STATUS OF EVAR FOR FOR RUPTURED AAAs

DEBATE: IN SUPPORT OF EVAR

FRANK J. VEITH

3rd INTERNATL MEETING ON AORTIC DISEASES

LIEGE, BELGIUM – OCT 5, 2012

ENDOVASCULAR TOOLS IN THE MANAGEMENT OF RAAAs

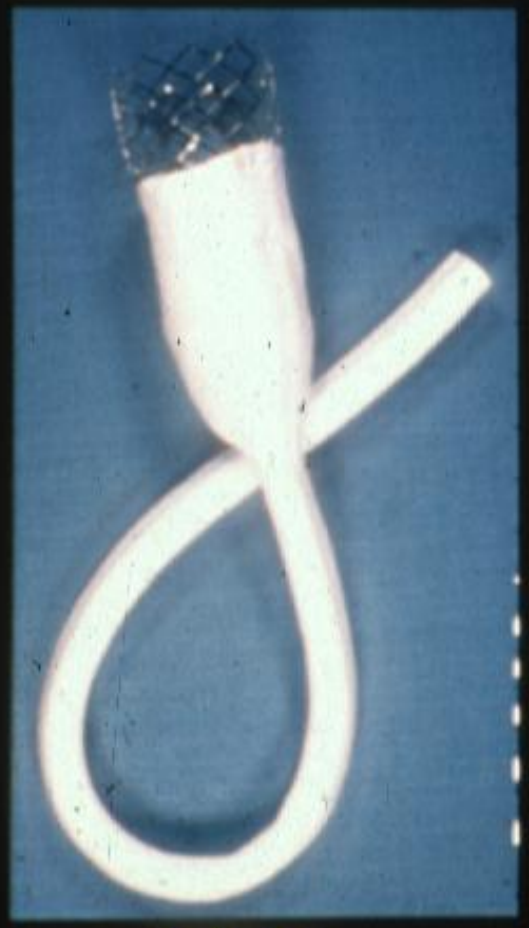
CONCEPT WE HAVE HAD SINCE FIRST EVAR IN 1992

REASON TO PURSUE EVAR TREATMENT OF RUPTURED AAAs

- High Mortality (35-55%) And Morbidity From Standard Open Surgical Repair (OR)

∴ Clear Room For Improvement

HAVING OUR OWN SURGEON-MADE GRAFT AVAILABLE & STERILE IN 1994



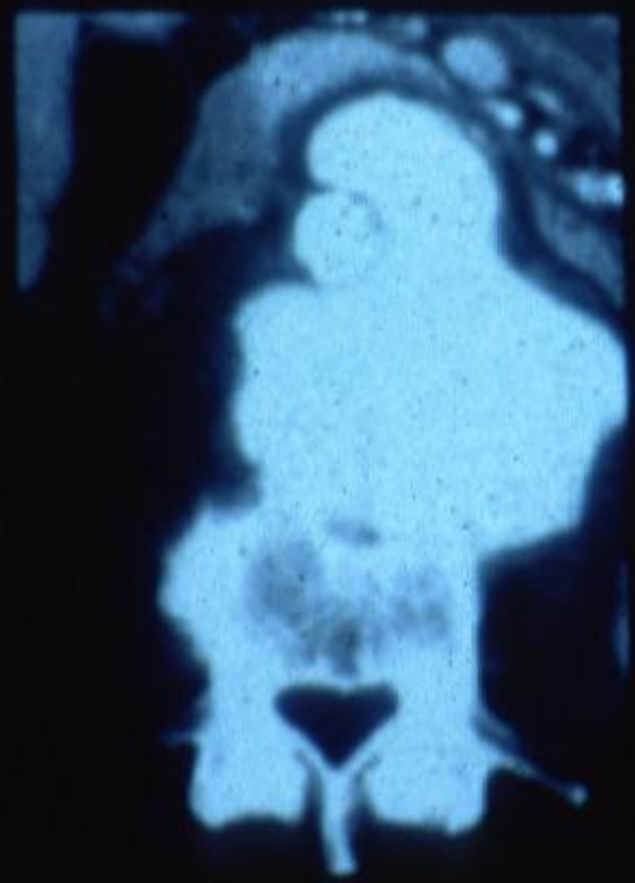
MEGs

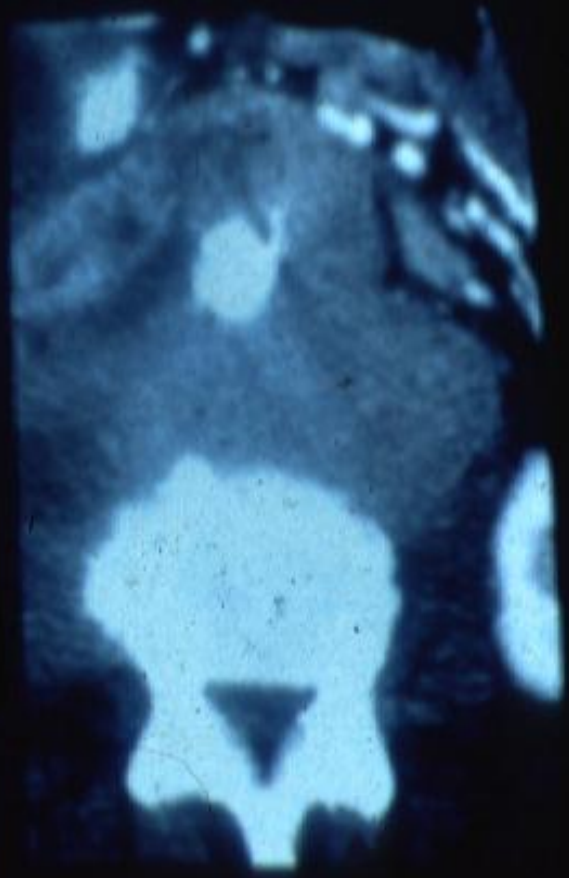
Completion

FIRST EVAR FOR RAAA
APRIL 1994

PREOP

POSTOP





SURVIVED
>3 YEARS

IN 1994 & 1995 WE TREATED BY EVAR

11 Other Pts With Ruptured AAAs & Prohibitive Risk For Open Surgical Repair (OR)

OUR RESULTS OF EVAR FOR RUPTURED AAAs In 1994 & 95

12 Patients Treated

12 Aneurysms Excluded

2 Postoperative Deaths

17% Mortality

OUR HYPOTHESIS IN 1995

EVAR And

Endovascular Techniques

For All Ruptured AAAs With OK Anatomy

Even In Good Risk Patients

OUR RESULTS OF ENDOVASCULAR TREATMENT OF RUPTURED AAAs

57 Patients Treated (EVAR If Poss)

45 With EVAR (79%)

12 Open Operations (21%)

7 Deaths – 12 % Mortality

THESE AND OTHERS' RESULTS SUGGEST THAT EVAR IMPROVES Rx OUTCOMES FOR RAAAs

HOWEVER

SOME GROUPS HAVE HAD POOR RESULTS WITH EVAR FOR RAAAs

3 CONTROLLED STUDIES SHOWED EVAR NO BETTER THAN OPEN REPAIR (OR)

- **PEPPELENBOSCH, BUTH ET AL**
  J VASC SURG 43:1111, 2006
- **HINCHLIFFE, ET AL**
  EUR J VASC ENDOV SURG 32:506, 2006
- **CHO, ET AL - JVS 2012**

EVAR FOR RUPT AAAs

- **REMAINS CONTROVERSIAL**

- SOME STILL SAY WE

NEED RCT

- THREE PLANNED – i IN UK

i IN FRANCE; i IN NETHERLANDS

BECAUSE OF THIS CONTROVERSY

COLLECTED WORLD EXPER WITH ENDOVASCULAR Rx (EVAR) FOR RUPT AAAs

FJ VEITH, M LACHAT, M MALINA
E VERHOEVEN, G COPPI, T LARZON
M MEHTA & RAAA INVESTIGATORS

ANN SURG -- NOV 2009;
250 : 818-824

RESULTS – UPDATED THROUGH 2009

- **FROM 13 CTRS – EVAR ON ALL ANAT POSS RAAA PTS**
  680 RAAA PTS RxS BY EVAR
  763 RAAA PTS RxD BY OR

30-DAY MORTALITY

EVAR OR

19.7% VS 36.3% (P <.0001)

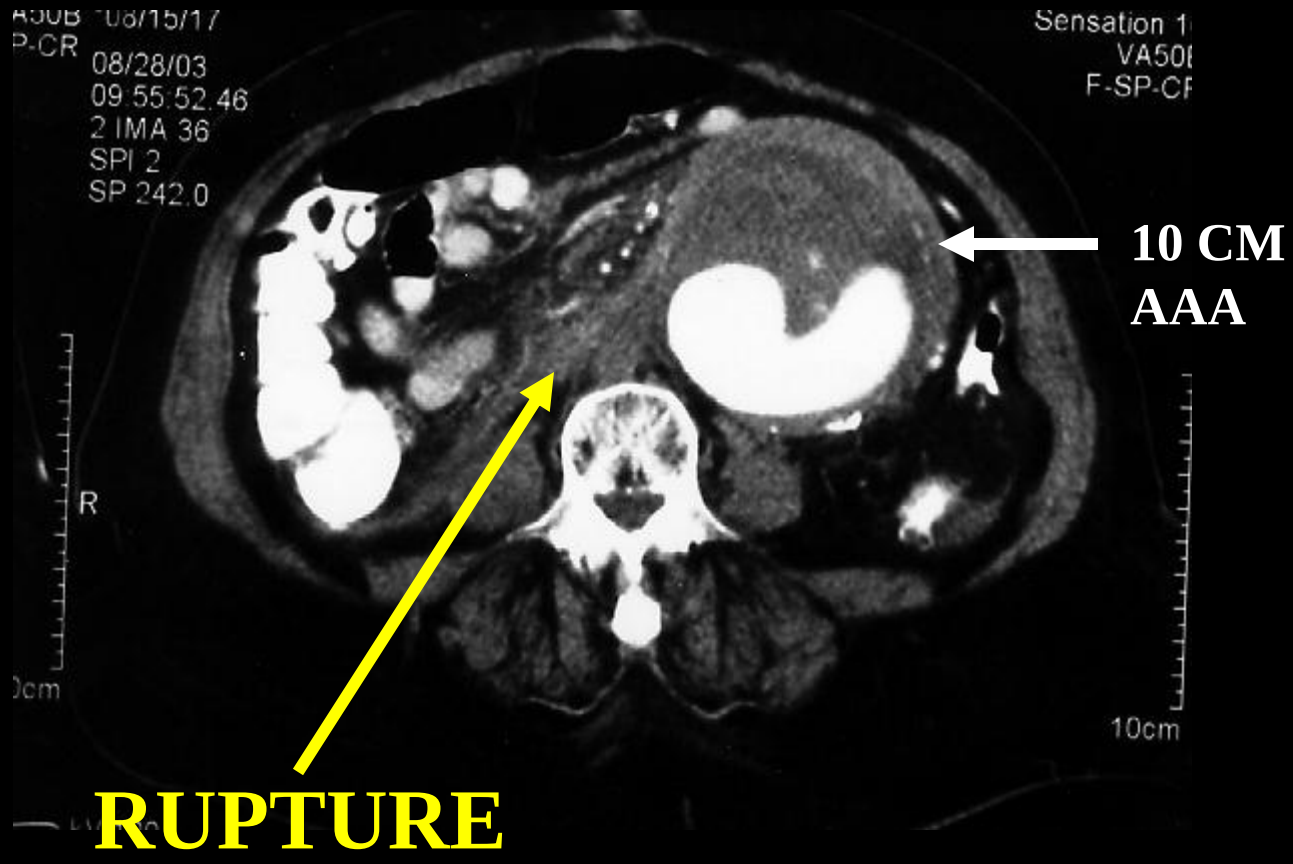
HOWEVER NOT A RCT

CASES MAY NOT BE COMPARABLE – PTS WITH BAD ANATOMY & TREATED BY OR MAY BE WORSE RISK

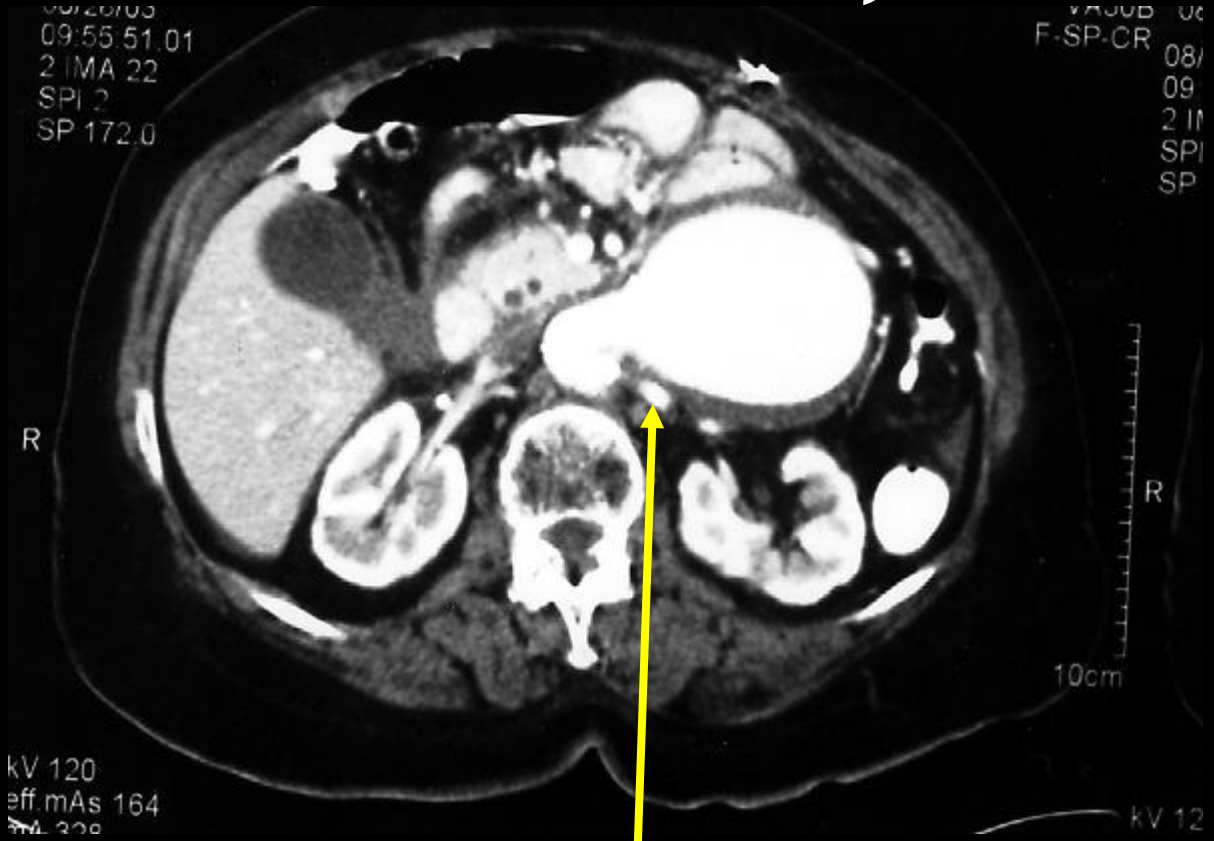
THAT UNLIKELY POSSIBILITY OFFSET BY

10-15% PTS CATEGORICALLY IMPOSSIBLE TO TREAT BY OPEN REPAIR WHO WERE SUCCESSFULLY RxD BY EVAR

86 y/o Jehovah's Witness; BP=80
Hct 40% → 27%; INR = 4



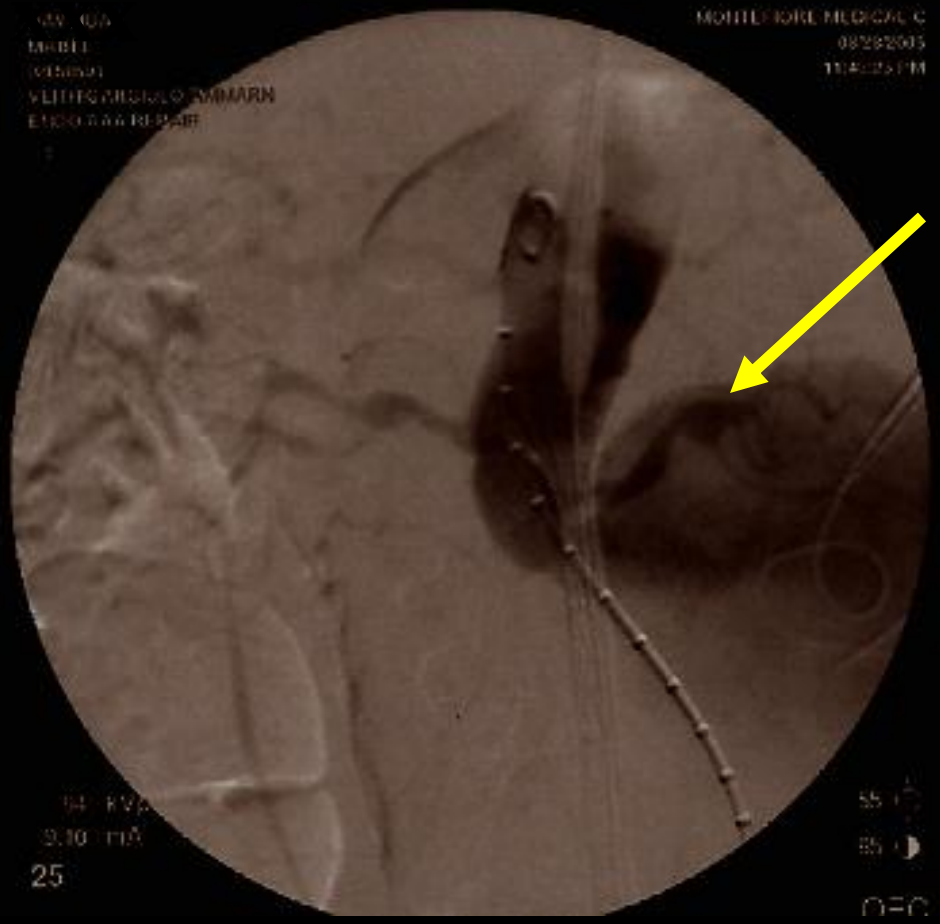
BAD NECK – REFUSED BLOOD
HCT DECR TO 17%; BP to 60 mm



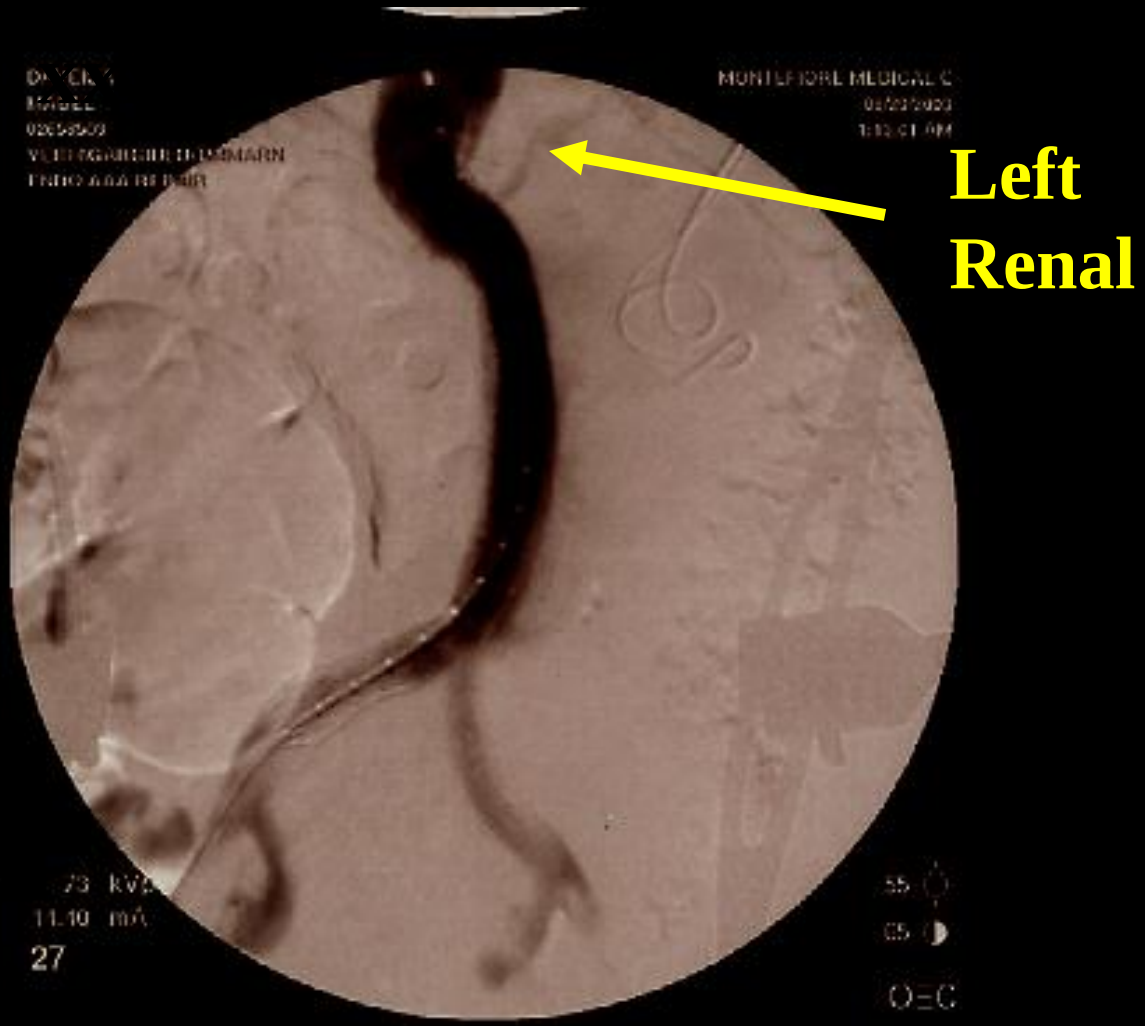
Left
renal

DESPITE BAD NECK

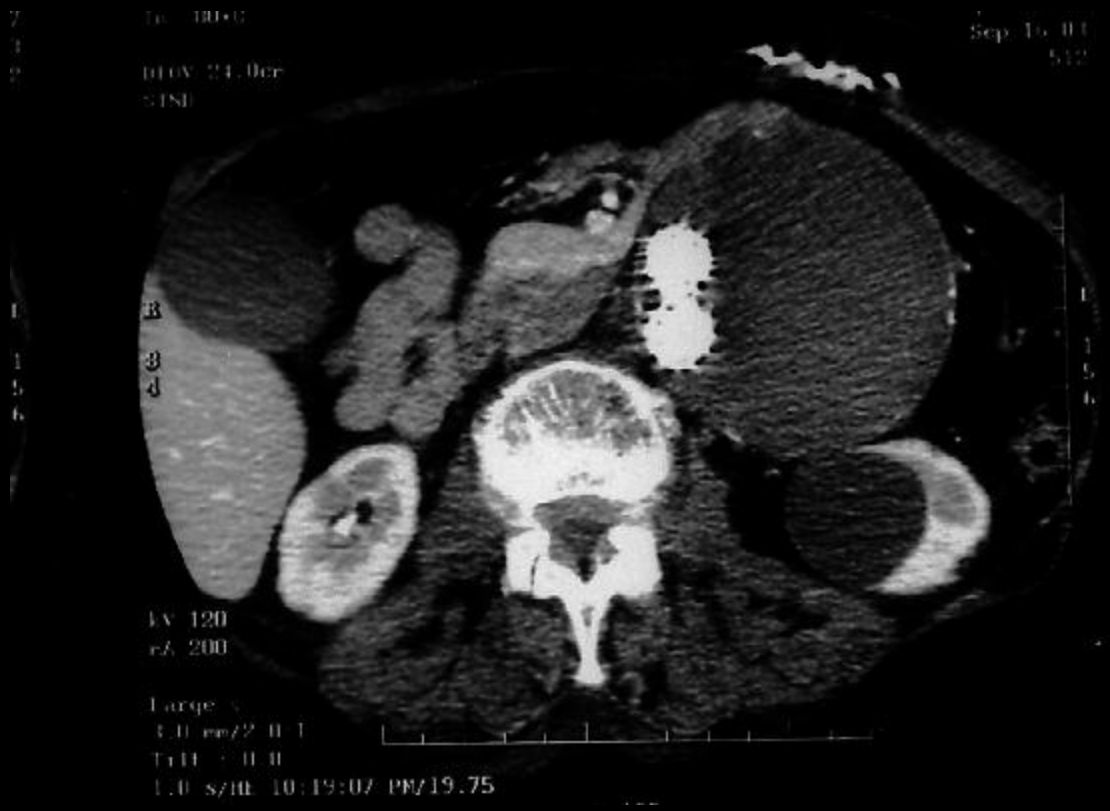
HCT 27 →17% - BP →60



AneuRx EVAR



HCT = 17% → 24% → 40%
WELL >6 YEARS LATER



WHY CAN SOME GROUPS LIKE THE 13 CENTERS GET GOOD RESULTS & OTHERS NOT ???

WE BELIEVE
TREATMENT STRATEGIES
ADJUNCTS & TECHNIQUES

MAKE A DIFFERENCE AND ACCOUNTS FOR BETTER RESULTS

SOME KEY ELEMENTS TOP TIPS

VEITH, ET AL
ANN SURG, 2009
250:818-824

TOP TIP # 1

RESTRICT RESUSCITATION

"HYPOTENSIVE HEMOSTASIS"

IF MOVING & TALKING - OK

IF BP 50-70 mm Hg, IT'S OK

TOP TIP # 2

- **IN OR – 50-70% REQ OPEN COMPONENT**
- **PLAN & PREPARE**
- **SET UP EQUIPMENT**
- **REHEARSE, PROTOCOL**
- **ORGANIZATION**

TOP TIP # 3

- PLACE TRANSFEMORAL WIRE IN SUPRACELIAC AORTA UNDER LOCAL ANESTHESIA
- LOCAL THEREAFTER CONTROVERSIAL

TOP TIP # 4

- **ONLY PLACE LG SHEATH & INFLATE BALLOON IF NECESSARY (~25% OF CASES)**

TIP # 5 WHEN HYPOTENSIVE HEMOSTASIS DOES NOT WORK & NEED SUPRACELIAC BALLOON

TECHNIQUE IS KEY

CANNOT LOSE CONTROL

MALINA VEITH IVANCEV, JEVT 2005

VIDEO – SVS – 2010; JVS 2013

TOP TIP # 5 (CONTD)

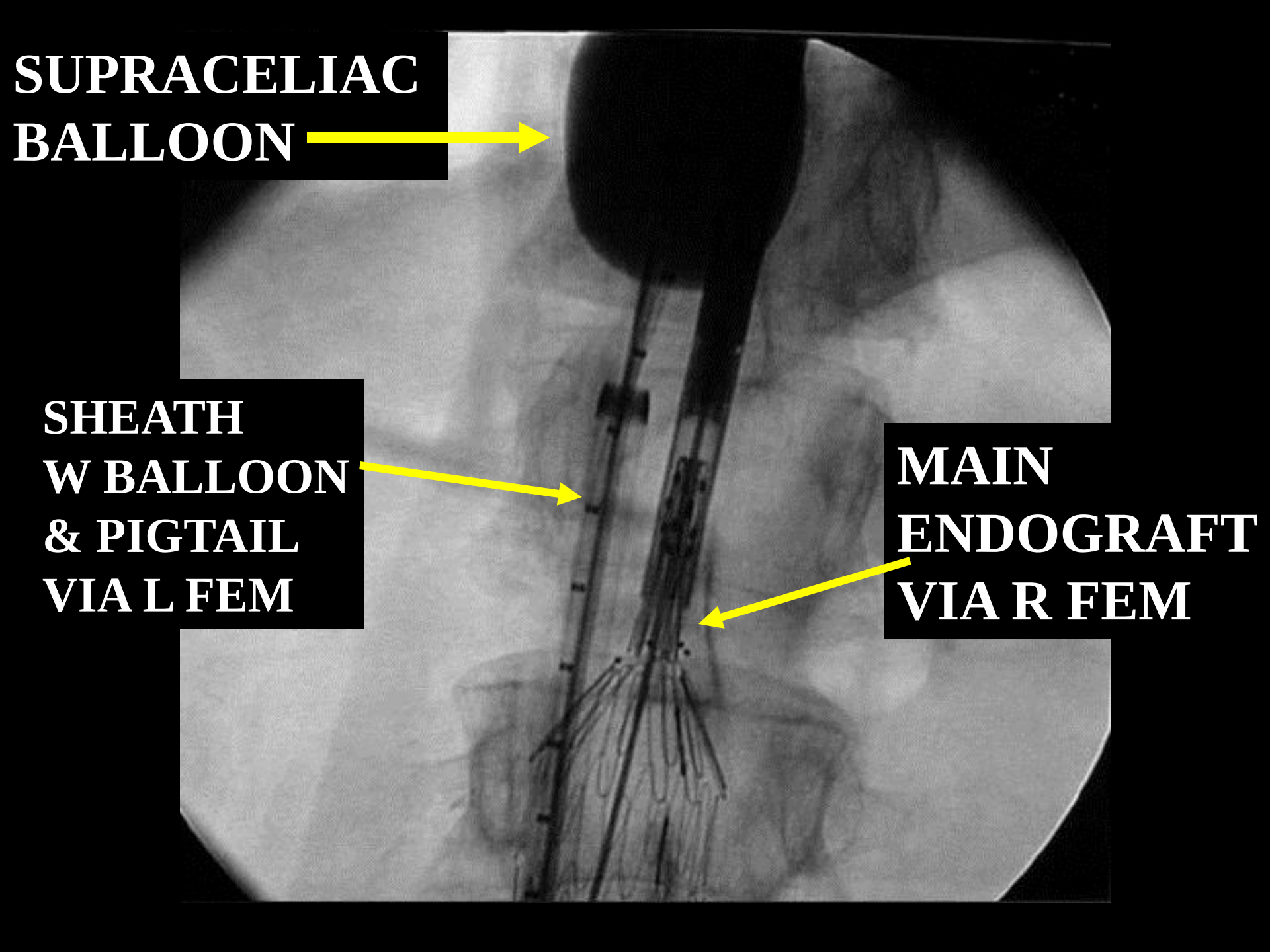
FAVOR FEMORAL INSERTION SITE FOR ANGIO & BALLOON

FEMORAL INSERTION

- EASIER
- QUICKER, BUT
- BLOWDOWN
- CUMBERSOME
- CANT LOSE CONTROL

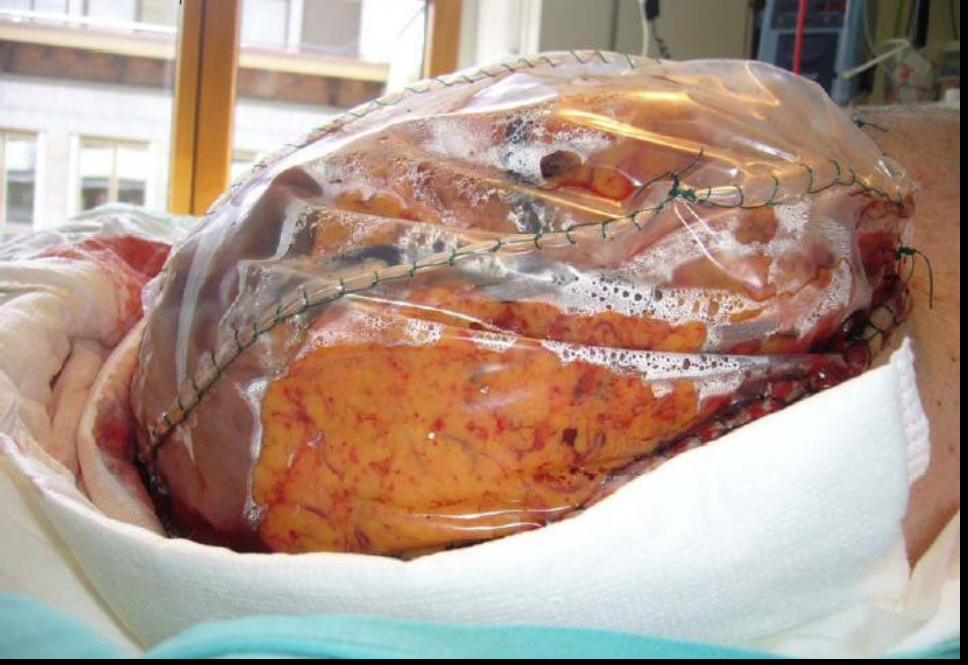
FEMORAL INSERTION WITH MODULAR EVG

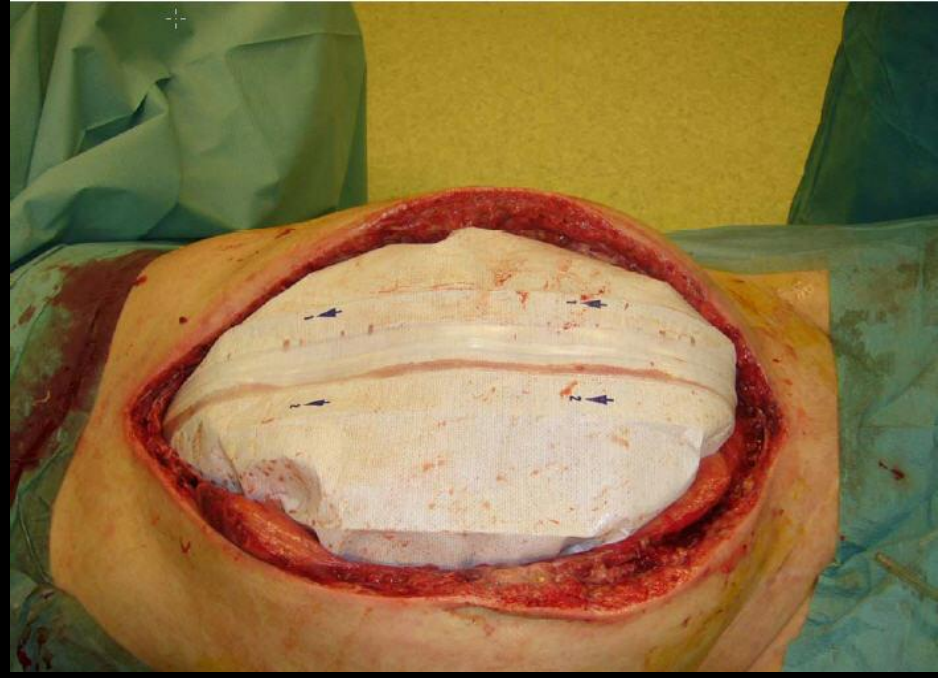
- 14 Fr SHEATH VIA LEFT(L) FEM
- SUPRACELIAC BALLOON VIA L
- FLUORO-GUIDED INFLATION WITH SHEATH SUPPORT
- DEPLOY BODY & IPSI LIMB VIA R
- 2nd BALLOON VIA R SIDE
- INFLATE IN BODY, REMOVE 1st BALLOON VIA SHEATH, FINISH

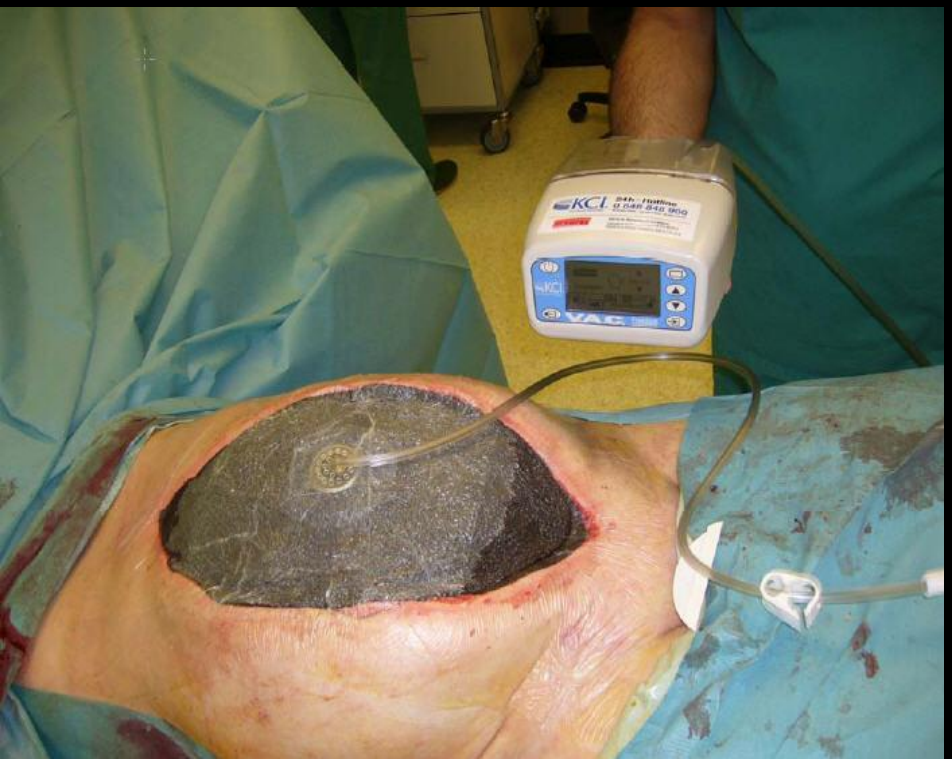

SUPRACELIAC
BALLOON
SHEATH
W BALLOON
& PIGTAIL
VIA L FEM
MAIN
ENDOGRAFT
VIA R FEM

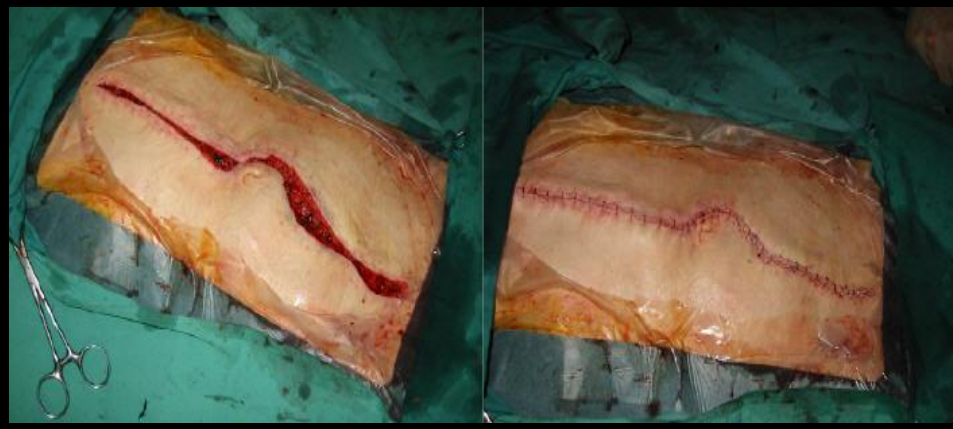
TOP TIP # 6

- WATCH FOR & Rx ABD COMPARTMENT SYNDROME
- DECOMPRESS PRN
- VAC DRESSING, ETC
- LACHAT, MAYER, VEITH ET AL – JVS JULY 09









COURTESY
DIETER MAYER
MARIO LACHAT

TOP TIP # 7

- MUST USE EVAR ON ALL POSSIBLE PATIENTS
- MANY ONLY DO STABLE PTS

WRONG BECAUSE…

BIG SURVIVAL GAIN IS WITH HIGH RISK UNSTABLE PTS

TOP TIP # 8

WHEN EVAR NOT POSSIBLE OPEN REPAIR WITH OR WITHOUT BALLOON

- ? CHIMNEY GRAFT

CONCLUSION I

AS WITH EVERYTHING ELSE IN THIS WORLD

- HOW YOU DO EVAR FOR RAAAs MATTERS - &
- MUST INCLUDE TOP TECH TIPS MENTIONED

CONCLUSION II

THE LOW MORTALITY (< 20%) &
MANY INOPERABLE CASES
TREATED SUCCESSFULLY SHOW

EVAR IS A BETTER WAY TO TREAT RUPTURED AAAs IN ANATOMICALLY SUITED PTS

PROVISO

AN INSTITUTION HAS THE SKILLS, FACILITIES, GRAFTS EQUIPMENT, ORGANIZATION & WILL TO DO EVAR FOR RAAAs

CONCLUSION III

- A RCT (EVAR VS OR) IS NOT NEEDED
- WILL BE DIFFICULT
- LIKE DOING RCT OF PROX CONTROL IN ART BLEEDING