Contrôle Écho Doppler des angioplasties et des pontages artériels

JP Laroche

Unité de Médecine Vasculaire

CHU Montpellier (Pr. Isabelle Quéré)

Faculté de Médecine
Montpellier - F

CHRU MONTPELLIER
CENTRE HOSPITALIER REGIONAL UNIVERSITAIRE

Contrôle Écho Doppler des angioplasties et des pontages artériels

JP Laroche

Unité de Médecine Vasculaire

CHU Montpellier (Pr. Isabelle Quéré)

1ère Partie

Faculté de Médecine
Montpellier - F

CHRU MONTPELLIER
CENTRE HOSPITALIER REGIONAL UNIVERSITAIRE

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association®
Learn and Live℠

ACC/AHA 2005 practice Guidelines for the Management of Patients With Peripheral Arterial Disease (Lower Extremity, Renal, Mesenteric, and Abdominal Aortic)

Circulation 2006;113;1474-1547
DOI: 10.1161/CIRCULATIONAHA.106.173994
Circulation is published by the American Heart Association. 7272 Greenville Avenue, Dallas, TX 72514
 Print ISSN: 0009-7322. Online ISSN: 1524-4539

MISES AU POINT

SURVEILLANCE CLINIQUE ET ÉCHOGRAPHIQUE DES PONTAGES VEINEUX FÉMORO-POPLITÉS DES MEMBRES INFÉRIEURS

M. RIGHINI (1), I. QUÉRÉ (2), C. JANBON (2), J.P. LAROCHE (2)

(1) Division d'Angiologie et d'Hémostase, Hôpitaux Universitaires de Genève, Suisse.
(2) Service de Médecine Vasculaire, Médecine B, Hôpital Saint Eloi, Montpellier, France.

Journal des Maladies Vasculaires
Juin 2003

Journal des Maladies Vasculaires (Paris)
© Masson, 2004, 29, 2, 63-72

MISES AU POINT

PRISE EN CHARGE DES FAUX ANÉVRISMES ARTÉRIELS POST-CATHÉTÉRISME

M. RIGHINI (1), I. QUÉRÉ (2), J.P. LAROCHE (2)

(1) Division d'Angiologie et d'Hémostase, Hôpitaux Universitaires de Genève, Suisse
(2) Service de Médecine Vasculaire, Médecine B, Hôpital Saint-Eloi, Montpellier, France.

Modele +
JMV-269; No. of Pages 14

ARTICLE IN PRESS

Journal des Maladies Vasculaires (2011) xxx, xxx–xxx

Disponible en ligne sur
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com

MISE AU POINT

Le rôle de l'échographie-Doppler dans la surveillance après chirurgie artérielle des artères des membres inférieurs, de l'aorte et des artères carotides

Role of duplex ultrasound for lower limb artery, abdominal aorta, and carotid artery surgery follow-up

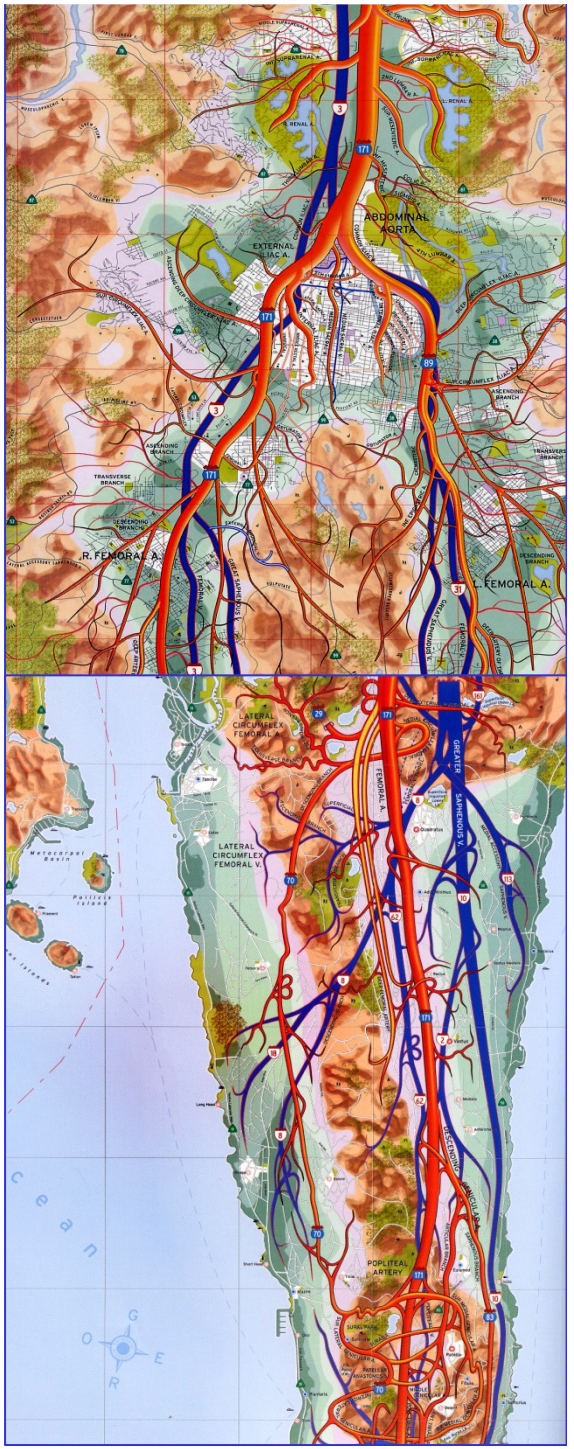
G. Böge[a,b,c], J.-P. Laroche[a,*], P. Alric[c], C. Rouden[d], I. Quéré[a], M. Dauzat[b]

[a] *Service de médecine interne et maladies vasculaires, hôpital universitaire de Montpellier, Saint-Eloi, 80, avenue Augustin-Fliche, 34295 Montpellier, France*
[b] *Exploration et médecine vasculaire, hôpital universitaire Carémeau, place du Pr-Robert-Debré, 30029 Nîmes cedex, France*
[c] *Service de chirurgie thoracique et vasculaire, hôpital universitaire de Montpellier, Arnaud-de-Villeneuve, 371, avenue du Doyen-Giraud, 34295 Montpellier, France*
[d] *Gefäss-, Thorax- und Transplantations chirurgie, Kantonsspital St. Gallen, Rorschacherstrasse 95, 9007 St. Gallen, Suisse*

Reçu le 6 octobre 2010 ; accepté le 3 février 2011

Plan

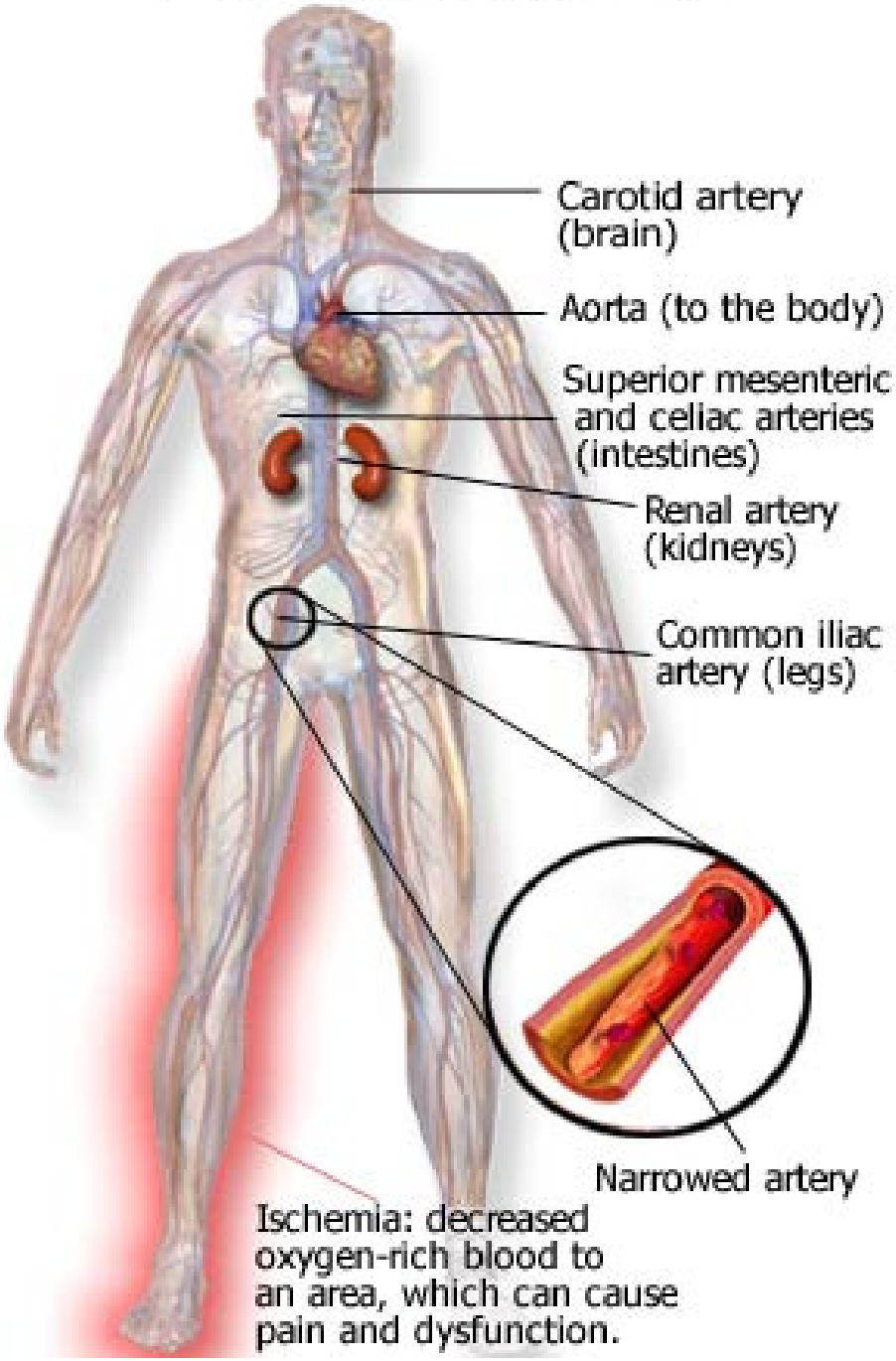
- Angioplastie
- Pontage prothétique sus inguinal
- Pontage veineux sous inguinal
- Pontage prothétique sous inguinal

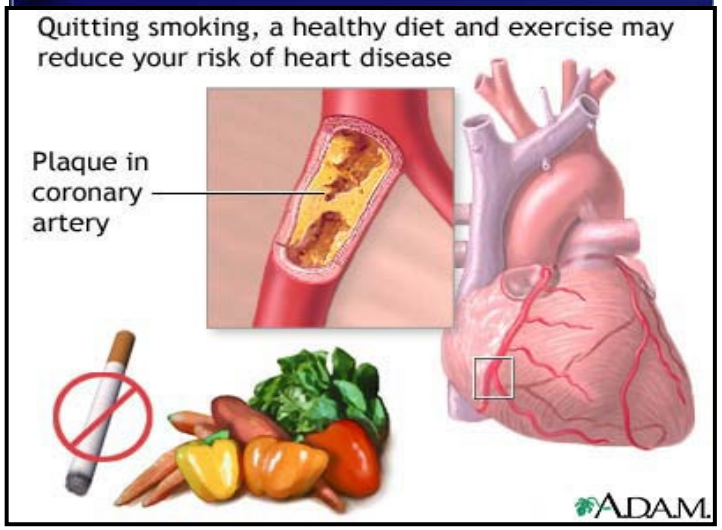


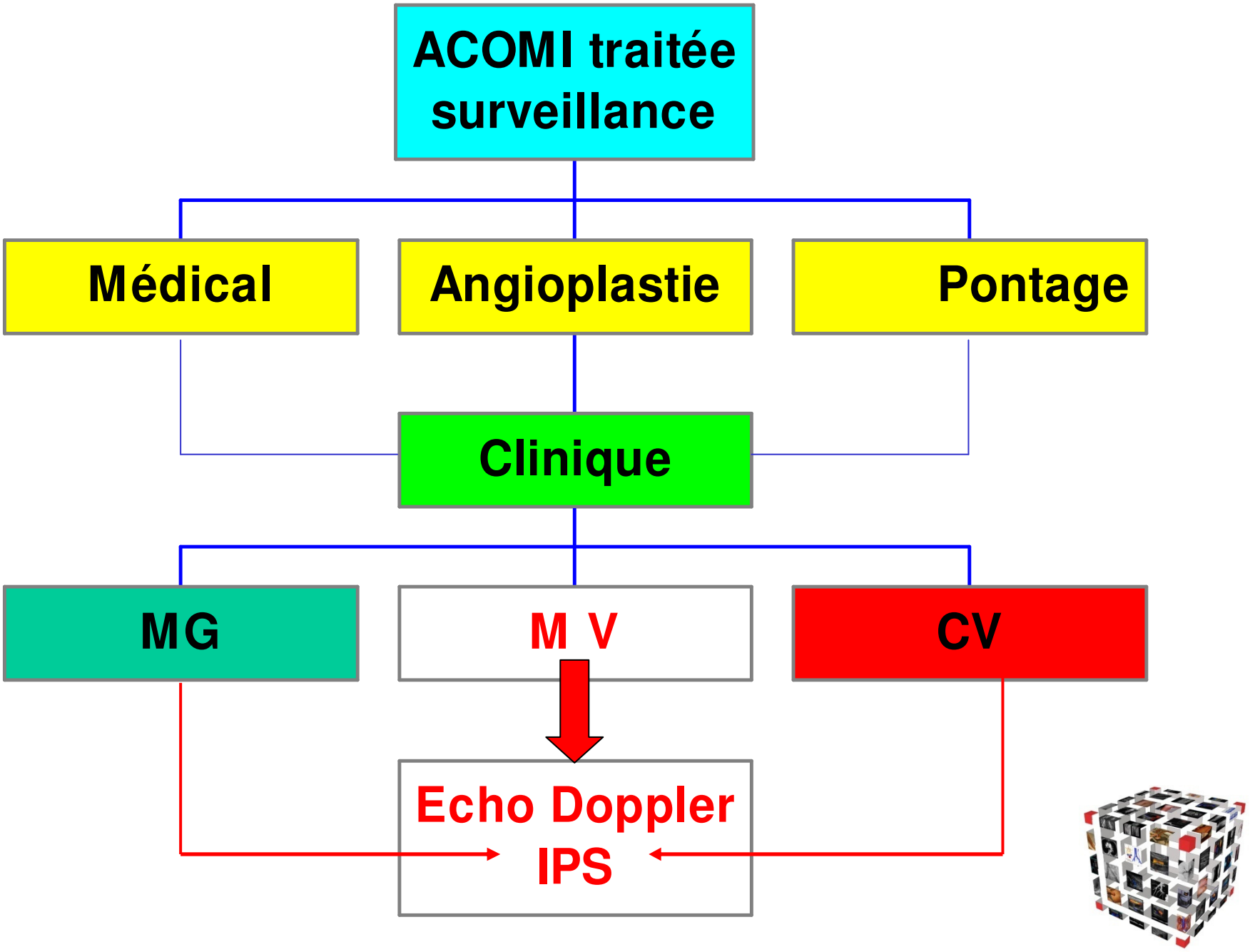
Le médecin vasculaire et l'ACOMI traitée

- **Suivi clinique du patient +++++ :**
  - Examen **clinique (IPS)**, interrogatoire …
  - Contrôle facteurs de risque …
  - Recherche aggravation…
  - Compliance au traitement…
- **Suivi hémodynamique et anatomique : Écho Doppler**
  - Contrôle perméabilité…
  - Rechercher **éléments prédictifs de complications**
  - Contrôle autres territoires si nécessaire
- **Une règle absolue : disposer des CR opératoires +++++**

Peripheral Arterial Disease



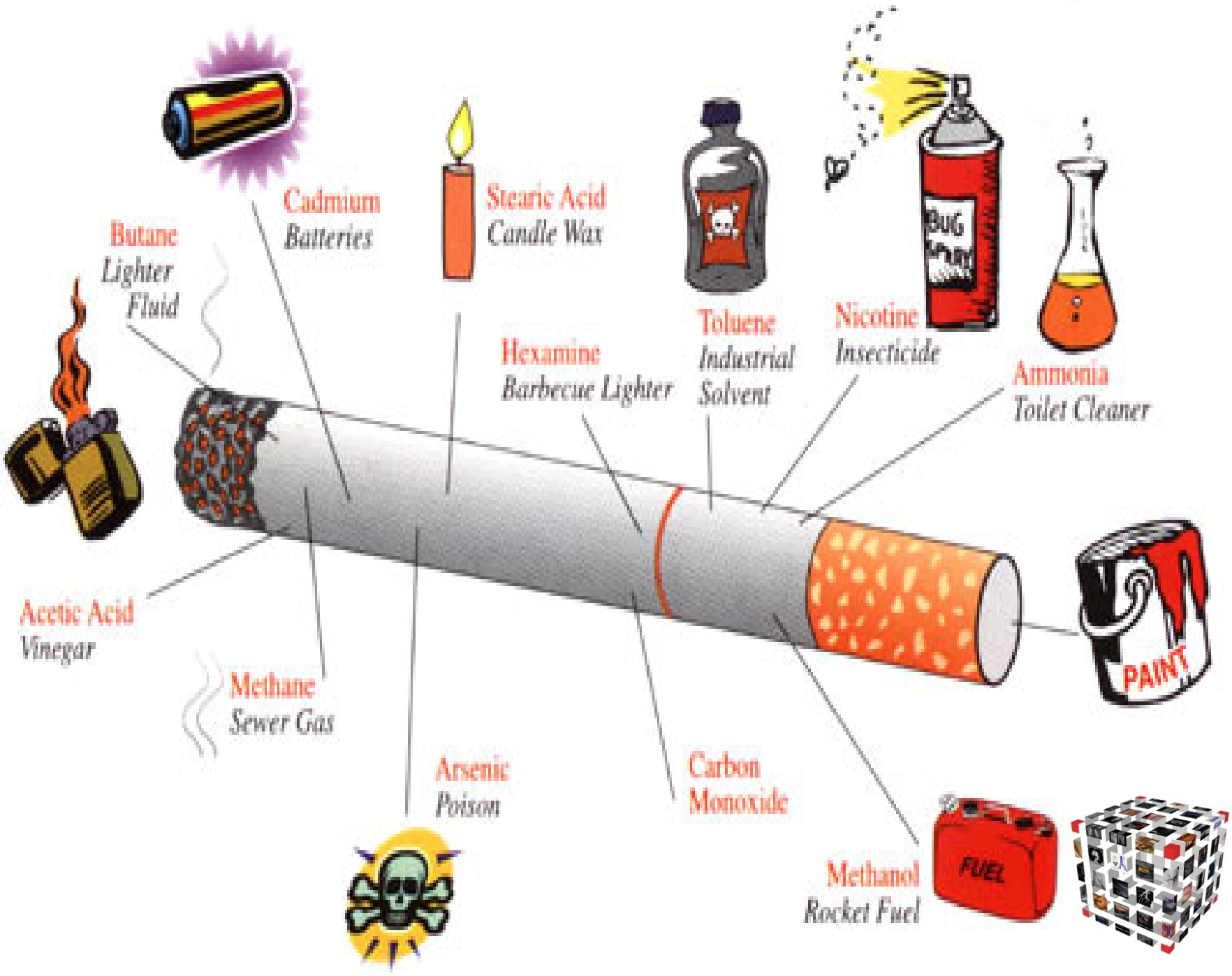



ACOMI traitée surveillance
Médical
Angioplastie
Pontage
Clinique
MG
M V
CV
Echo Doppler IPS

"Relax, Mr. Wilde, it's just a simple prostate examination!"

La clinique

++++

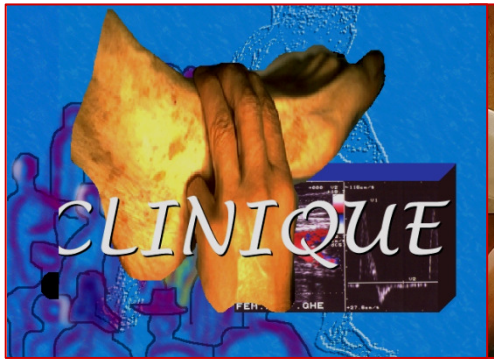

Butane
Lighter Fluid
Cadmium
Batteries
Stearic Acid
Candle Wax
Hexamine
Barbecue Lighter
Toluene
Industrial Solvent
Nicotine
Insecticide
Ammonia
Toilet Cleaner
Acetic Acid
Vinegar
Methane
Sewer Gas
Arsenic
Poison
Carbon
Monoxide
Methanol
Rocket Fuel
BUG
FUEL
PAINT

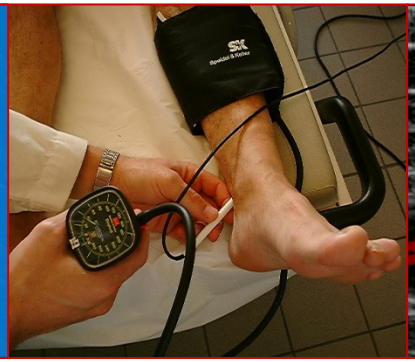
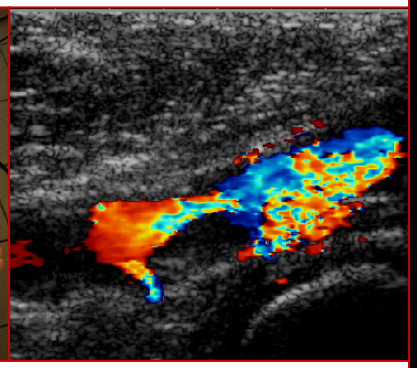
Écho Doppler : matériel

- Sondes de haute et basse fréquence ++++ (7 Mhz / 3 Mhz).
- Doppler couleur (repérage sténose +++) et placement Doppler pulsé
- Doppler puissance (++++)
- Brassard à tension
- Sonde Doppler continu (?)
- Tapis roulant (?)
- Pression gros orteil (SYSTOE)
- TCPO2

Surveillance : moyens

- Clinique
- Index de Pression à la cheville
- Écho Doppler
- Angio IRM / Angio Scanner



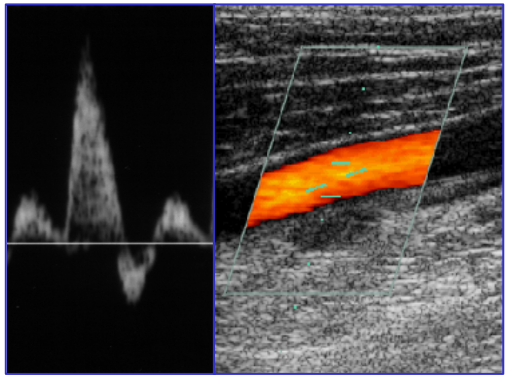
ACOMI et traitement médical
Absence de revascularisation

➢ **Clinique**

Interrogatoire

Pouls

Autres territoires



➢ **Écho Doppler**

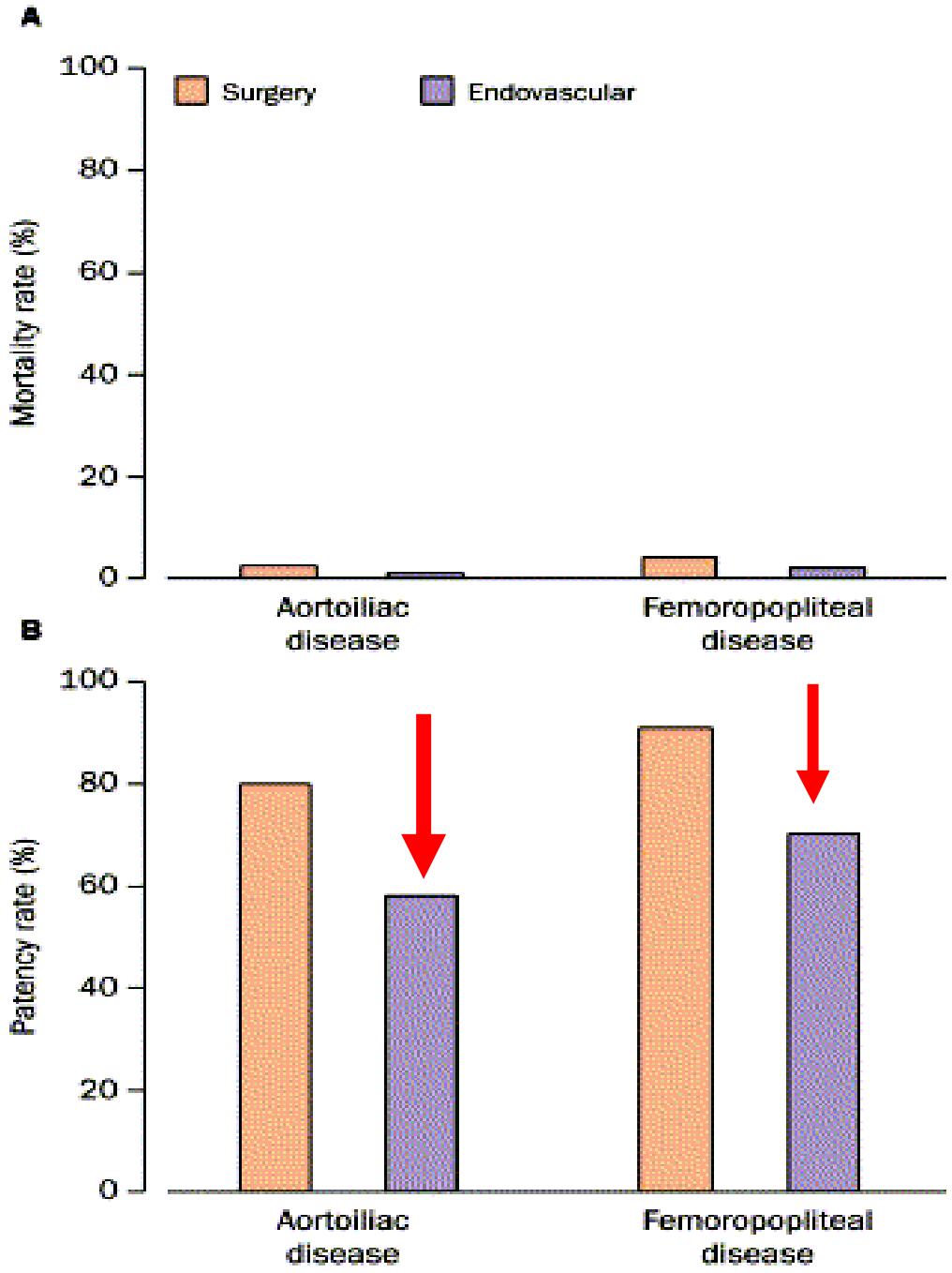
Examen complet de l'arbre artériel des MI, avec étude attentive des sites lésés connus

Autres localisations

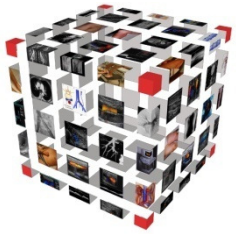
IPS

Concordance

Rythme : M6/M12…



Periprocedural mortality rate



3 years patency rate in patients undergoing percutaneous angioplasty/stenting or surgical revascularisation.

Follow up is necessary
PAD is a chronic disease

Ouriel K, Lancet 2001

Operative mortality and primary graft patency rates after surgery

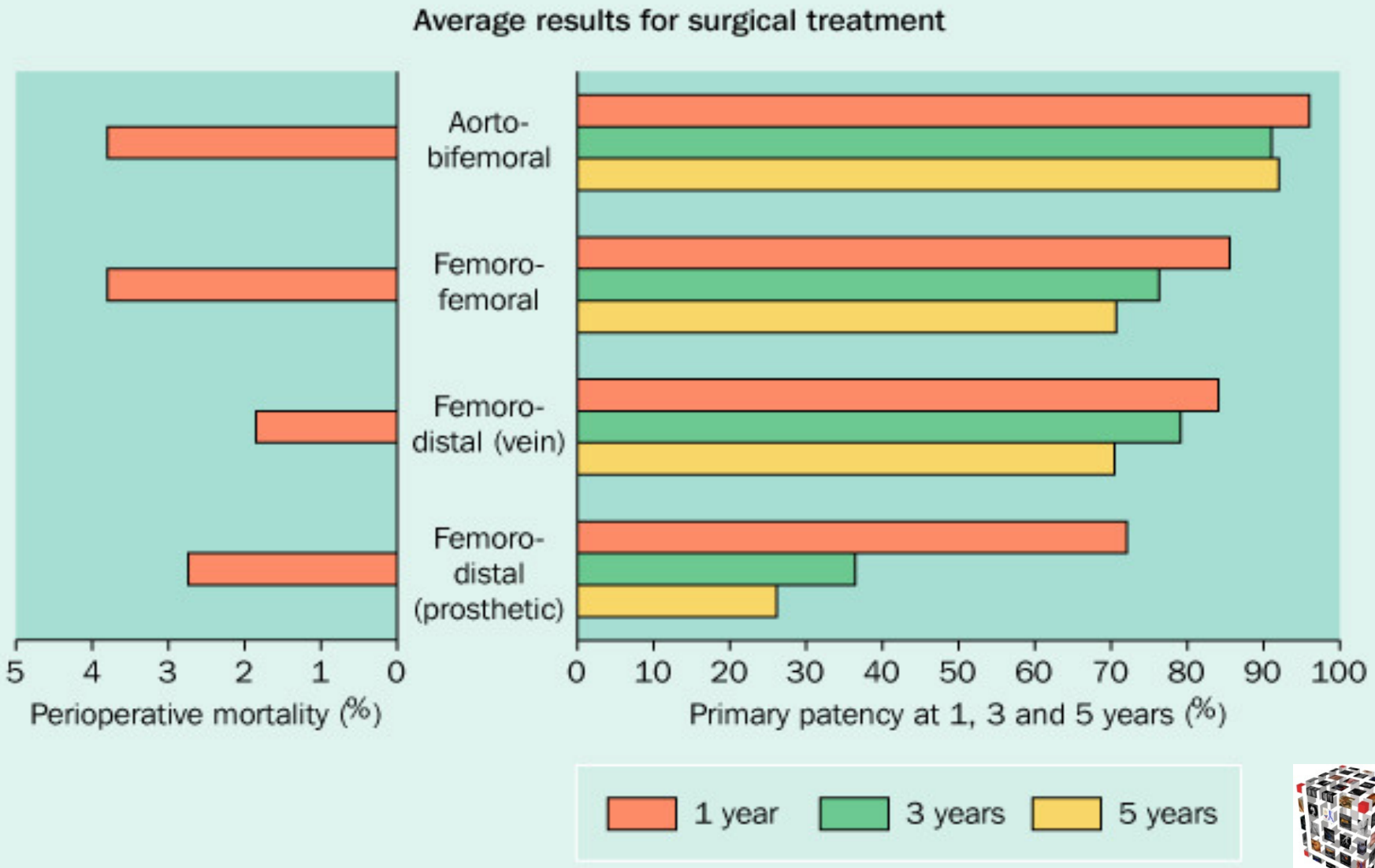


Table 19. Vascular Surgical Procedures for Inflow Improvement

Inflow Procedure	Operative Mortality (%)	Expected Patency Rates (%)	References
Aortobifemoral bypass	3.3	87.5 (5 yrs)	(93)
Aortoiliac or aortofemoral bypass	1–2	85–90 (5 yrs)	(94–96)
Iliac endarterectomy	0	79–90 (5 yrs)	(97–99)
Femorofemoral bypass	6	71 (5 yrs)	(100)
Axillofemoral bypass	6	49–80 (3 yrs)	(101,102)
Axillofemoral-femoral bypass	4.9	63–67.7 (5 yrs)	(103,104)

Recommandations AHA 2005
Circulation 2006

Situation du Médecin Vasculaire	Décideur
Surveillance clinique	+++
Écho-Doppler	+++
Contrôle des facteurs de risque	+++
Éducation continue du patient	+++
Date du bilan suivant	+++
Décision éventuelle	+++

Le Médecin Vasculaire et le dépistage des complications.

D. Mellière [(1)], JMV 1999

TASK Recommandations

- **<u>Recommandation 19</u>** : ***success of treatment for intermittent claudication. Ideally success of treatment for intermittent claudication should take into account an improvement in the following :***

. **Objective outcome :** relevant improvement in walking distance as measured by a standardized exercise test.

. **Symptomatic outcome** : improvementon a validated disease-specific health statue questionnaire.

. **General quality of life** : improvement on a validated generic health statue questionnaire.

. **Postrevascularization** : objective proof of patency of any revascularized segment (ideally with imaging).

The clinical result of any intervention for intermittent claudication should be documented through postprocedural ABI and imaging studies that detail the area of intervention (+++).

TASC II, International Angiology, 2008

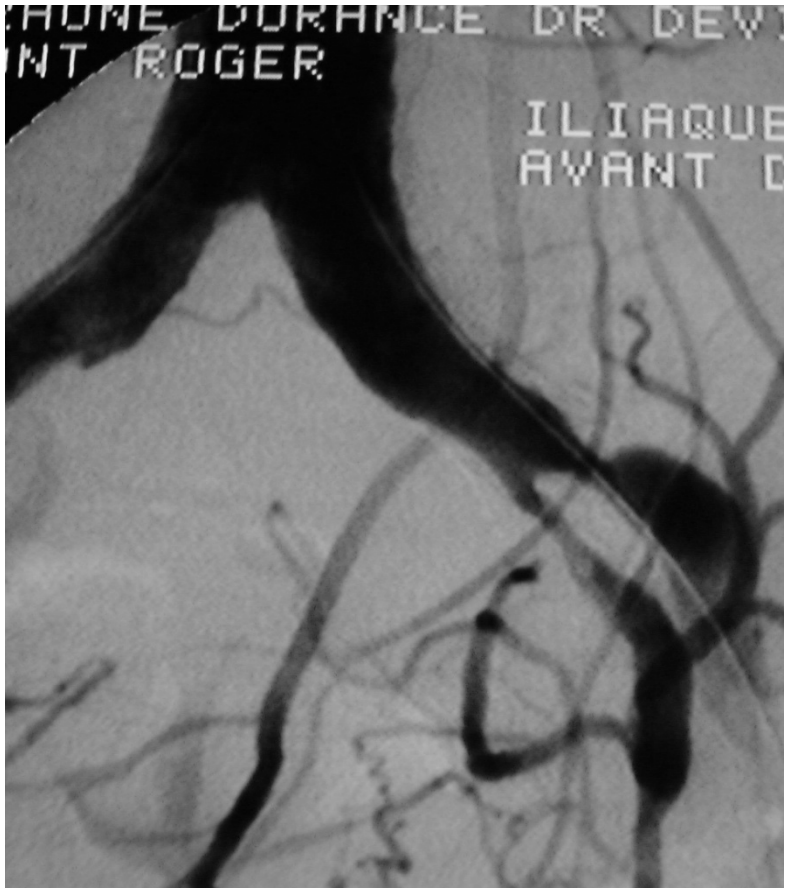
- ***To achieve good long term efficacy, a close follow up of treating PAD include objective tests of both the arterial lesion and hemodynamic status , surveillance of secondary preventive measures, and risk factor control is mandatory.***

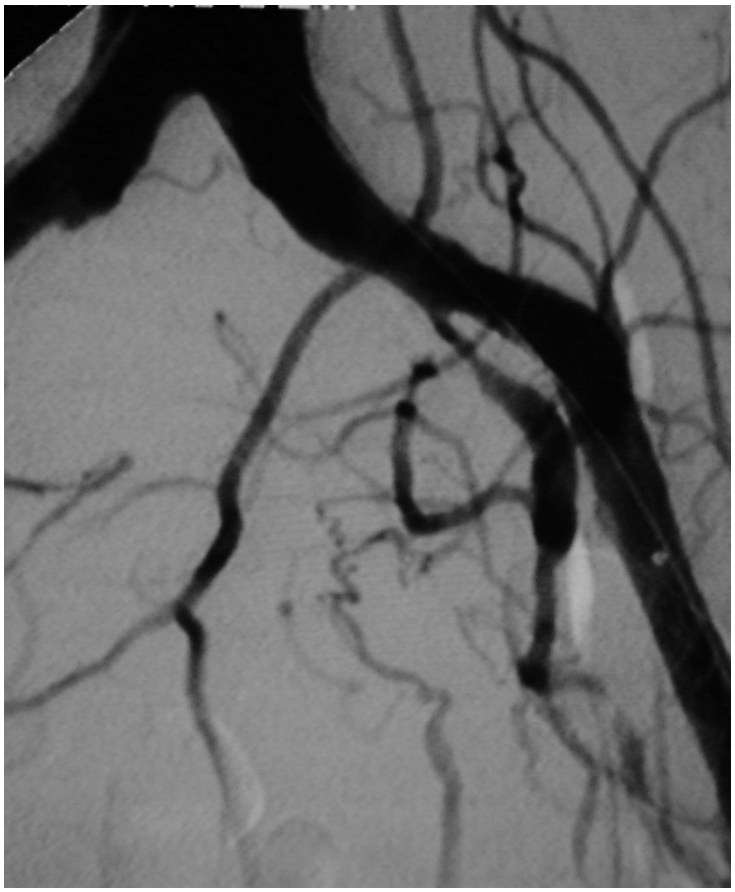
Kugler CFA, Vascular Medicine 2003


Dare to be Mo
20 CLASS A CIGARETTES
More
CIGARETTES


Now for the truth about who's lowest.
7 mg
5 mg
2 mg
5 mg
5 mg
KENT
Clearly the lowest.
NOW
THE LOWEST

Angioplasties artérielles périphériques


ROGER
ILIAQUE
AVANT



ACOMI et angioplastie

- **Clinique**

Interrogatoire

Pouls

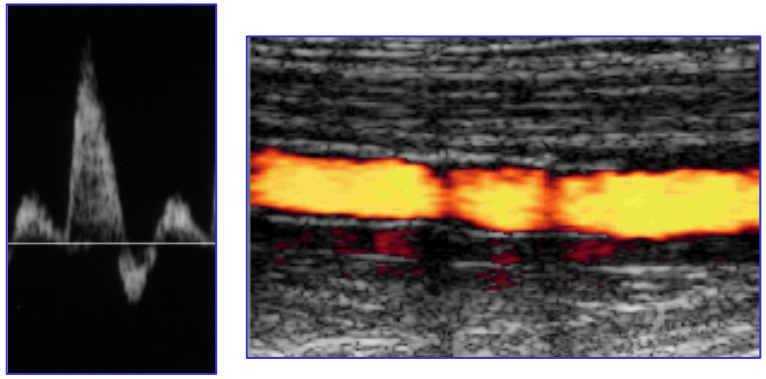
Autres territoires

- **Écho Doppler (ED)**

Examen complet de l'arbre artériel des MI, avec étude attentive des sites d'angioplastie (stent)

Autres localisations

IPS

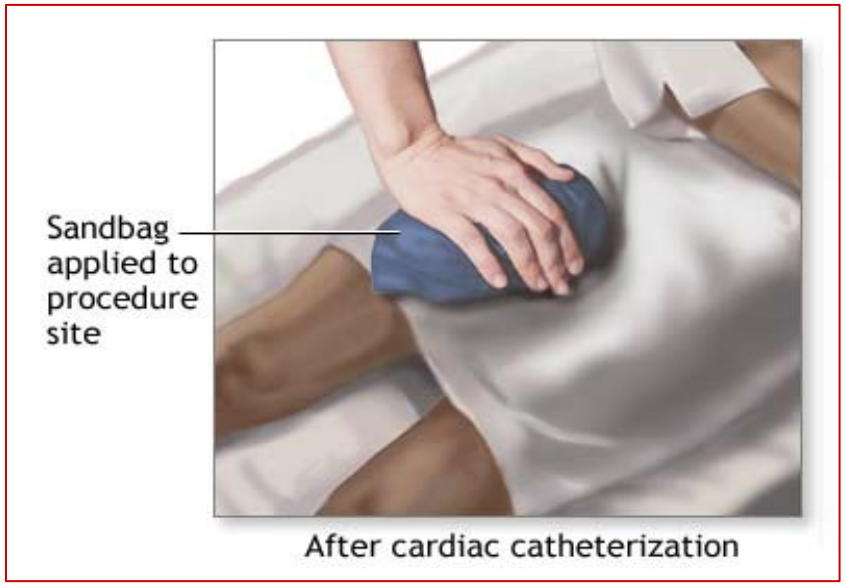


Concordance

Rythme : J1/M3/M12…

ACOMI et Angioplastie : ED

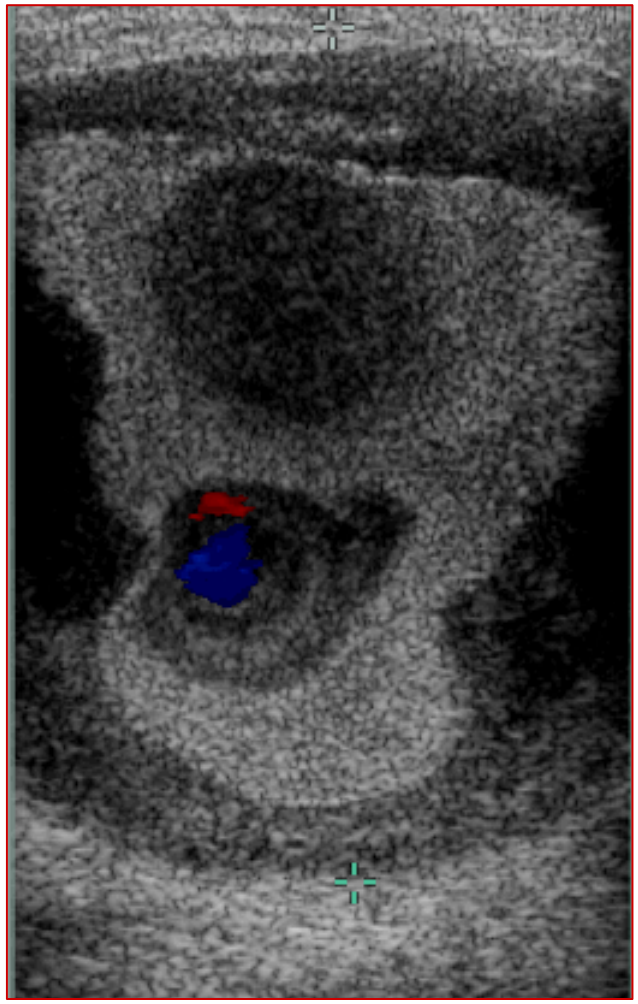
- **Complications**
  - * **Point de ponction**
    - **Hématome : 3%**
    - **Faux anévrisme : 0,5%**
    - **FAV : 0,1%**
    - **Occlusion : 0,5%**
    - **Embolisations distales : 0,5%**



Vascular and Endovascular surgery, Ed Saunders, 2001

ACOMI et Angioplastie : ED

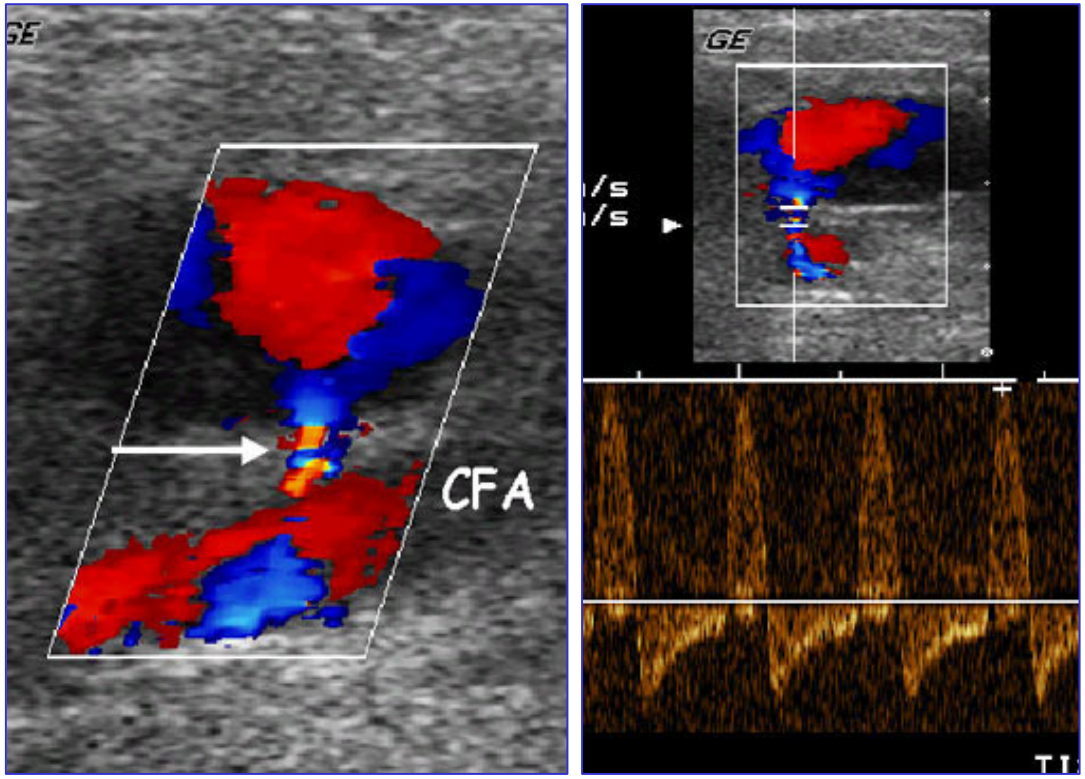
- **Contrôle à J1 :**
  - *** Point de ponction**
  - **- Hématome**
  - ***- Faux anévrisme***
  - **- FAV**
  - **- Dissection**
  - **- Occlusion**



Fémorale commune post angioplastie Fémorale superficielle

ACOMI et Angioplastie : ED

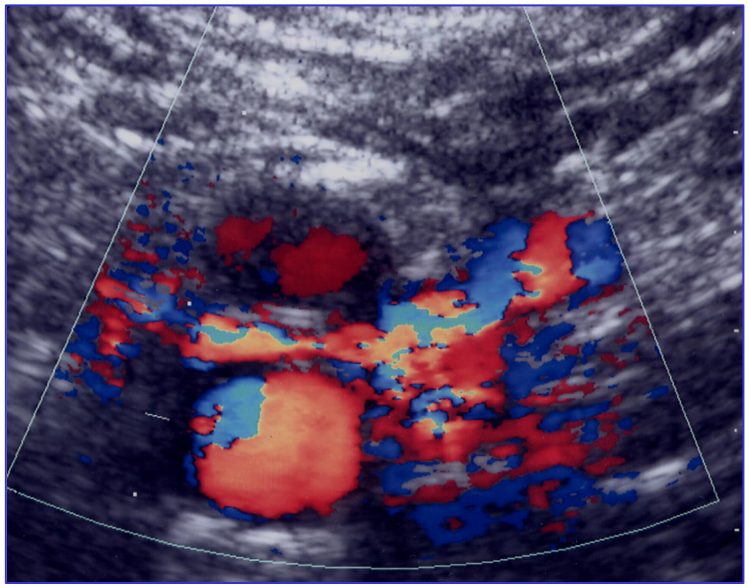
- **Contrôle à J1 :**
  - *** Point de ponction**
  - **- Hématome**
  - ***- Faux anévrisme***
  - **- FAV**
  - **- Dissection**
  - **- Occlusion**

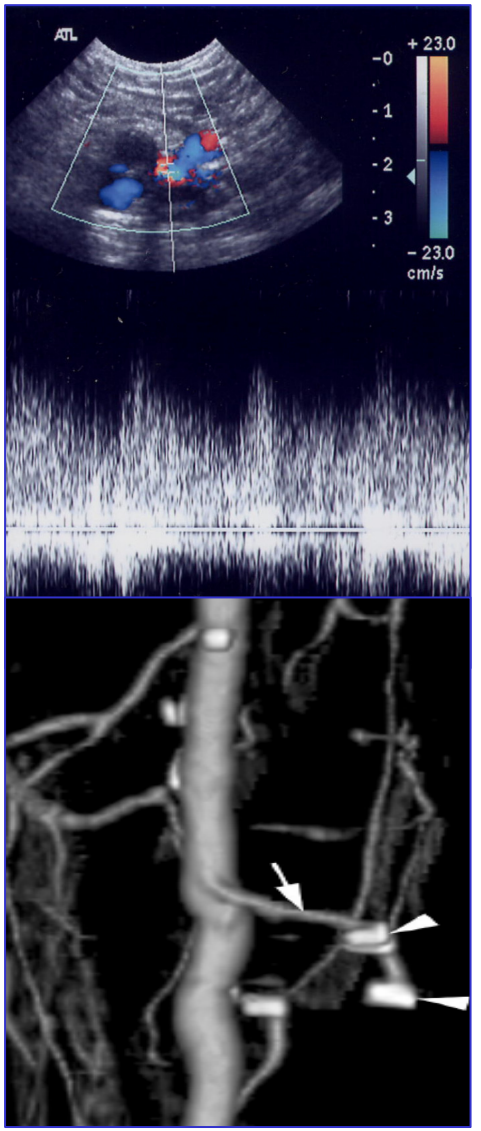


Fémorale commune post angioplastie iliaque

ACOMI et Angioplastie : ED

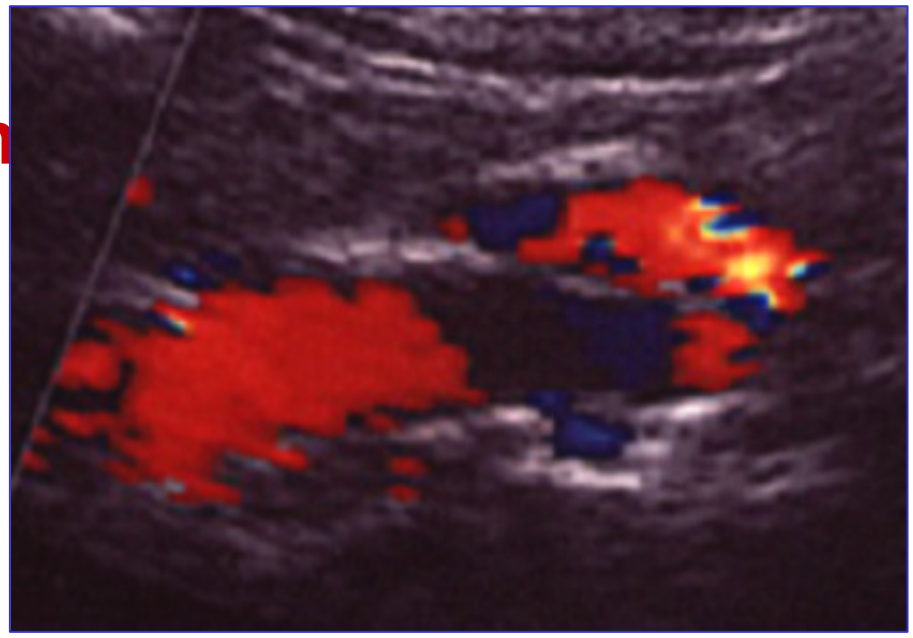
- **Contrôle à J1 :**
  - *** Point de ponction**
  - **- Hématome**
  - **- Faux anévrisme**
  - ***- FAV***
  - **- Dissection**
  - **- Occlusion**





ACOMI et Angioplastie : ED

- **Contrôle à J1 :**
  - *** Point de ponction**
  - **- Hématome**
  - **- Faux anévrisme**
  - **- FAV**
  - **- *Dissection***
  - **- Occlusion**



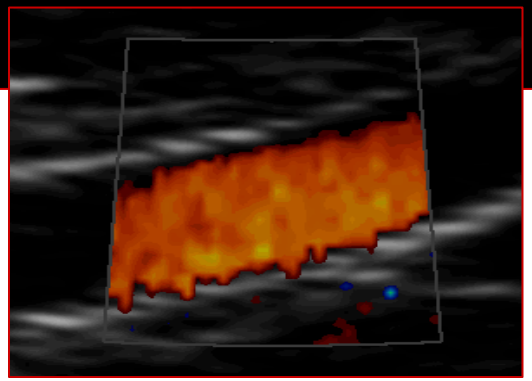
ACOMI et angioplastie : ED

- **Littérature**

  Nyamekye (EJVES 1996)
  ***ED**, IPS repos/effort*
  Radak (1998)
  ED**, réduction **IPS
  Spijkerboer (JVS 1996)
  ED
  Mewissen (J Vasc Surg. 1992)
  ED (RV>2,5)
  Tielbeek (EJVES 1996)
  ***ED (RV > 2,5)**, IPS*

- **Démarche consensuelle**

  Contrôle : J1, M3 ou M6, M12 puis 1 fois/an.
  Étude aspect anatomique du segment dilaté (plaque), position stent.
  Étude hémodynamique avec **mesure VSM, RV et IPS**
  RV > 2, 5 = sténose significative prédictive récidive clinique



Type de stent, longueur, difficulté de mise en place

Table 12. Surveillance Program for Aortoiliac and Infrainguinal Transluminal Angioplasty

Patients undergoing aortoiliac and infrainguinal transluminal angioplasty for lower extremity revascularization should be entered into a surveillance program, which consists of:

- Interval history (new symptoms)
- Vascular examination of the leg with palpation of proximal and outflow vessel pulses
- Resting and, if possible, postexercise ABI recording

Surveillance programs should be performed in the immediate post-PTA period and at intervals for at least 2 years

Adapted from J Vasc Surg, 31, Dormandy JA, Rutherford RB, for the TransAtlantic Inter-Society Consensus (TASC) Working Group, Management of peripheral arterial disease (PAD), S1–S296, Copyright 2000, with permission from Elsevier (16).

ABI = ankle-brachial index; PTA = percutaneous transluminal angioplasty.

Recommandations AHA 2005
Circulation 2006

< 50%	45 < VSM < 150 1,5 < RV < 2
> 50 %	VSM > 200, 250 2 < RV < 2,5
> 7O %	VSM > 350, 400 3,5 < RV < 4
Occlusion	No signal

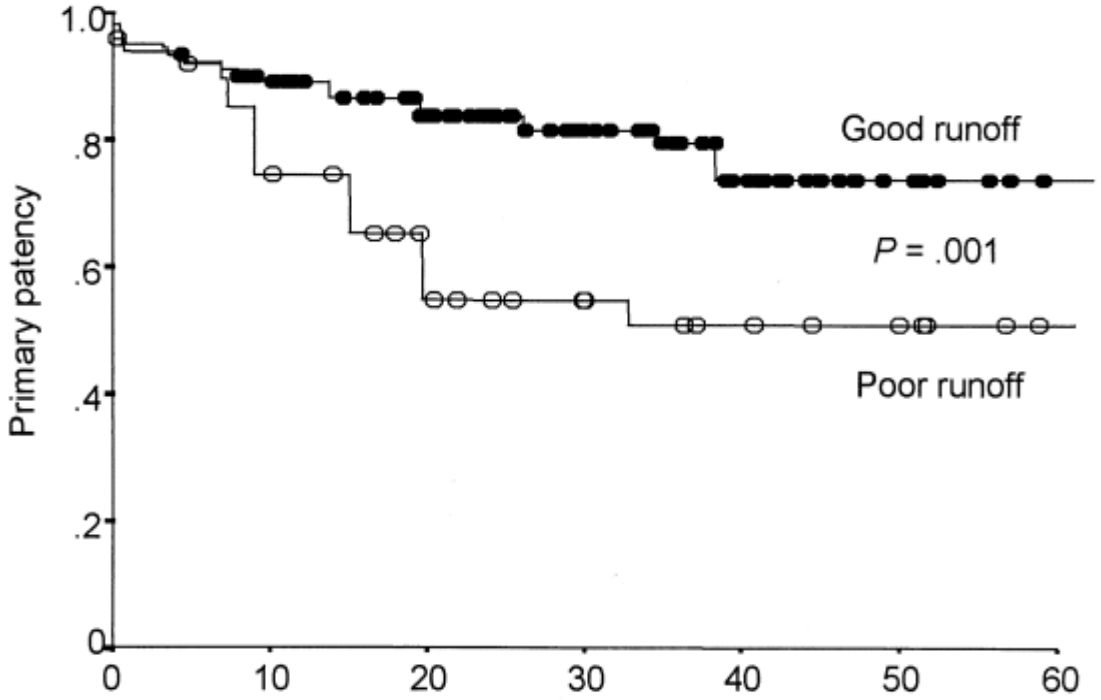
X2

X3

VSM : cm/sec, RV
VSM Sténose / VSM aval

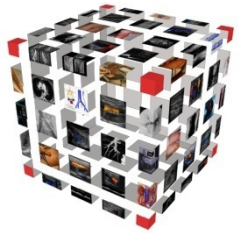
ANAES, Juin 2002

Poor runoff was the only risk factor identified at univariate analysis that affected significantly both stent and bypass graft primary patency rates. (Kaplan-Meier method, log-rank test; *P* = .001).

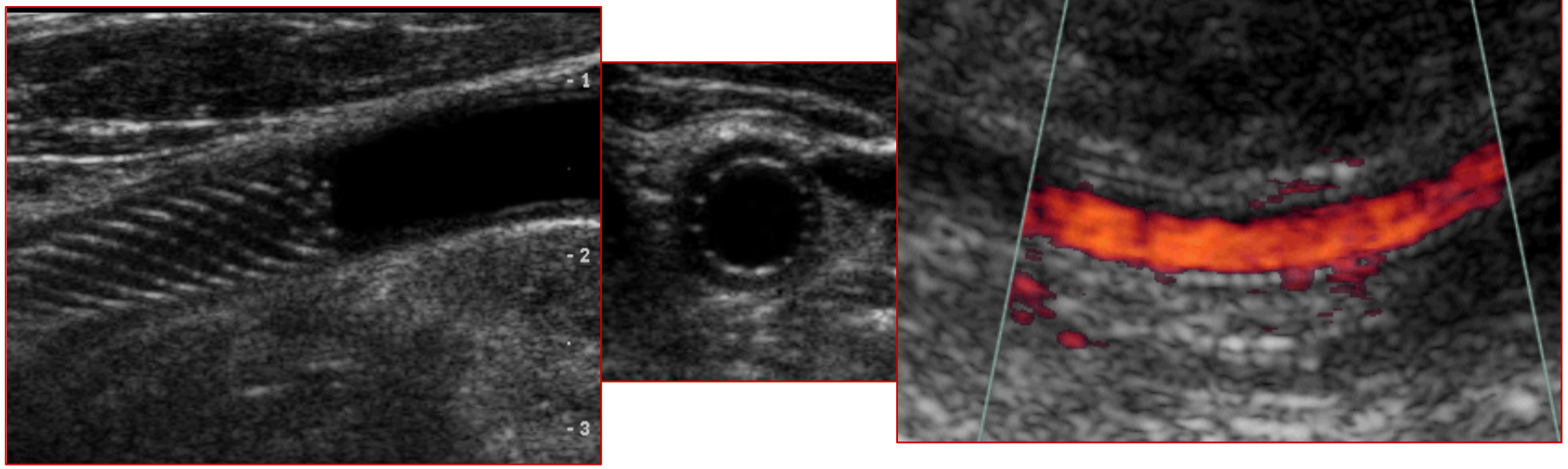


Good runoff							
At risk	186	158	135	109	58	18	9
S.E.	.000	.023	.027	.029	.039	.039	.039
Poor runoff							
At risk	52	37	26	20	12	8	2
S.E.	.000	.054	.064	.076	.080	.080	.080

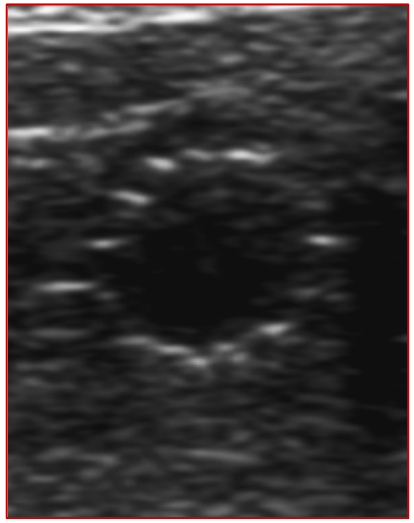
Iliac Angioplasty follow up : Complete examination with Duplex.

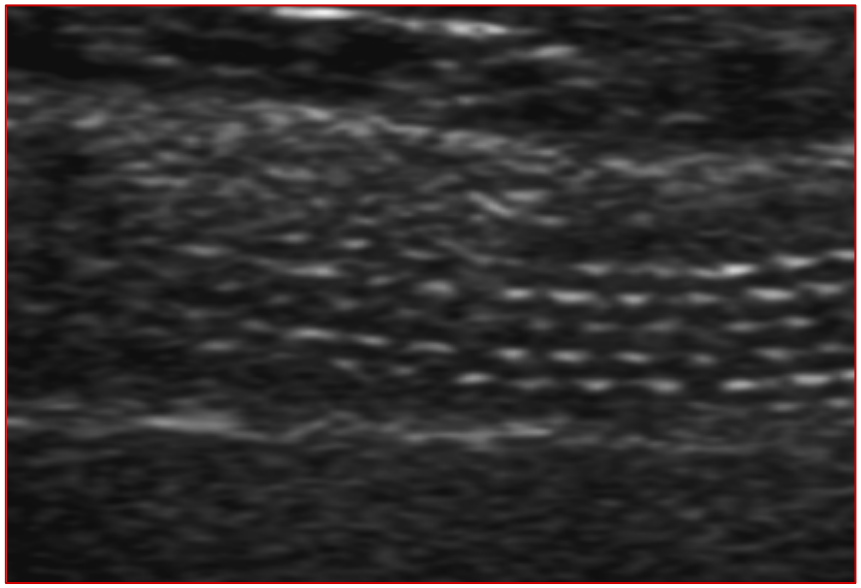


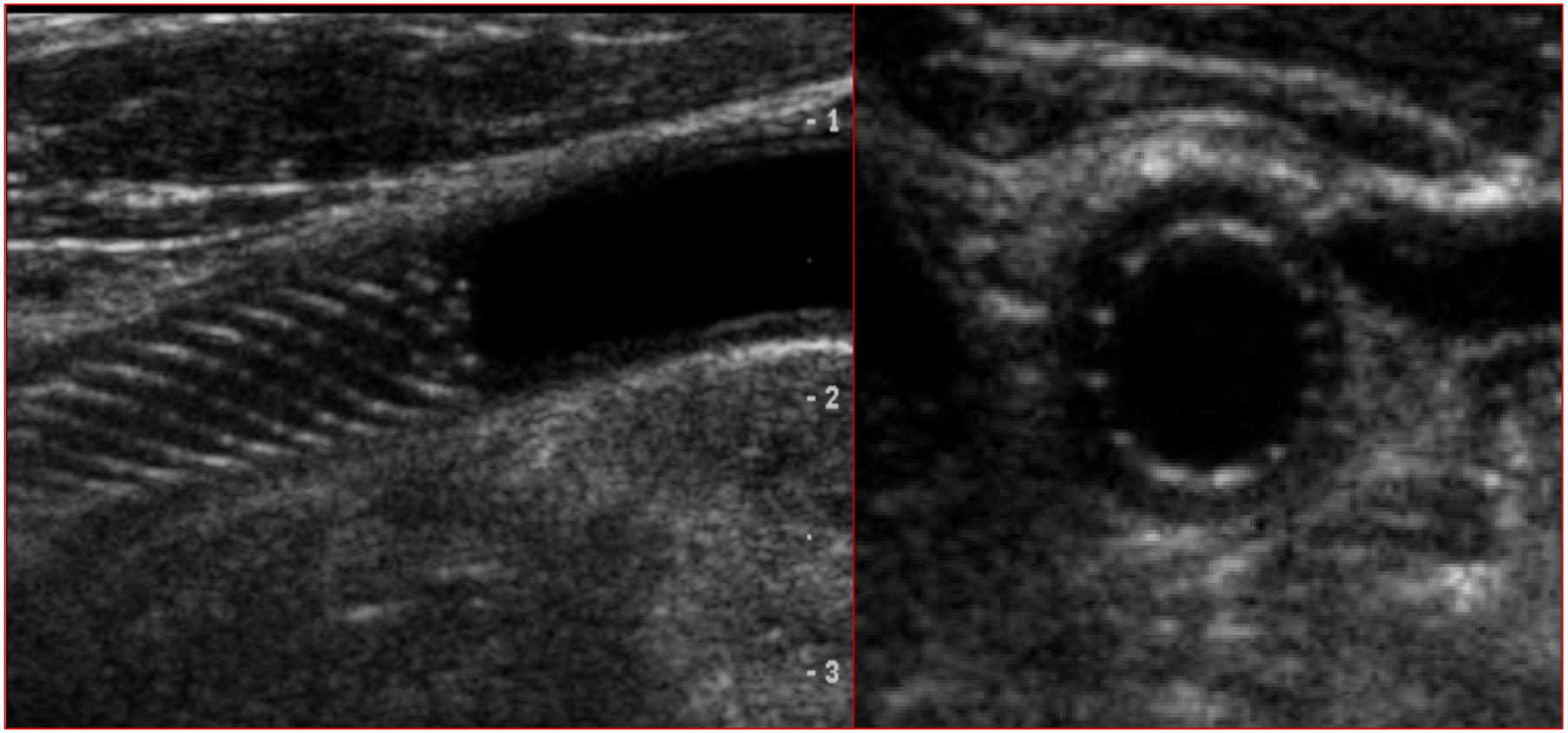
Carlos H. Timaran, JVS 2003

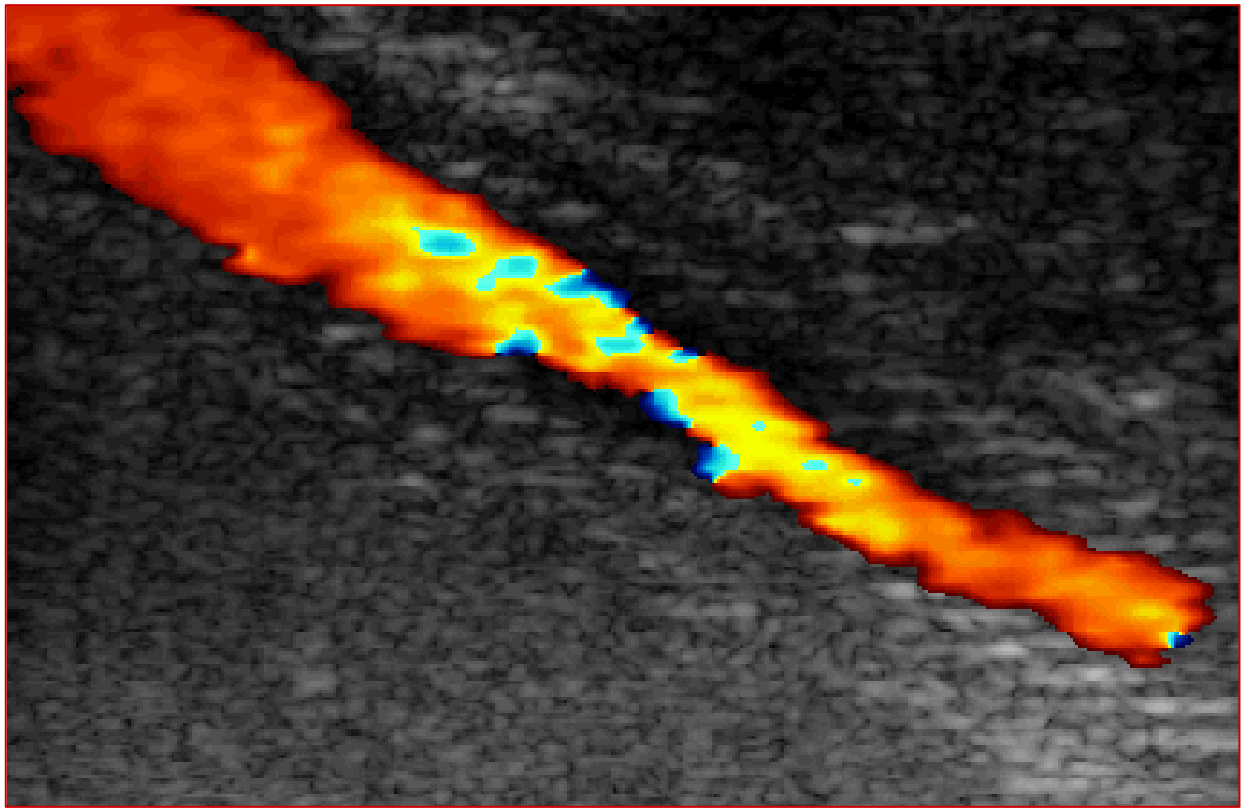


Iliac artery stenting

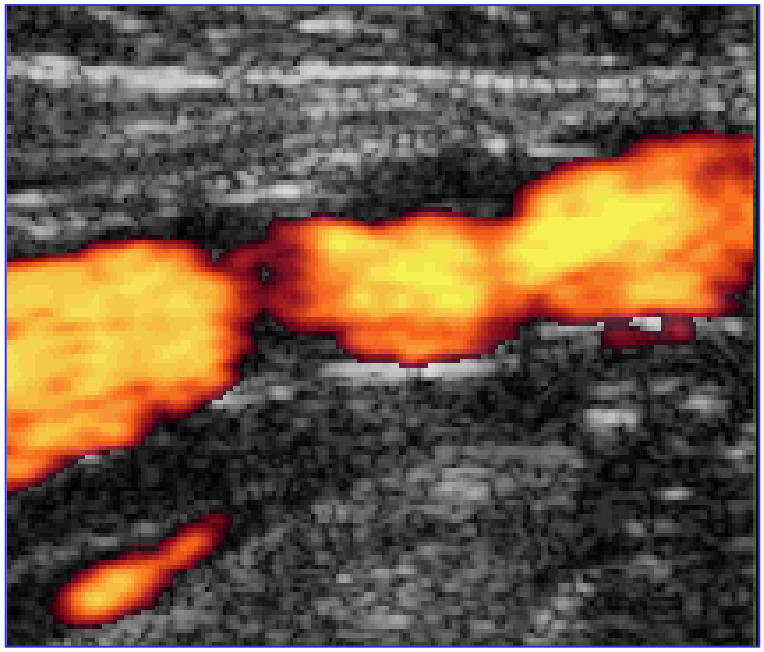


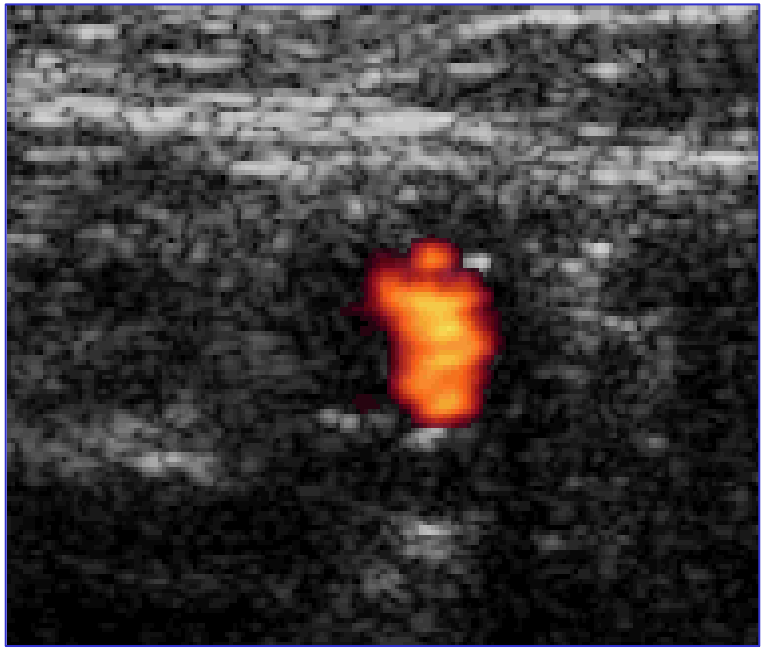


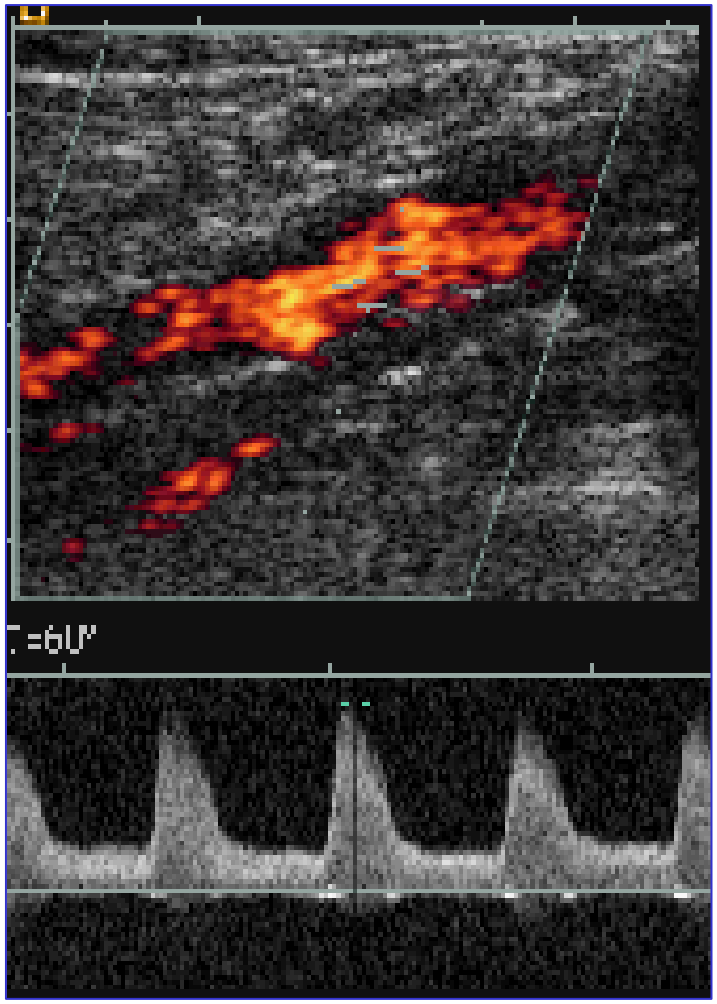

- 1
- 2
- 3



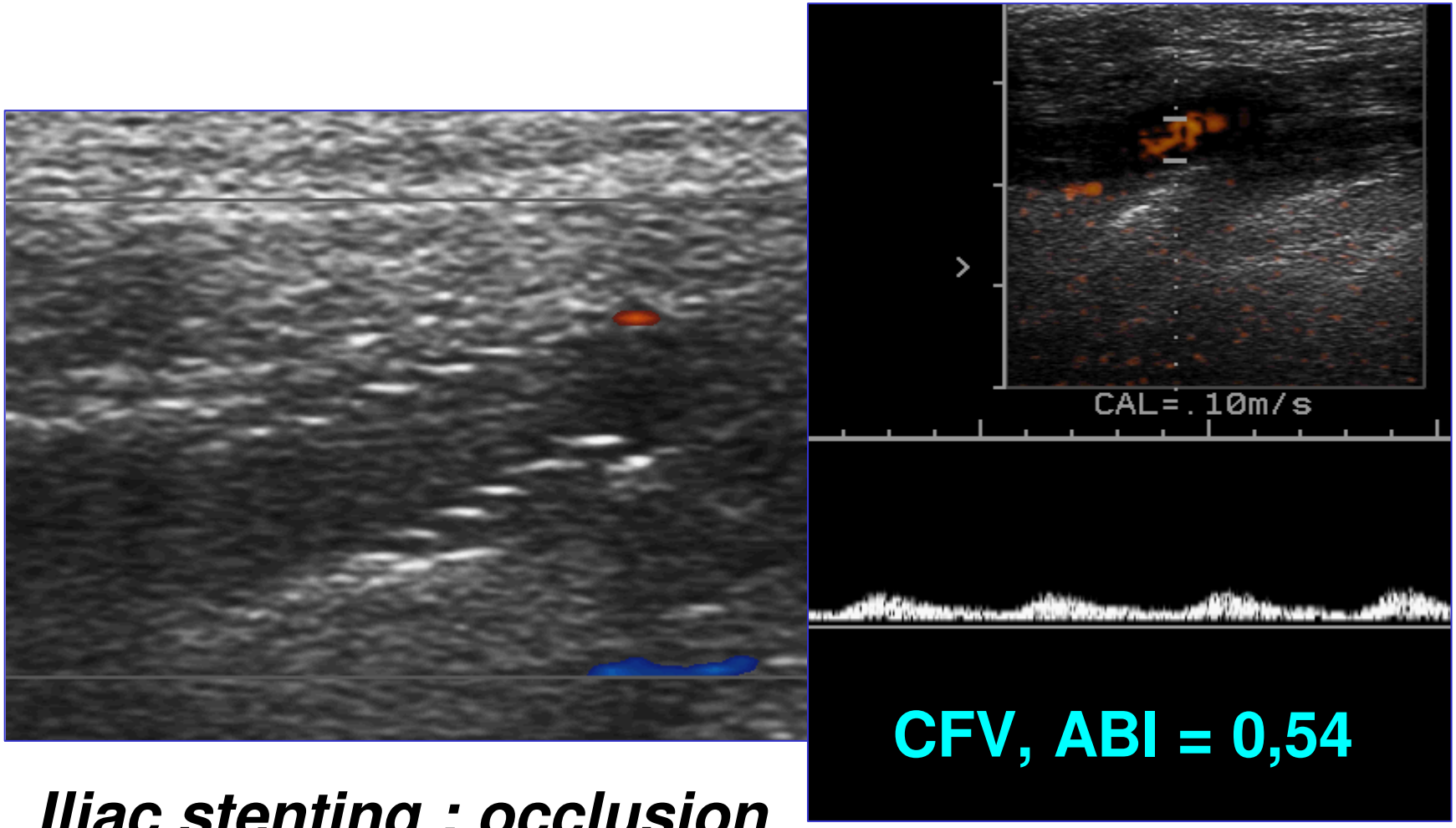
Stent fémorale superficielle
Sténose à M12



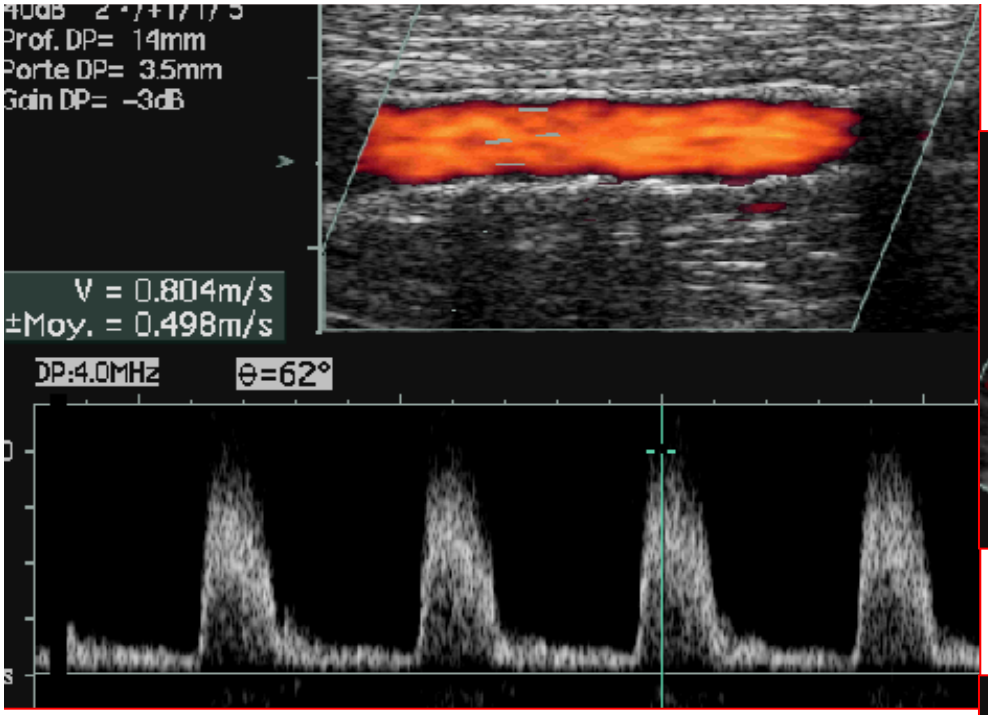


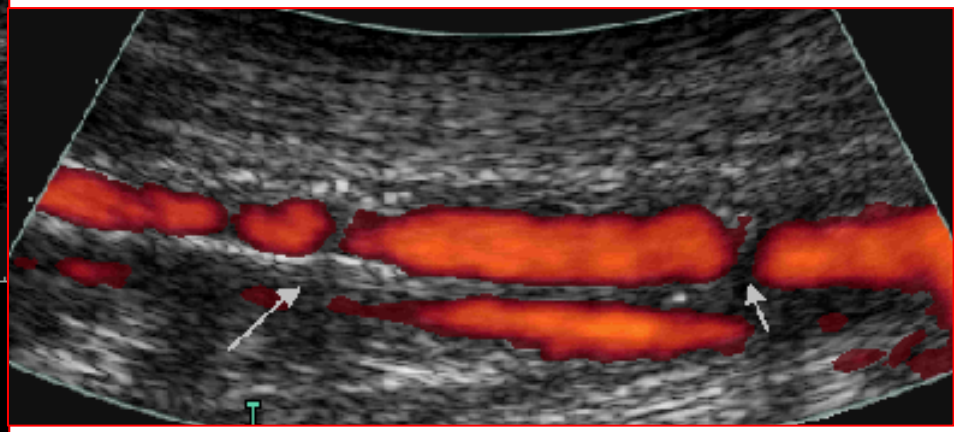


VSM = 317 cm/sec
RV = 4,6 / Récidive
Contrôle à M6
Réduction IPS

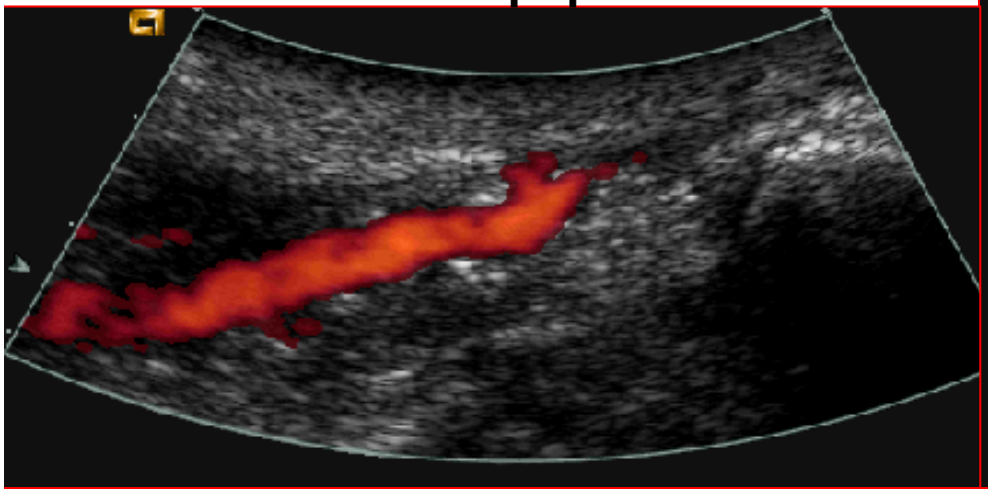


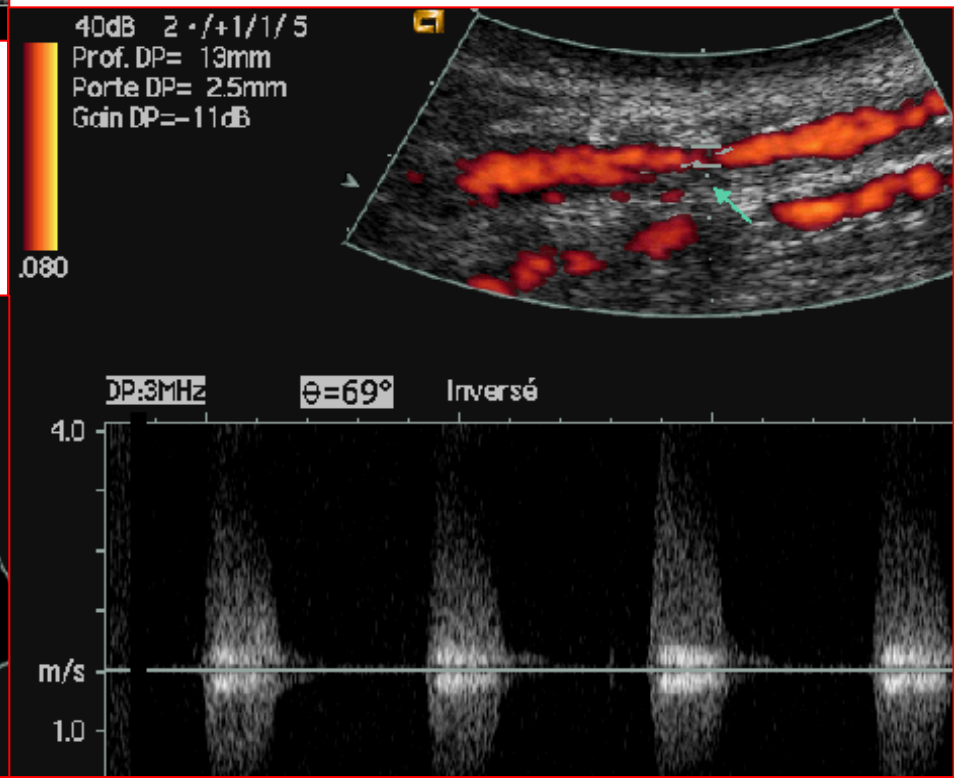
Iliac stenting : occlusion

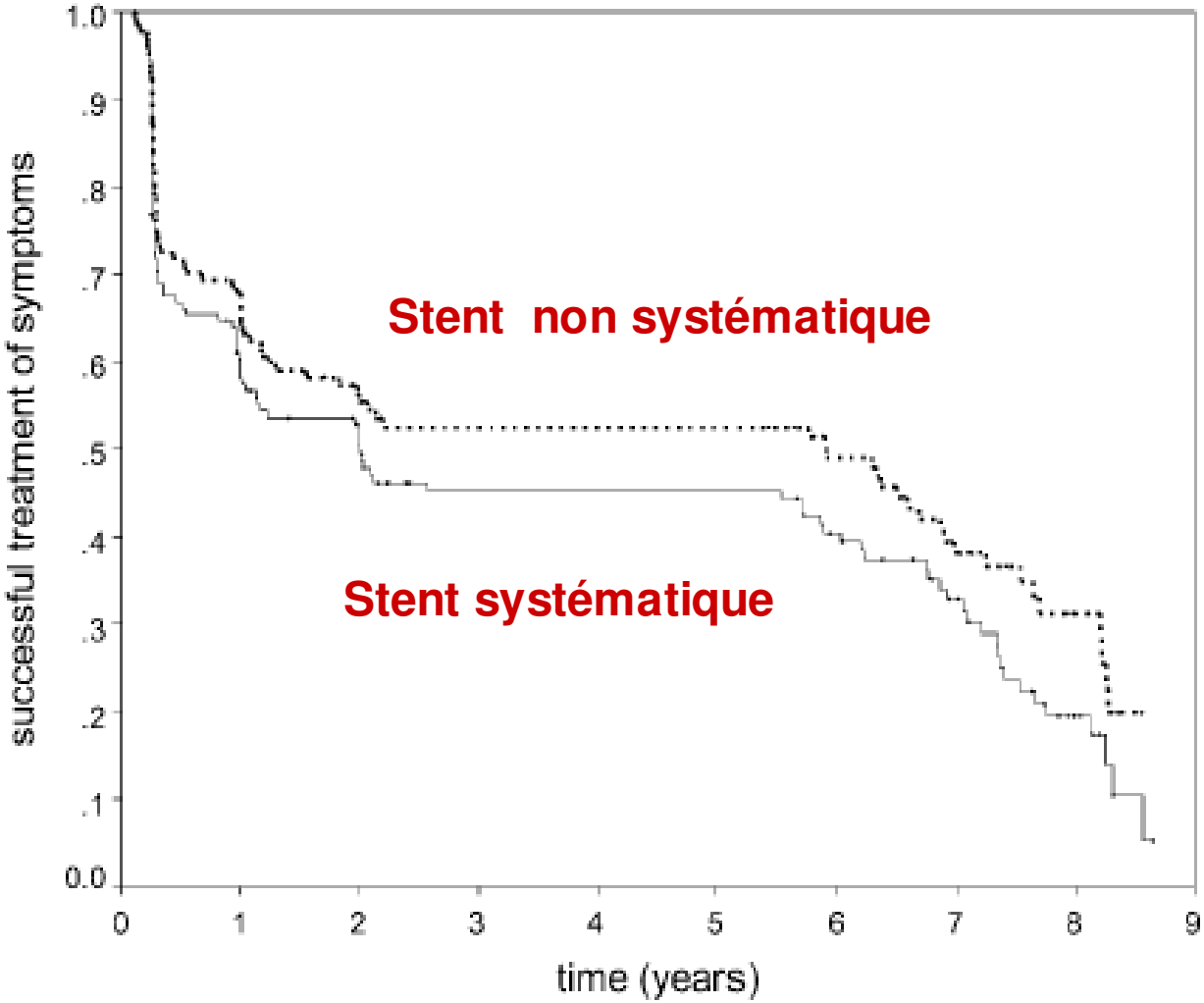




Prothèse Aorto Bi Fém., Pont V FP drt
DEL stent AFSG
M +18 : Occlusion FPG, sténose FSG,
Occlusion poplitée G



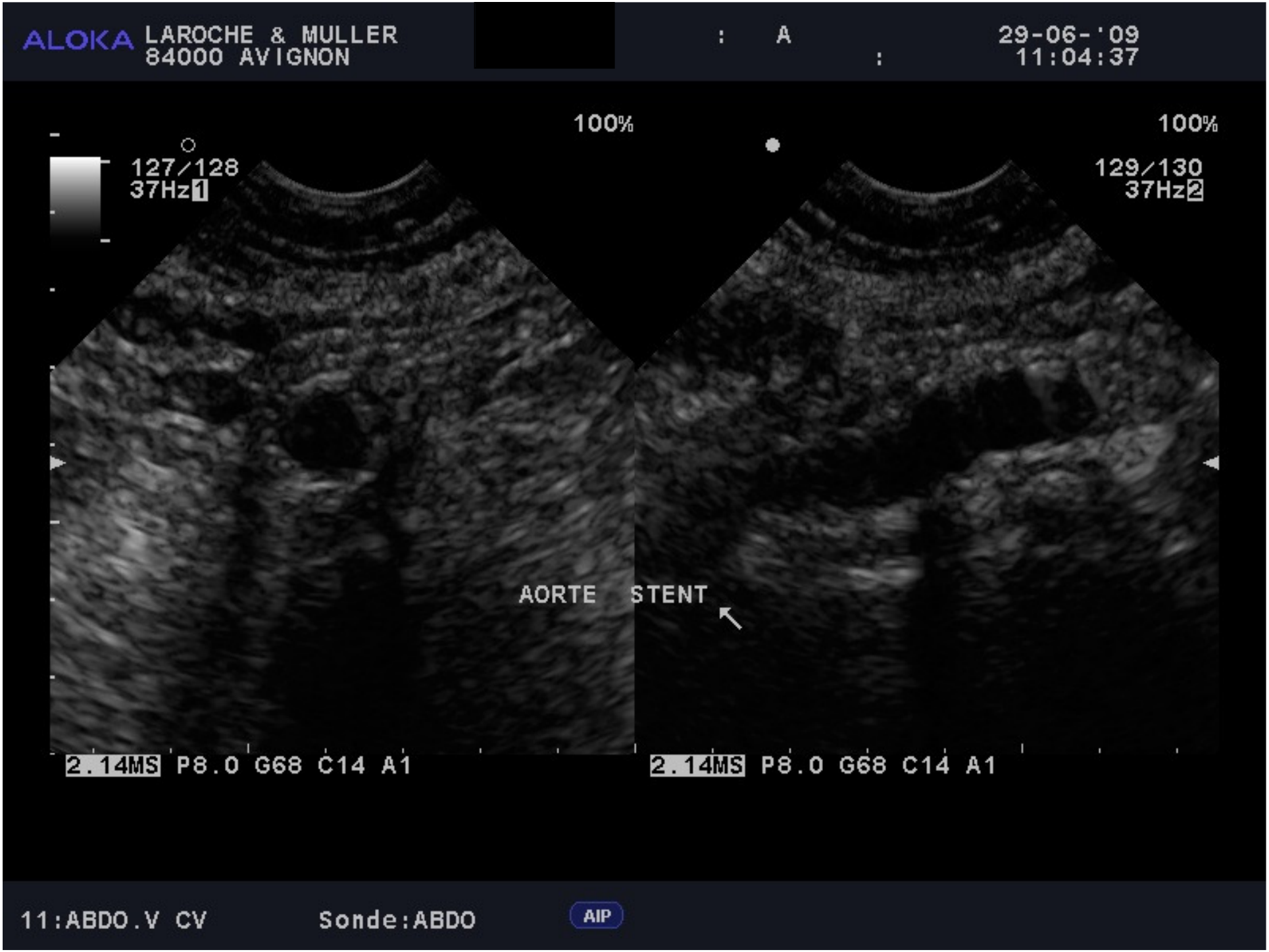




Primary stent	143	82	63	48	-	-	40	27	10
Failure	56	12	7	-	-	5	7	10	4
PTA with selective stent	134	86	60	51	-	-	44	28	13
Failure	42	14	4	-	-	3	9	4	4

Figure 1: Kaplan-Meier survival curves for symptomatic success. Solid line signifies primary stent placement (101 of 143 patients); and dotted line, PTA with selective stent placement (80 of 134 patients).

Dutch Iliac Stent Trial, Radiology 2006


ALOKA LAROCHE & MULLER
84000 AVIGNON
: A
29-06-'09
11:04:37
100%
127/128
37Hz 1
100%
129/130
37Hz 2
AORTE STENT
2.14MS P8.0 G68 C14 A1
2.14MS P8.0 G68 C14 A1
11:ABDO.V CV
Sonde:ABDO
AIP

STOP SMOKING IN ½ HOUR FLAT