

**INTERNAL ILIAC OCCLUSION
IS SAFE DURING EVAR
- EVEN BILATERALLY**

25 YR EXPERIENCE IN 156 PTS

FRANK J. VEITH

CRITICAL ISSUES

IN AORTIC ENDOGRAFTING - 2012

LILLE, FRANCE – MAY 25, 2012

OF COURSE

I SAY

PRESERVE THE

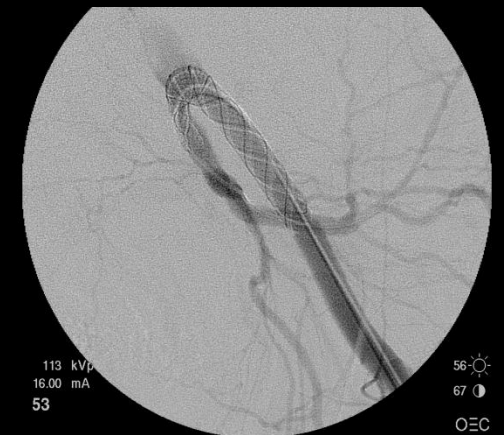
HYPOGASTRICS

IF YOU CAN

MANY TECHNIQUES FOR DOING SO

Management Options for Maintaining Hypogastric Artery (HA) Flow During EVAR or OR

- Preserve HA – Bell Bottom
- Revascularize HA
 - Reimplantation - **Open**
 - Bypass - **Open**
 - Endovascular Techniques - **BANANA ENDOGRAFT**
 - **BRANCHED GRAFTS**



**HOWEVER
SOMETIMES
ONE CANNOT
PRESERVE
HYPOGASTRICS**

DIFFICULT OR IMPOSSIBLE TO SAVE HYPOGASTRICS WITH

OBESITY – ADVERSE ANATOMY – OPEN Rs

EXTREME TORTUOSITY - EVAR

MARKED CALCIFICATION - EVAR

HYPOGASTRIC ANEURYSMS

**WHEN ONE HAS TO
OCCLUDE 1 OR BOTH
HYPOGASTRIC ARTERIES
IS IT SAFE ???**

**THE LITERATURE:
OLD LIT SAID IT WAS AWFUL**

HYPOGASTRIC ARTERY BILAT INTERRUPTION

**IN PAST – BEFORE 1990
CONSIDERED TO BE A MORBID
PROCEDURE
(EXPERIENCE WAS IN RAAAs
& PATIENTS IN SHOCK)**

COMPLICATIONS

1. BUTTOCK / PERINEAL NECROSIS
2. MAJOR NEUROLOGICAL DEFICITS
3. ISCHEMIC COLITIS & COLON NECROSIS
4. IMPOTENCE
5. CLAUDICATION

**HOWEVER
RECENT
LITERATURE...**

Hypogastric Artery Interruption During EVAR

	Bilateral HAI	Unilateral HAI	Buttock Claudication	Impotence
Razavi JVIR 2000	5	27	28%	12%
Lee JVIR 2000	4	22	26%	5%
Criado JVS 2000	11	28	13%	4%
Karch JVS 2000	2	11	18%	-
Mehta, VEITH JVS 2001	24	154	15%	13%
Wolpert JVS 2001	7	11	25%	10%
Lee JVS 2001	5	18	11%	-
Mehta, VEITH JVS 2004	56	-	14%	11%

**NO SERIOUS COLON, BUTTOCK
OR NEUROLOG ISCHEMIA**

**IS IT CONCLUSIVE
ABOUT SAFETY OF
OCCLUDING 1 OR BOTH
HYPOGASTRIC ARTERIES**

YES FOR UNI

??? FOR BILAT !

(IN VIEW OF CASE RPTS)

BILAT HYPOGASTRIC INTERRUPT REMAINS CONTROVERSIAL

**TODAY I WILL TRY TO GIVE
YOU THE FACTS**

**DURING LATE 80s I HAD
12 PATIENTS WITH AAAs &
COMPLEX ILIAC ANEURYSMS
THAT HAD OPEN REP W/ BILAT
HYPO INTERRUPTION WITH **NO**
SERIOUS CONSEQUENCES
DESPITE TERRIFYING SURGICAL
LITERATURE ON TOPIC**

**IN THE MID 90s I
ALSO HAD SEVERAL (~10)
OTHER EVAR CASES WITH
BILAT HYPOG INTERRUPT
& NO SERIOUS PROBLEMS**

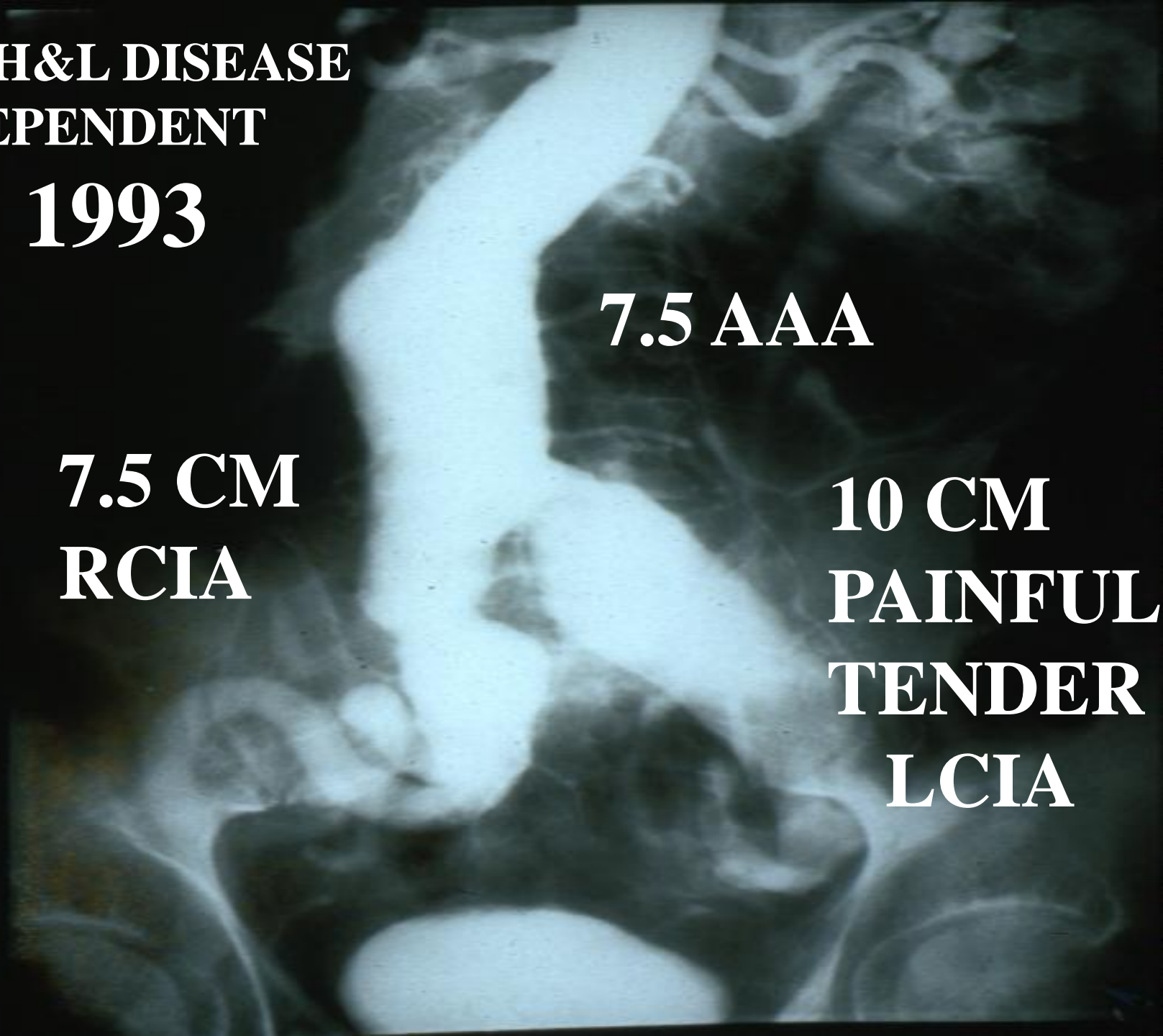
**BAD H&L DISEASE
O₂ DEPENDENT**

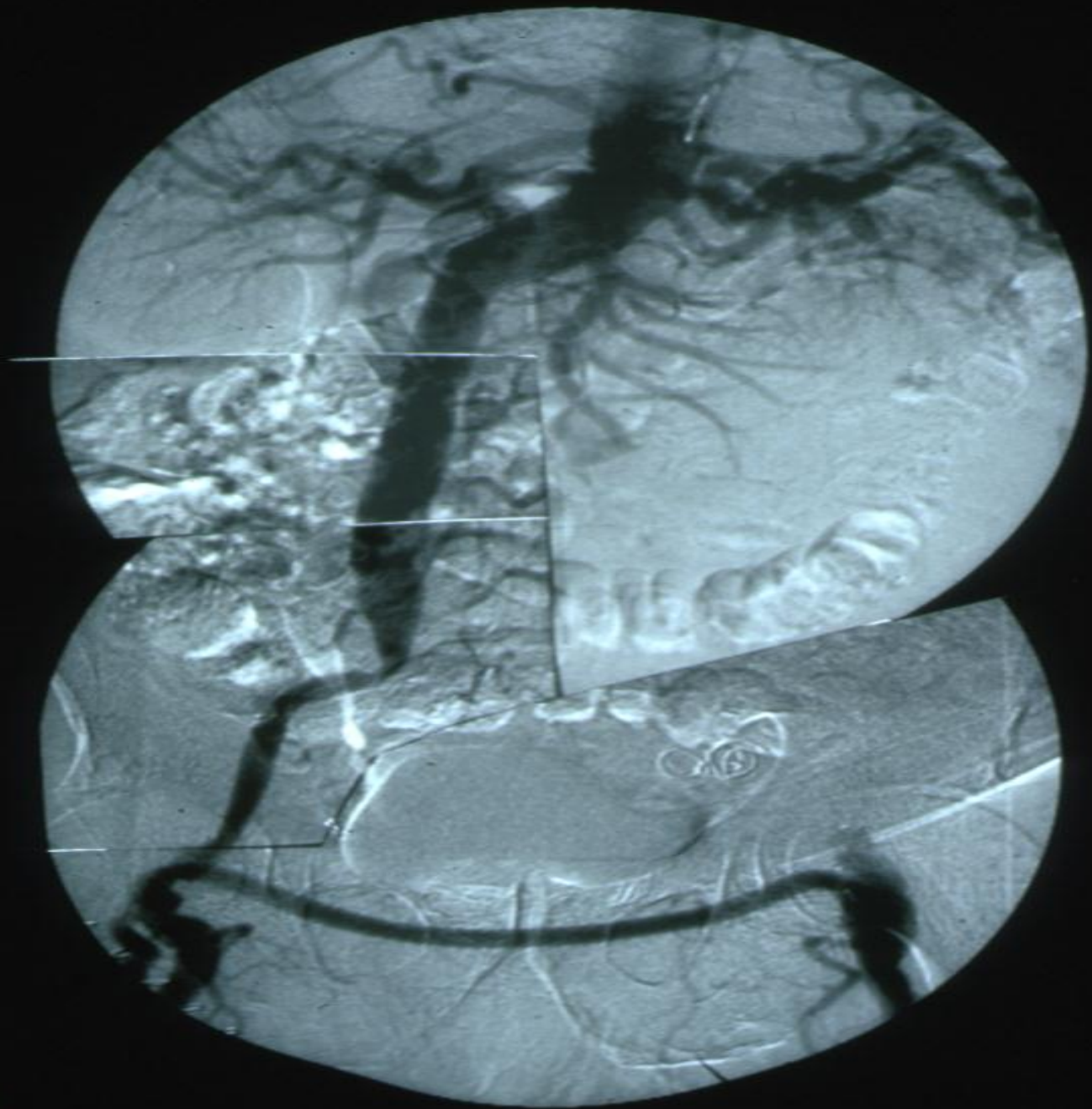
1993

7.5 AAA

**7.5 CM
RCIA**

**10 CM
PAINFUL
TENDER
LCIA**





PREOP 1993

POSTOP



1.174 TU
OV 38.0cm
NO



**LEFT HOSPITAL IN 3 DAYS
SURVIVED >3 YEARS**

OTHER EXAMPLES



CASE I – BILATERAL HI - EVAR



EVAR & BILAT HYPO COILS ALIVE & WELL AFTER 6 YRS

01 21 1992 1
0030446

Philips Medical Syst
verth f
Vascular abdon
04 24 2000 1

2
12
0411 TDC 04/2000



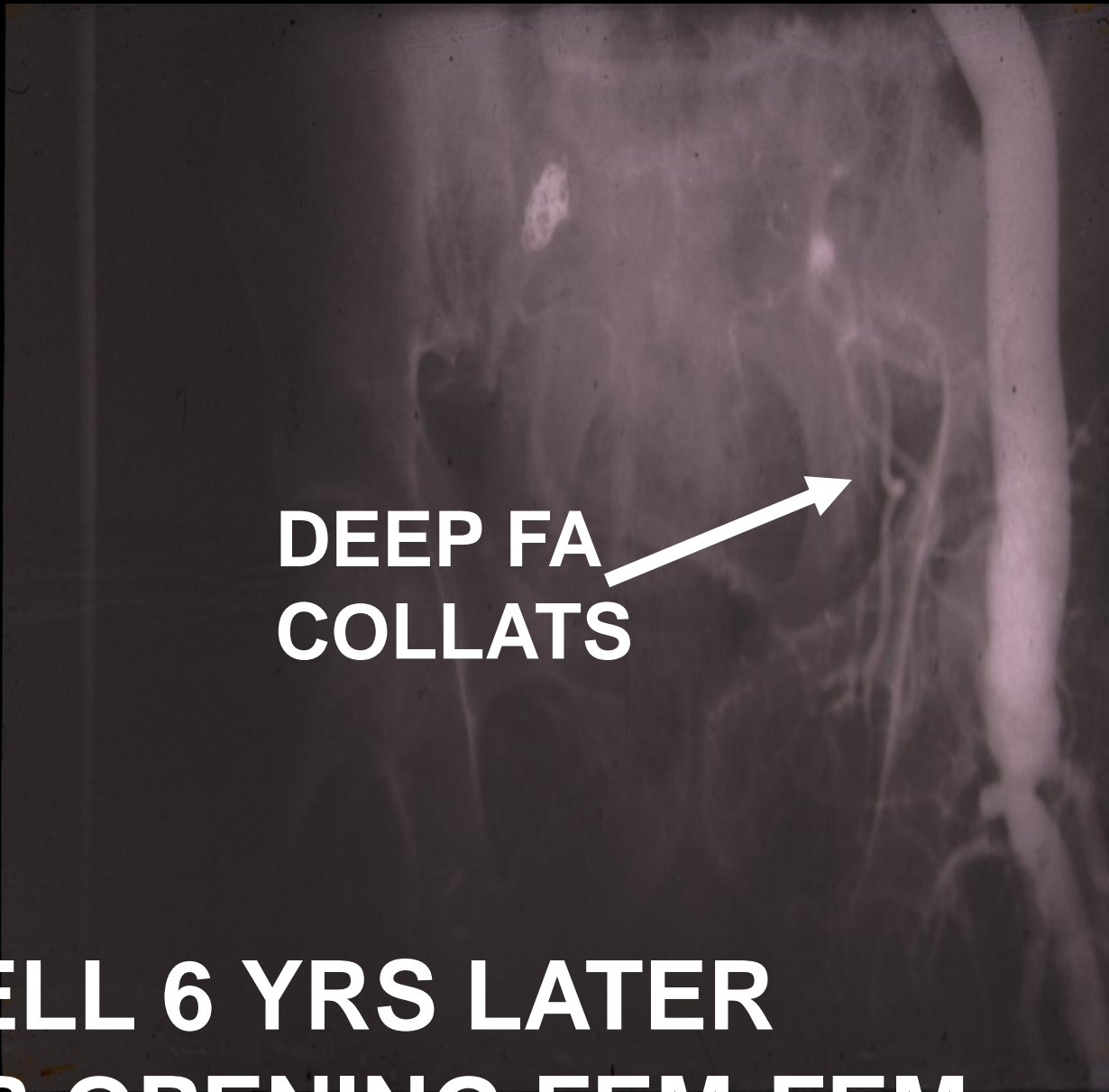
ADVERSE SURGICAL & EVAR ANATOMY - 8 CM AAA & CIAs



L GROIN

HEAD

**FIXED BY OPEN
RETROPERITONEAL REPAIR
& FEM FEM BYPASS
AFTER 2 YEARS
FEM FEM CLOSED - ANGIO**



**DEEP FA
COLLATS**



**PT WELL 6 YRS LATER
AFTER OPENING FEM-FEM**

**THESE ARE ANECDOTAL
CASES**

WHAT ABOUT CASE SERIES ?

**1992-2001: 191 PATIENTS WITH HI
MEHTA, VEITH JVS 2001, 2004**

	UNILATERAL HI (156)		BILATERAL HI (35)	
Type of Repair	Endo	Open	Endo	Open
# of Patients	116	40	18	17

NO SERIOUS ADVERSE EVENTS

**THESE 35 PATIENTS WERE
INSUFFICIENT TO CONVINC
SOME OF SAFETY OF BILAT
HYPOGASTRIC ARTERY
INTERRUPTION**

**SO IN 2008 WE COLLECTED
88 OF OUR PTS WITH BILAT
HYPOGASTRIC INTERRUPT**

**JVS - 2008: BILATERAL HI DURING
EVAR & OPEN AAA REPAIR**

**MEHTA / VEITH
EXPERIENCE TO 2008**

Type of Repair	Endovascular	Open	All Patients
No. Pts.	71	17	88

COMPLICATIONS OF BILATERAL HI

Type of Repair	Endovascular	Open	All Patients
No. Pts.	71	17	88
Buttock Necrosis	0	0	0
Ischemic Colitis	0	0	0
Neurological	0	0	0
Buttock Claudication	16%	13%	14%
Impotence	9%	18%	11%

**MANY STILL GUIDED BY THE
PRINCIPLE: MY MIND IS MADE UP
DON'T CONFUSE ME WITH FACTS**

**BILAT HYPOGASTRIC
INTERRUPT REMAINS
CONTROVERSIAL**

Multicenter Study: Bilateral Hypogastric Artery Interruption During EVAR (THRU 2010)

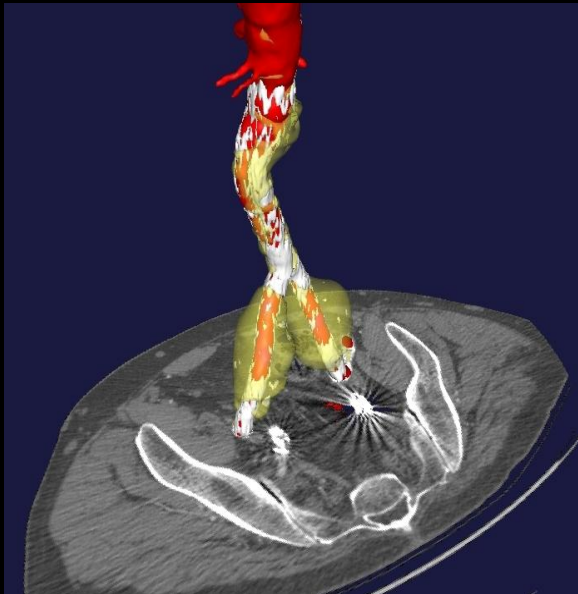
- The Vascular Institute for Health & Disease
Albany, NY - **MEHTA**

- Montefiore Medical Center
Bronx, NY - **VEITH**

- Union Memorial Hospital
Baltimore, MD - **CRIADO**

- Nuremberg Southern Hospital
Nuremberg, Germany – **RAITHEL, RITTER**

- New York Univ - **CAYNE, BERLAND,
VEITH**



**THRU 2010 – BILAT HI
DURING EVAR & OPEN
REPAIR OF AAAs
VEITH, MEHTA, CRIADO
CAYNE, RAITHEL, RITTER**

Type of Repair	Endovascular	Open	All Patients
No. Pts.	137	19	156

**156 PATIENTS
WITH BILAT HI
NO (0) SERIOUS
COMPLICATIONS**

13% BUTTOCK CLAUDIC

IMPORTANT FACTS I

**PRESERVING HYPOGASTRICS
CAN BE TECHNICALLY DIFFICULT
OR IMPOSSIBLE**

- 1. OBESE PATIENTS**
- 2. CALCIFIED ILIAC ARTERIES**
- 3. TORTUOUS ILIAC ARTERIES**
- 4. HYPOGASTRIC ANEURYSMS**

IMPORTANT FACTS II

EMBOLIZATION AND SHOCK ARE MAJOR

**CAUSES OF COLONIC ISCHEMIA
(PROVEN BY PATHOLOGY)**

Dadian, Veith JVS 2001

PELVIC ORGANS HAVE MAJOR COLLATERAL

SUPPLY FROM THE DEEP FEMORAL ARTERIES

IMPORTANT FACTS III

EXCEPTIONS TO SAFETY

HYPOGASTRICS – AT LEAST ONE MUST BE PRESERVED IN PATIENTS WITH:

- SMA & CELIAC OCCL DISEASE
- DEEP FEMORAL OCCL DISEASE
- **REQUIRING TEVAR – SCI A RISK**
- COLON OR PELVIC SURGERY WITH INTERRUPTION OF COLLATERALS

CONCLUSIONS I

**SIGNIFICANT BUTTOCK CLAUDICATION
CAN OCCUR IN 11 - 15% OF PATIENTS**

**THUS, EVEN THOUGH SAFE,
HYPOGASTRIC ARTERY INTERRUPTION
SHOULD ONLY BE PERFORMED WHEN
NO OTHER GOOD **EASY** OPTION EXISTS**

CONCLUSION II

SEVERE PELVIC ISCHEMIA FROM

BILATERAL HYPO OCCL IS

VERY RARE & POTENTIATED BY

EMBOLIZATION AND SHOCK

CONCLUSIONS III

WHEN IT IS UNAVOIDABLE
DURING ENDOVASCULAR AAA
& ILIAC ANEURYSM REPAIR
UNILAT & **BILATERAL** HYPOG ART
OCCLUSION IS SAFE



