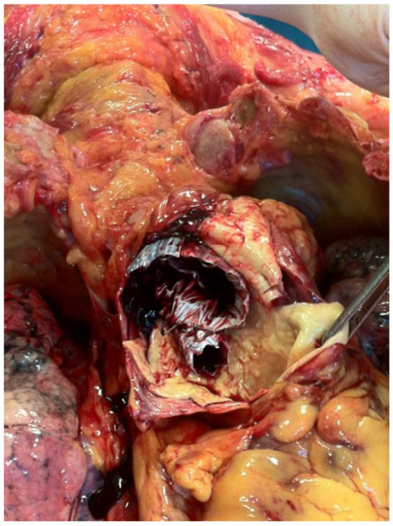
RIGHT STENT GRAFT LANDING ZONE

TO PREVENT
RETROGRADE TYPE A



RETROGRADE TYPE A

Day 4 sudden death



Aortic arch debranching and thoracic endovascular repair **105 pts**

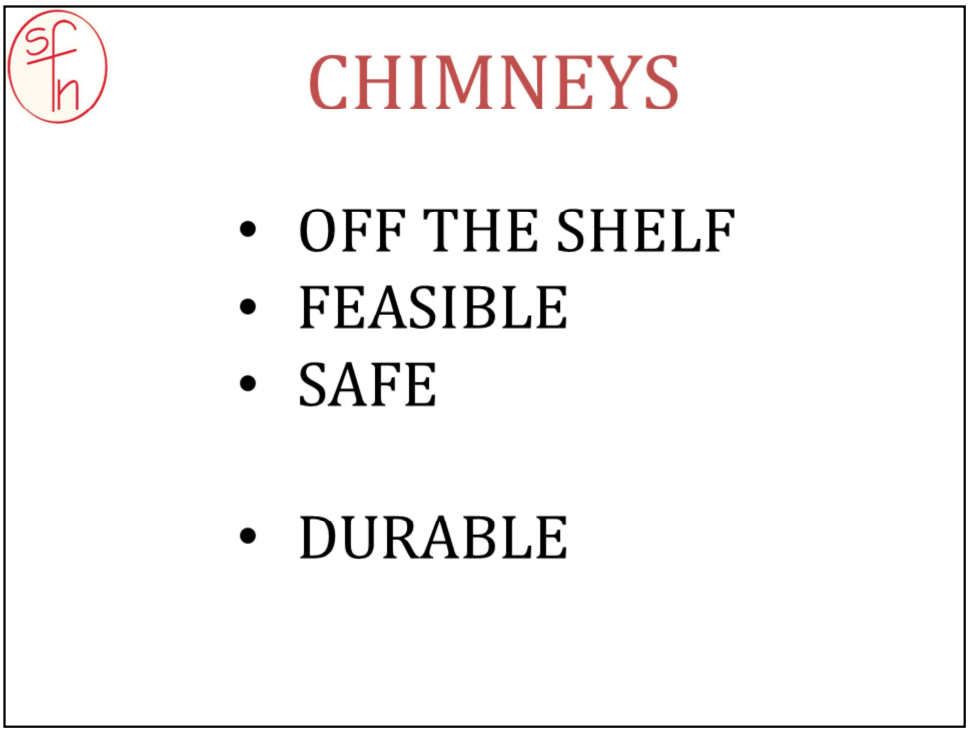
Paola De Rango, MD, PhD,[b] Piergiorgio Cao, MD, FRCS,[a] Ciro Ferrer, MD,[a] Gioele Simonte, MD,[b] Carlo Coscarella, MD,[a] Enrico Cieri, MD, PhD,[b] Gabriele Pogany, MD,[a] and Fabio Verzini, MD, PhD,[b]
Rome and Perugia, Italy

- ZONE 0 19
- ZONE I 51
- ZONE II 35

Overall, four de novo type A retrograde dissections were recorded at 30 days: three occurred in patients with zone 0 repair (two were lethal) and one after 10 days in a patient with zone 1 partial debranching who was successfully treated with ascending aorta replacement.

- MORTALITY 5.8% (4/6 ZONE 0)
  2 RETR TYPE A
- STROKE 3.8% (1/3 ZONE 0)
- SCI 2.9%

(J Vasc Surg 2014;59:107-14.)

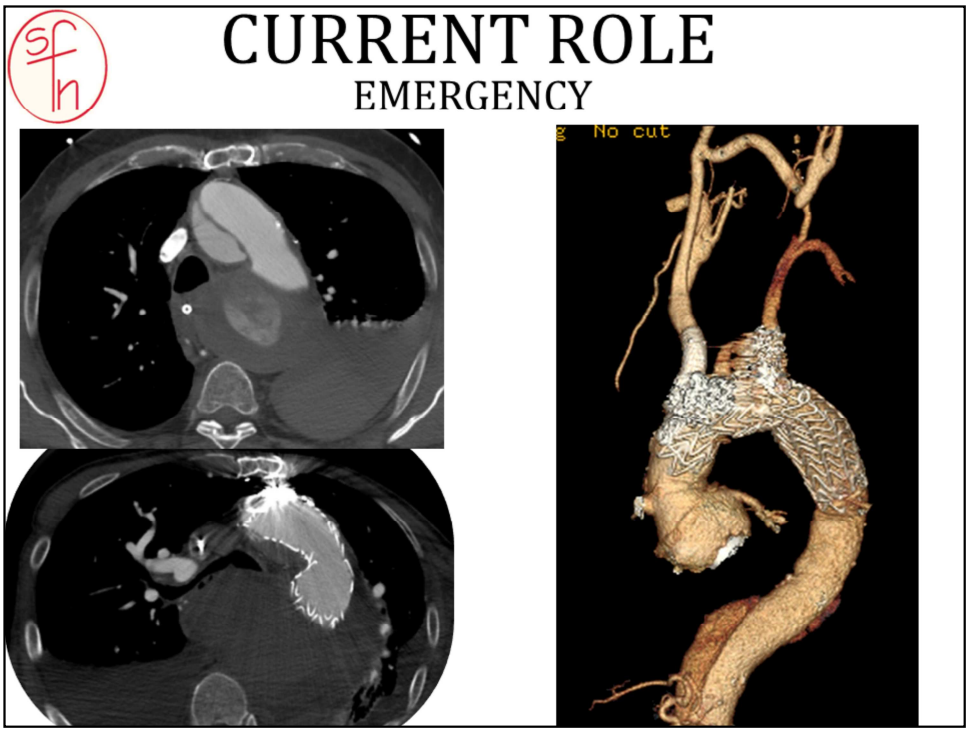


SO I THINK I CAN CONCLUDE THAT CHIMNEY TECHNIQUE IS NOT ONLY FEASIBLE AND SAFE IN THE IMMEDIATE BUT EVEN DURABLE IN THE LONG RUN

TYPE I ENDOLEAK IS STILL AN ISSUE

CHIMNEY ROLE

- ✓RESCUE
- ✓EMERGENCY
- ✓HIGH RISK PATIENTS
- ✓CUSTOM SG LIMITATION



AND CERTAINLY CANNOT BE USE FOR URGENT CASES LIKE THIS RUPTURE


CHIMNEY
TECHNIQUE
AMERICAN EXPRESS
VISA