

PAPEL DEL CARDIOLOGO EN LA REVASCULARIZACIÓN GLOBAL

PIE DIABÉTICO



Centro CVC La Floresta



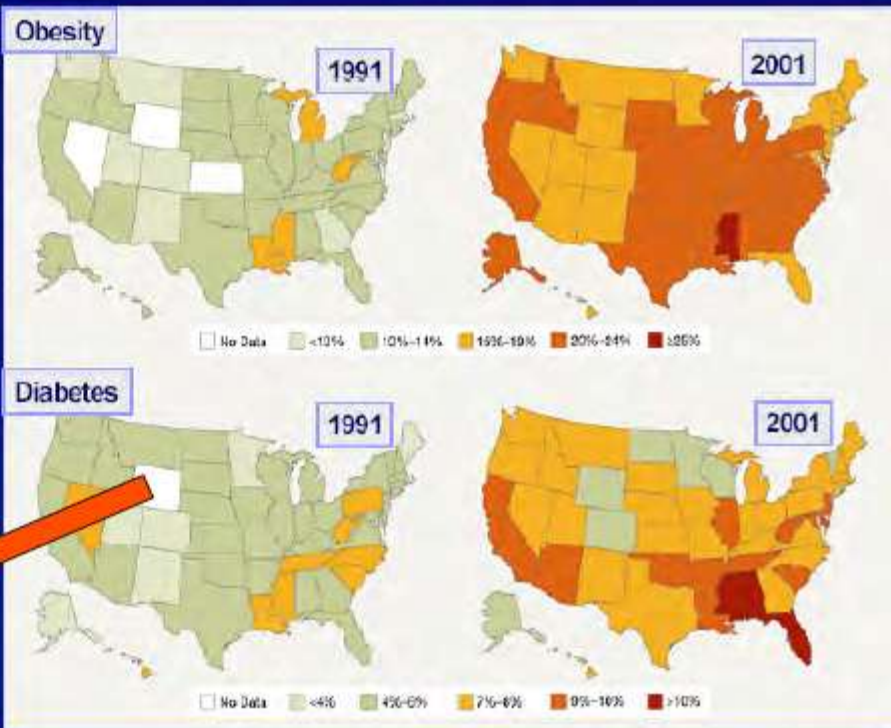
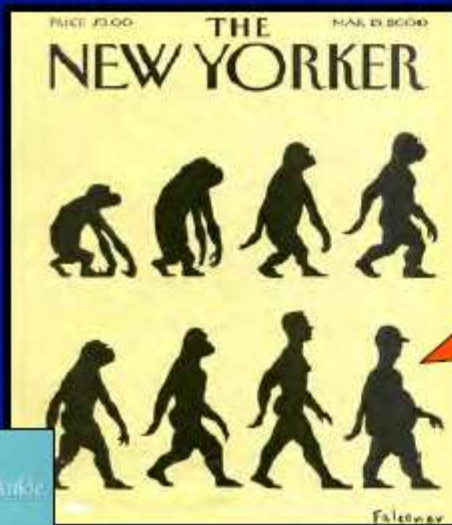
Instituto Médico La Floresta

PAPEL DEL CARDIÓLOGO EN LA REVASCULARIZACIÓN GLOBAL

**Entrenamiento en Medicina Interna,
Cardiología Clínica y Cardiología
Intervencionista**

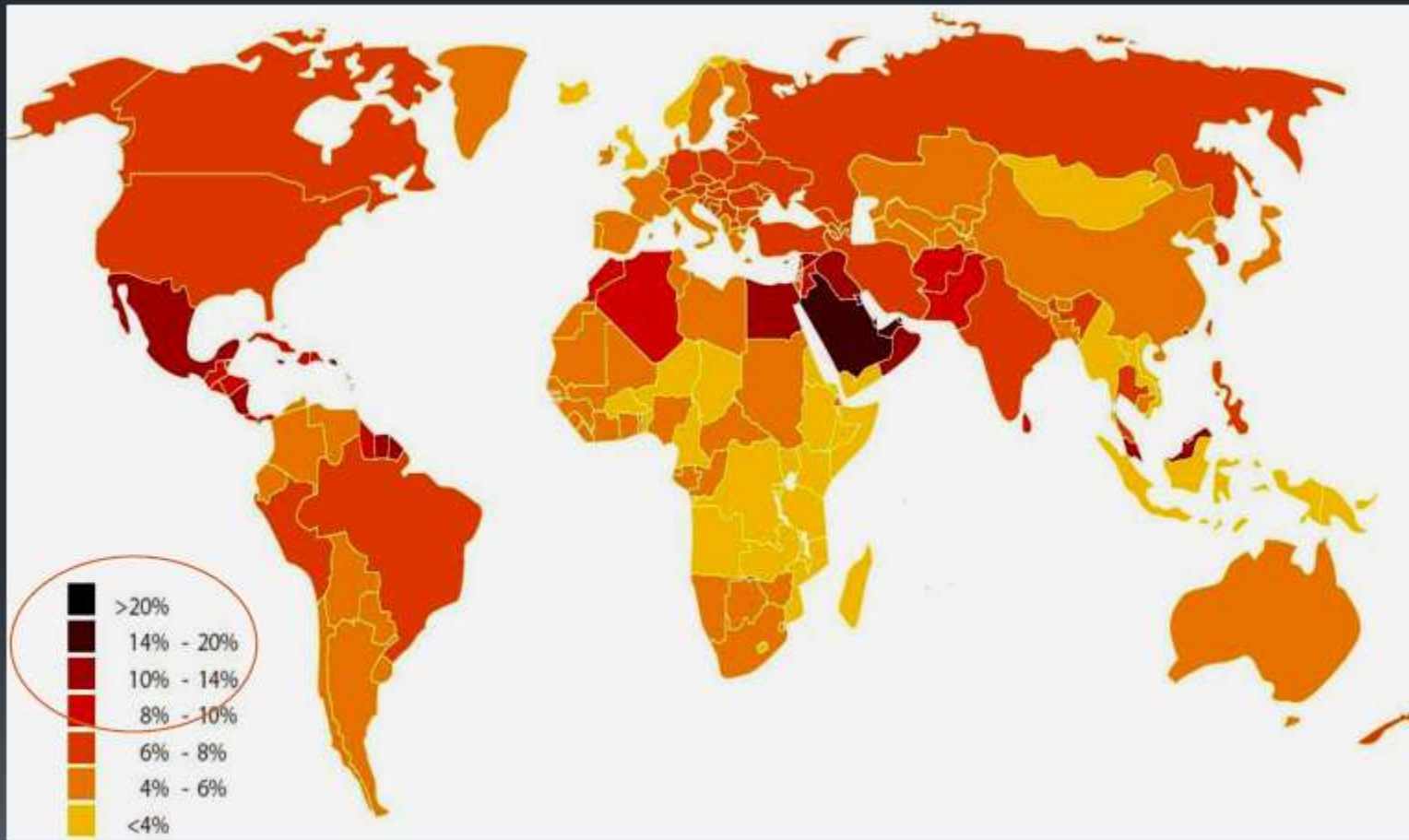
**La aterosclerosis es una enfermedad
sistémica**

Patients With Diagnosed Diabetes (millions)



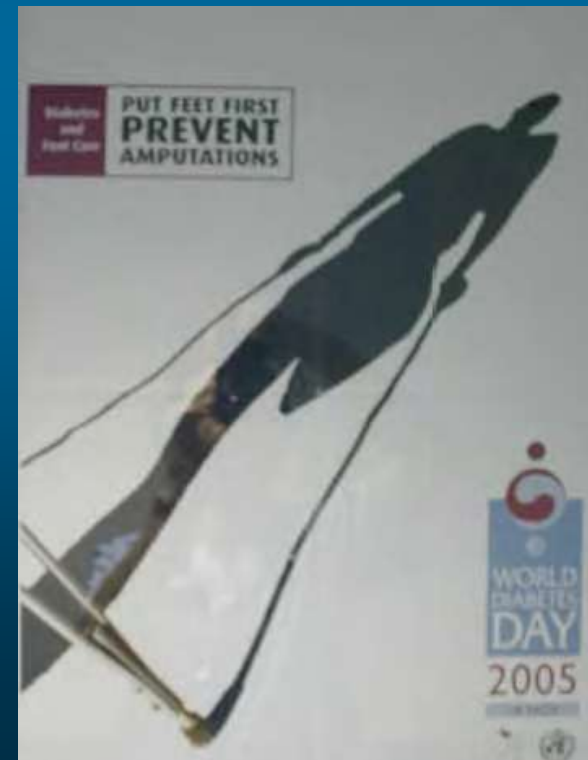
R. Nesto, TCT 2003

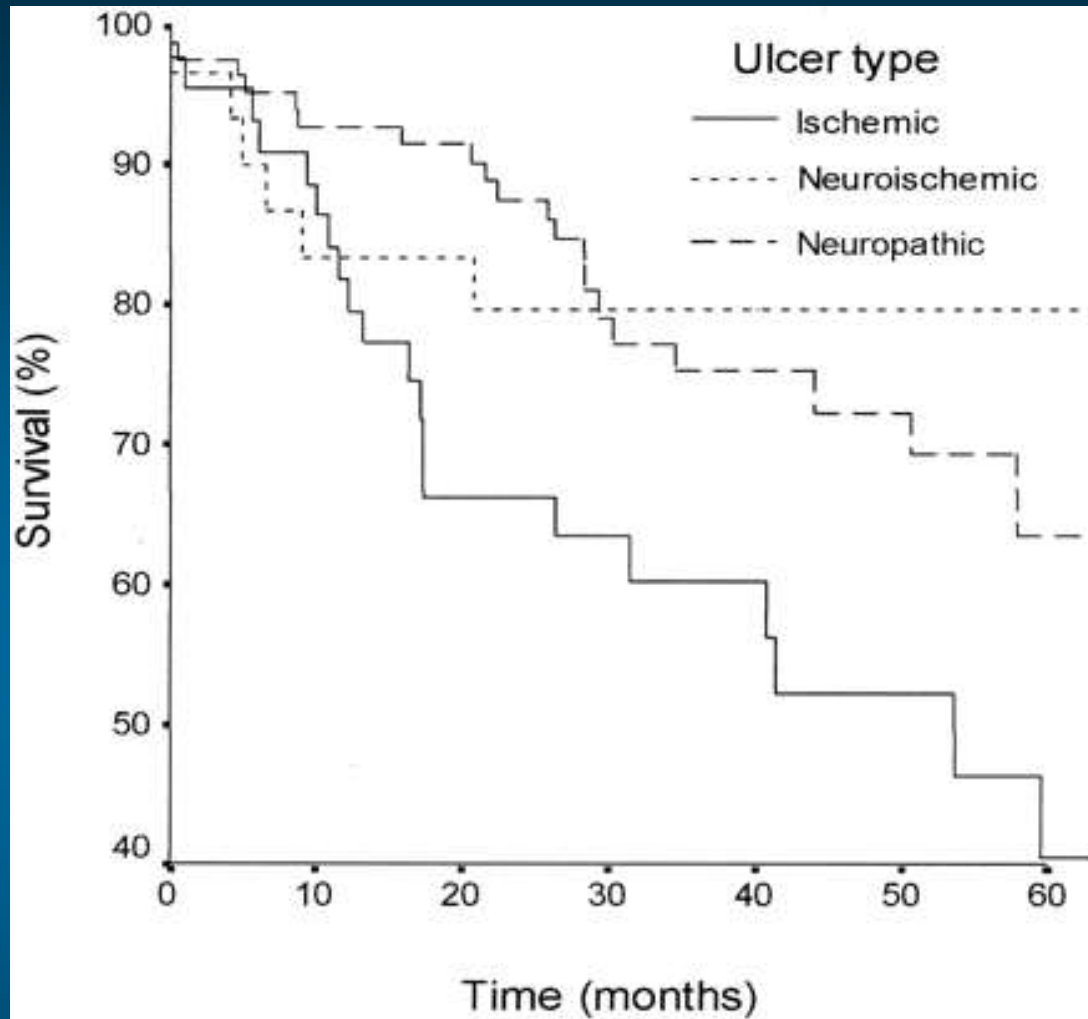
Distribution of Diabetes in the World (IDF 2007)



A. Nather, *Diabetes Mellitus and Its Complications: A Global Problem*. In: *Diabetic Foot Problems*, pag.:1-11, WSPC Pub., 2008

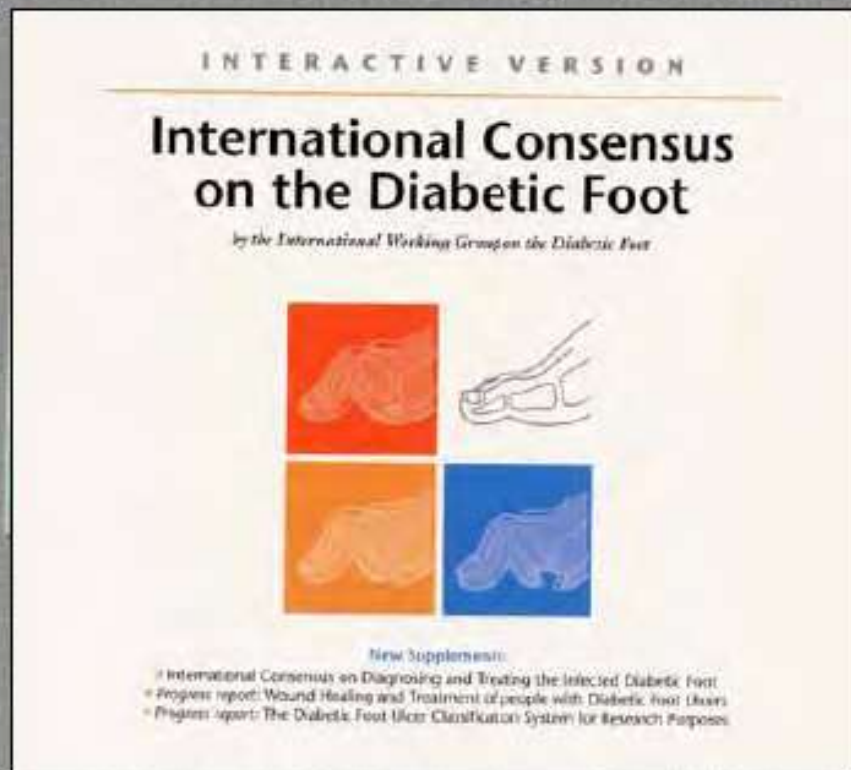
CADA 30 SEGUNDOS SE
PIERDE UN MIEMBRO
INFERIOR POR DIABETES
EN ALGUNA PARTE DEL
MUNDO





Moulik P, et al. Diabetes care 2003;26:991-994

INTERNATIONAL WORKING GROUP ON THE DIABETIC FOOT





“I marvel that society would pay a surgeon a large sum of money to remove a patient’s leg but nothing to save it”

George Bernard Shaw





PIE DIABÉTICO

OBJETIVO PRINCIPAL

Disminuir las amputaciones mayores, lo cual reduce el costo económico y social del pie diabético

DOS GRANDES SINDROMES

-PIE NEUROPÁTICO

-PIE NEUROISQUÉMICO

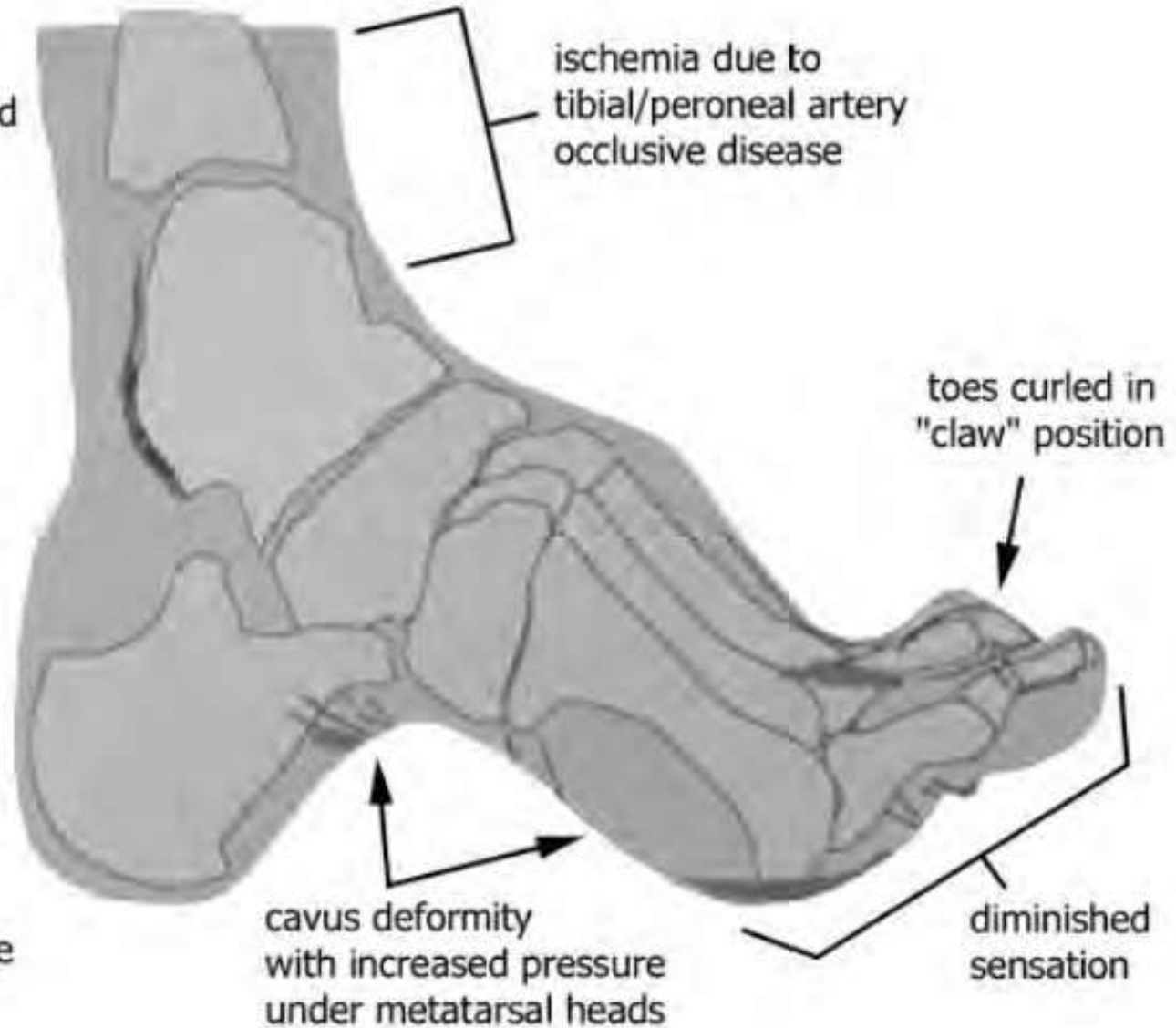
- Microneurovascular dysfunction with loss of nociceptive reflex and inflammatory response

- Vasomotor dysfunction with AV shunting

- Capillary basement membrane thickening with altered capillary exchange

- Glycosylation of matrix proteins

- Loss of apocrine/eccrine gland function





Our Results of 5-year PTA follow-up in 993 Consecutive Diabetics with CLI & Foot Ulcer



Peripheral Angioplasty as the First-choice Revascularization Procedure in Diabetic Patients with Critical Limb Ischemia: Prospective Study of 993 Consecutive Patients Hospitalized and Followed Between 1999 and 2003

Eur J Vasc Endovasc Surg. 2005 Jun;29:620-7

E. FAGLIA, L. DALLA PAOLA, G. CLERICI, J. CLERISSI, L. GRAZIANI,
M. FUSARO, L. GABRIELLI, S. LOSA, A. STELLA, M. GARGIULO, M. MANTERO,
M. CAMINITI, S. NINKOVIC, V. CURCI and A. MORABITO



Our Results of 5-year PTA follow-up in 993 Consecutive Diabetics with CLI & Foot Ulcer

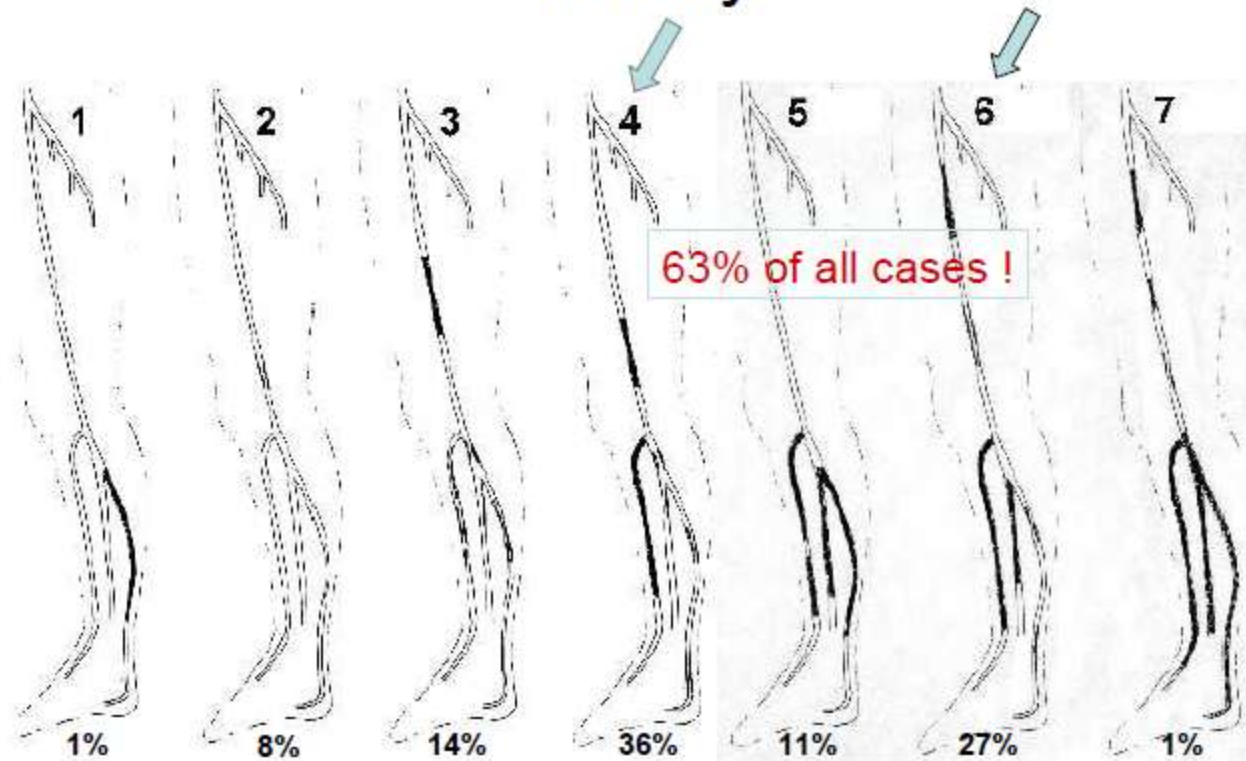
- **Major Amputation** in PTA-patients = **4.0%** (cumulative rate)
- **Major Amputation** in 157 (13.2%) **By-Pass Surgery** patients (PTA impossible) = **8.3%**
- **Major Amputation** in 47 **Not Revascularized Subjects** (5 anesthesiology risk, 4 patient refusal, 38 not considered by the Vascular Surgeon as candidates for By-Pass Surgery) = **34.0%**
- **Clinical recurrence** rate = **12.5%** (7.1% per year).
In **85.4%** of clinical recurrences, a second PTA was successfully performed
- **5 year Limb Salvage** = **88%**

Eur J Vasc Endovasc Surg. 2005 Jun;29:620-7

Interventions Strategies in CLI: Differences between Diabetics and Non- Diabetics

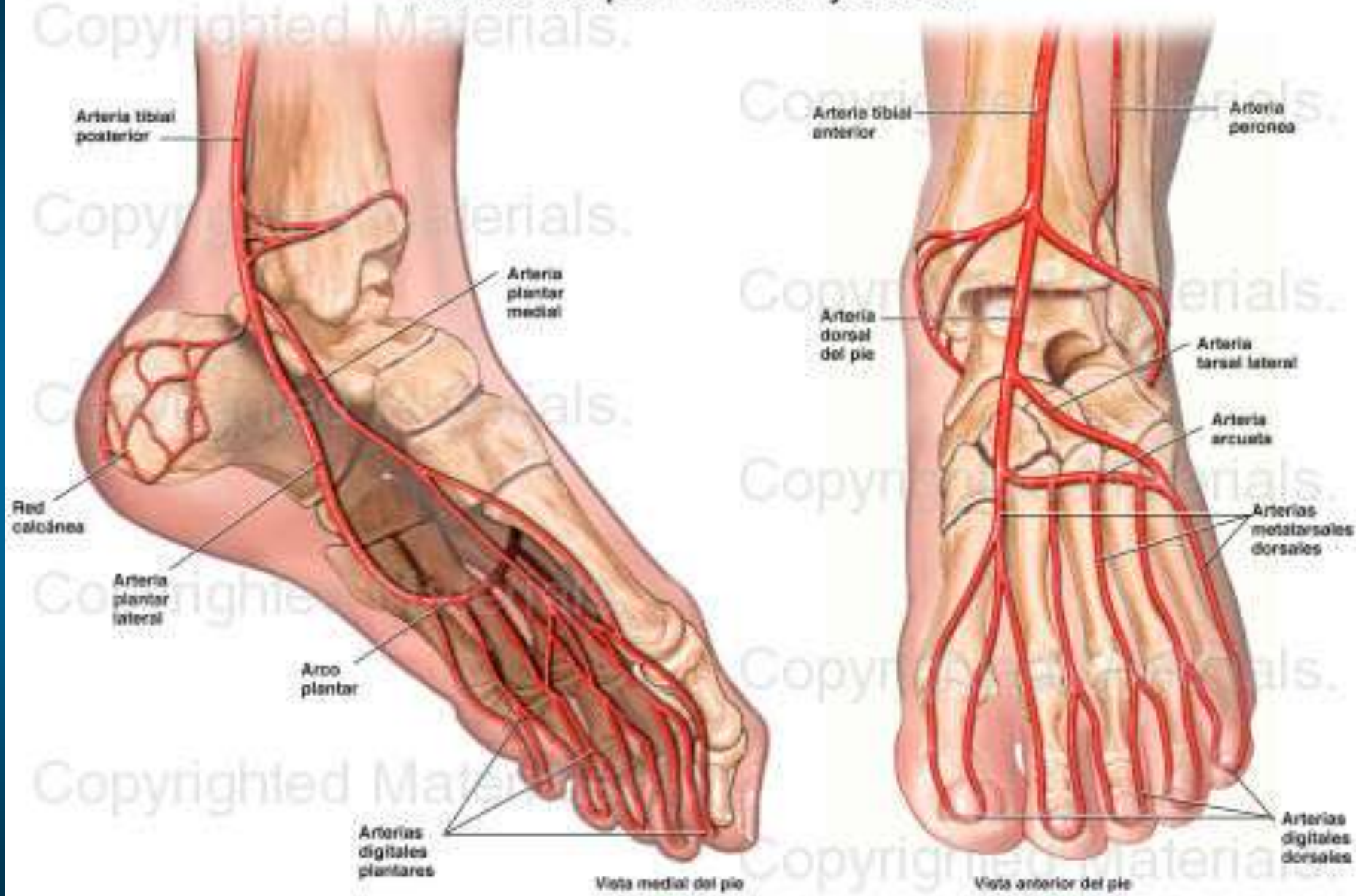
	DIABETICS	NON-DIABETICS
ILIAC OBSTRUCTIONS	RARE	COMMON
NEED OF ILIAC STENT	RARE	COMMON
CATHETER-BASED THROMBOLYSIS REQ.	RARE	FREQUENT
BENEFIT OF TREATING PROXIMAL LESIONS ONLY	NONE OR LOW	HIGH
PROFUNDA FEMORIS ANGIOPLASTY	NEVER CRUCIAL	FREQUENT BENEFIT
DISTAL RECANALIZATION	ALWAYS NECESSARY	SELDOM NECESSARY
RISK OF MAJOR AMPUTATION	VERY HIGH	LOW
INFECTION AND NECROSIS	COMMON	INFREQUENT

Arterial Involvement in 7 Classes of Progressive Severity



Graziani I. et al. *Eur J Vasc Endovasc Surg* 2007;33,453-460

Arterias del pie - Plantar y dorsal

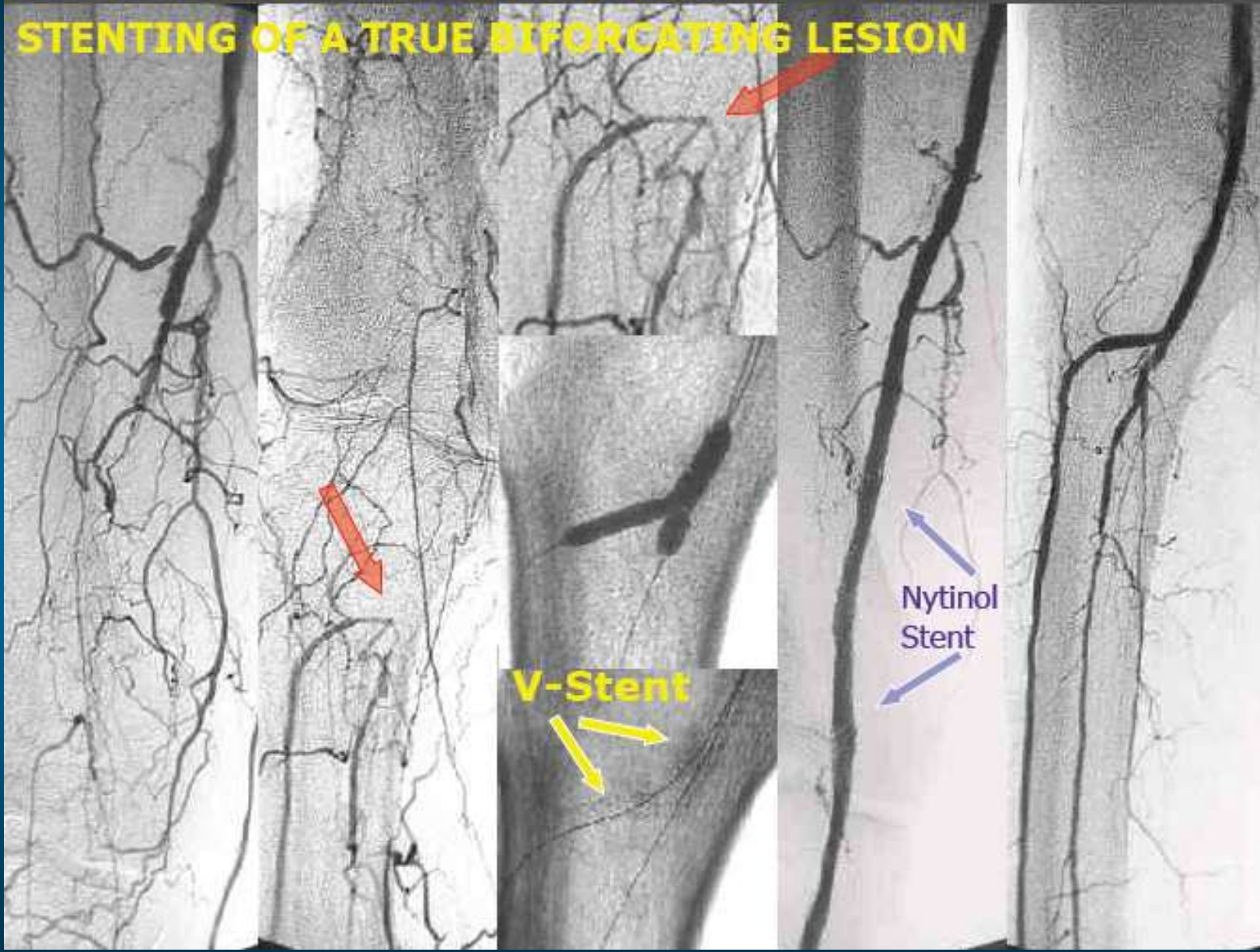


Case 1

- 76 yr man, IDDM, ischaemic ulcer and dry gangrene of the right forefoot.
- Long fem-pop calcified occlusion and stenosis of the popliteal bifurcation.



STENTING OF A TRUE BIFURCATING LESION

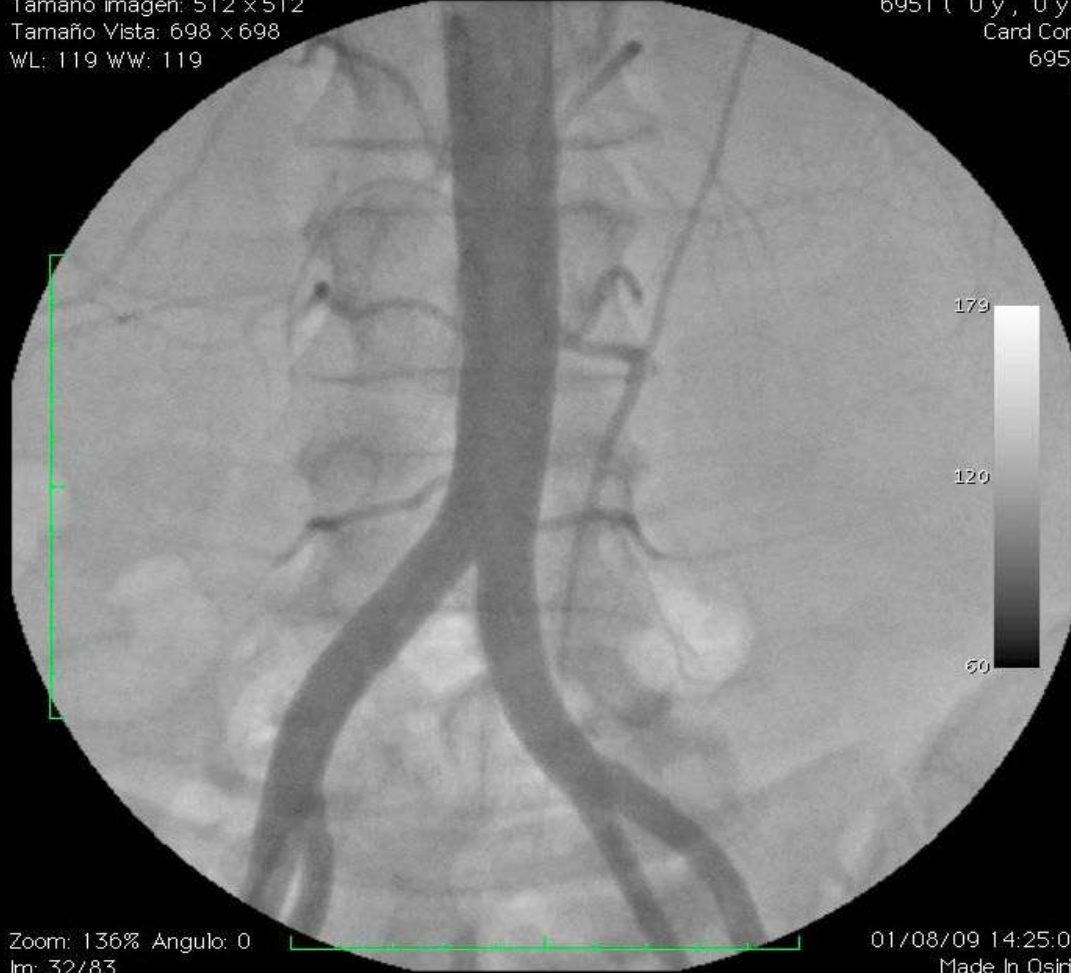


♂ 64^a, Diabetes NIR



Tamaño Imagen: 512 x 512
Tamaño Vista: 698 x 698
WL: 119 WW: 119

6951 (0 y, 0 y)
Card Coro
6951
1



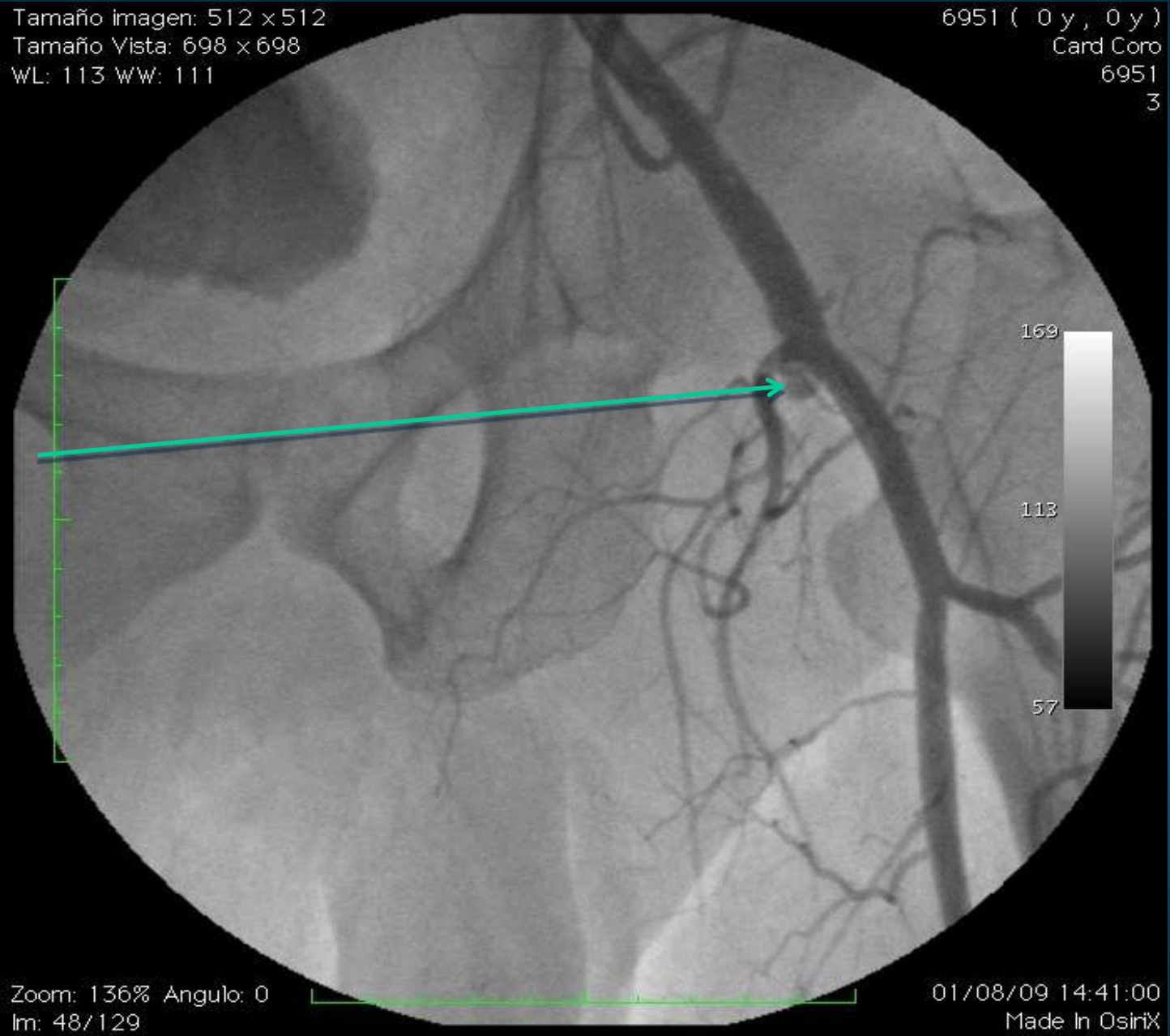
Zoom: 136% Angulo: 0
Im: 32/83

01/08/09 14:25:00
Made In OsiriX

Tamaño imagen: 512 x 512
Tamaño Vista: 698 x 698
WL: 113 WW: 111

6951 (0 y , 0 y)
Card Coro
6951
3

Oclusión de la
arteria femoral
superficial.



Zoom: 136% Angulo: 0
Im: 48/129

01/08/09 14:41:00
Made In OsiriX

Tamaño imagen: 512 x 512
Tamaño Vista: 698 x 698
WL: 126 WW: 138

6951 (0 y, 0 y)
Card Coro
6951
3

Recanalización



Zoom: 136% Angulo: 0
Im: 100/129

01/08/09 14:41:00
Made In OsiriX

Tamaño imagen: 512 x 512
Tamaño Vista: 698 x 698
WL: 132 WW: 140

6951 (0 y , 0 y)
Card Coro
6951
8



Trombolisis

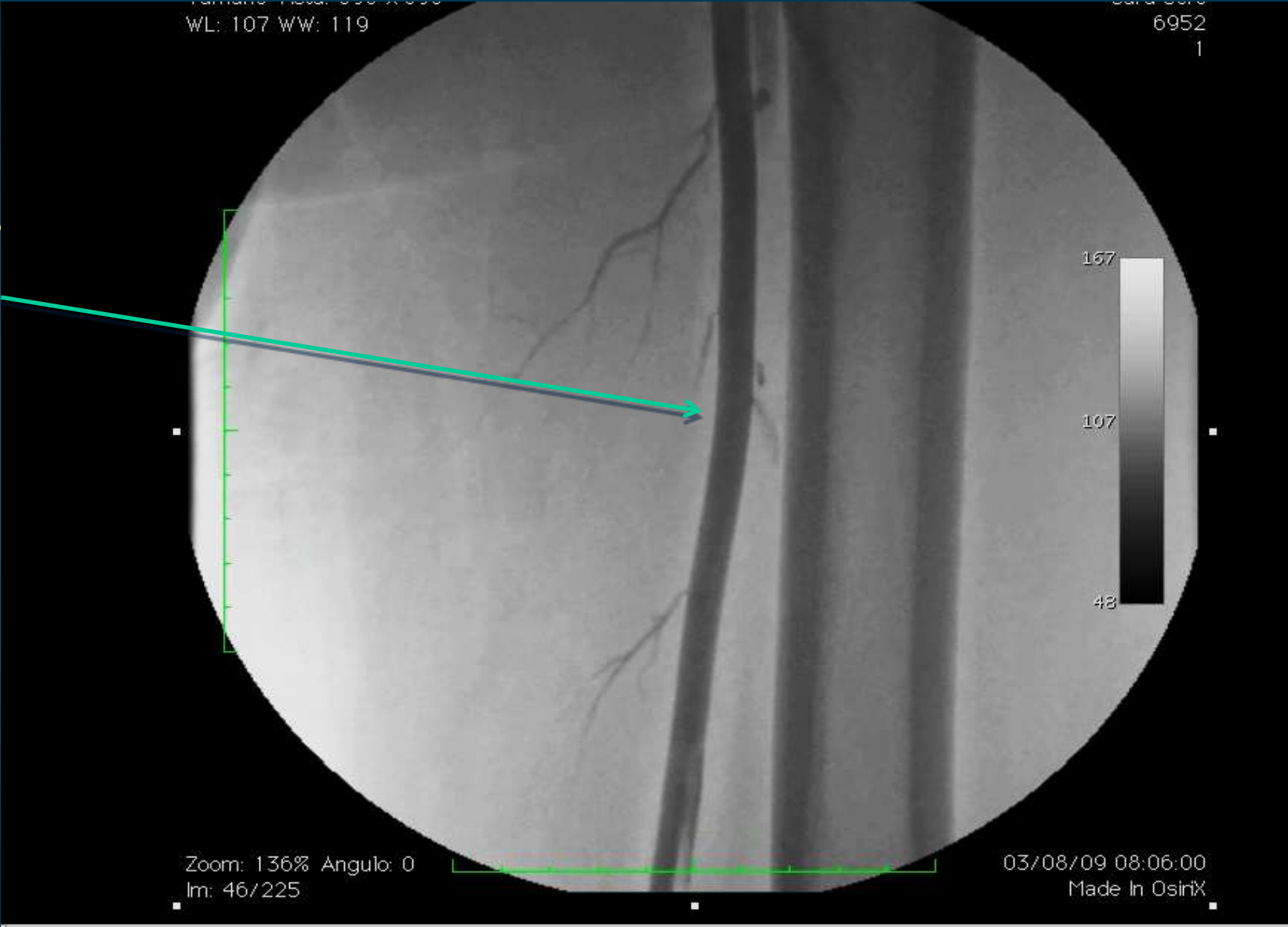
Zoom: 136% Angulo: 0
Im: 7/31

01/08/09 15:01:00
Made In OsiriX

Patient: 6952
WL: 107 WW: 119

6952
1

Post-Trombolisis
Arteria Femoral
superficial



Evolución a las 24h

LLENADO VENOSO



Seguimiento a 3 años













Ingreso Nov 2012



Seguimiento Febrero 2013

Stent DA, IRC



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VASCULAR/INTERVENTIONAL RADIOLOGY

1623

RadioGraphics

Vascular Imaging of the Foot: The First Step toward Endovascular Recanalization¹

TEACHING POINTS



See last page

Marco Manzi, MD • Giacomo Cester, MD • Luis M. Palena, MD • Josef Alek, RT • Alessandro Candeo, RT • Roberto Ferraresi, MD

diabetics. Revascularization of the foot is now often performed by using percutaneous transluminal angioplasty; over a 4-year period, the authors performed more than 2500 antegrade interventional procedures in patients with critical limb ischemia, diabetes, and infrainguinal arterial disease. Intraprocedural angiography of the foot is crucial for successful planning and guidance of percutaneous transluminal angioplasty in tibial and pedal arteries, and its effective use requires both anatomic knowledge and technical skill. To select the best revascularization strategy and

Vascular Imaging of the Foot: The First Step toward Endovascular Recanalization

Marco Manzi, MD • Giacomo Cester, MD • Luis M. Palena, MD • Josef Alek, RT • Alessandro Candeo, RT • Roberto Ferraresi, MD

RadioGraphics 2011; 31:1623–1636 • Published online 10.1148/rg.316115511 • Content Codes:  

(a) Radiograph shows appropriate positioning in the image intensifier, parallel to the medial foot, for lateral oblique angiographic projections. (b) Fluoroscopic image shows proper positioning of the foot to satisfy two major projection criteria: First, the base of the fifth metatarsal bone must project outward from the base of the foot (square and inset) to obtain the correct lateral oblique inclination. Second, the heel and proximal part of the forefoot should be included in the projection area. (c) Angiogram shows the bifurcation of the common plantar artery (arrowhead) into the medial and lateral plantar arteries. The lateral oblique projection is best for visualizing the common plantar artery bifurcation while also evaluating the dorsalis pedis artery and pedal-plantar loop.



a.



b.



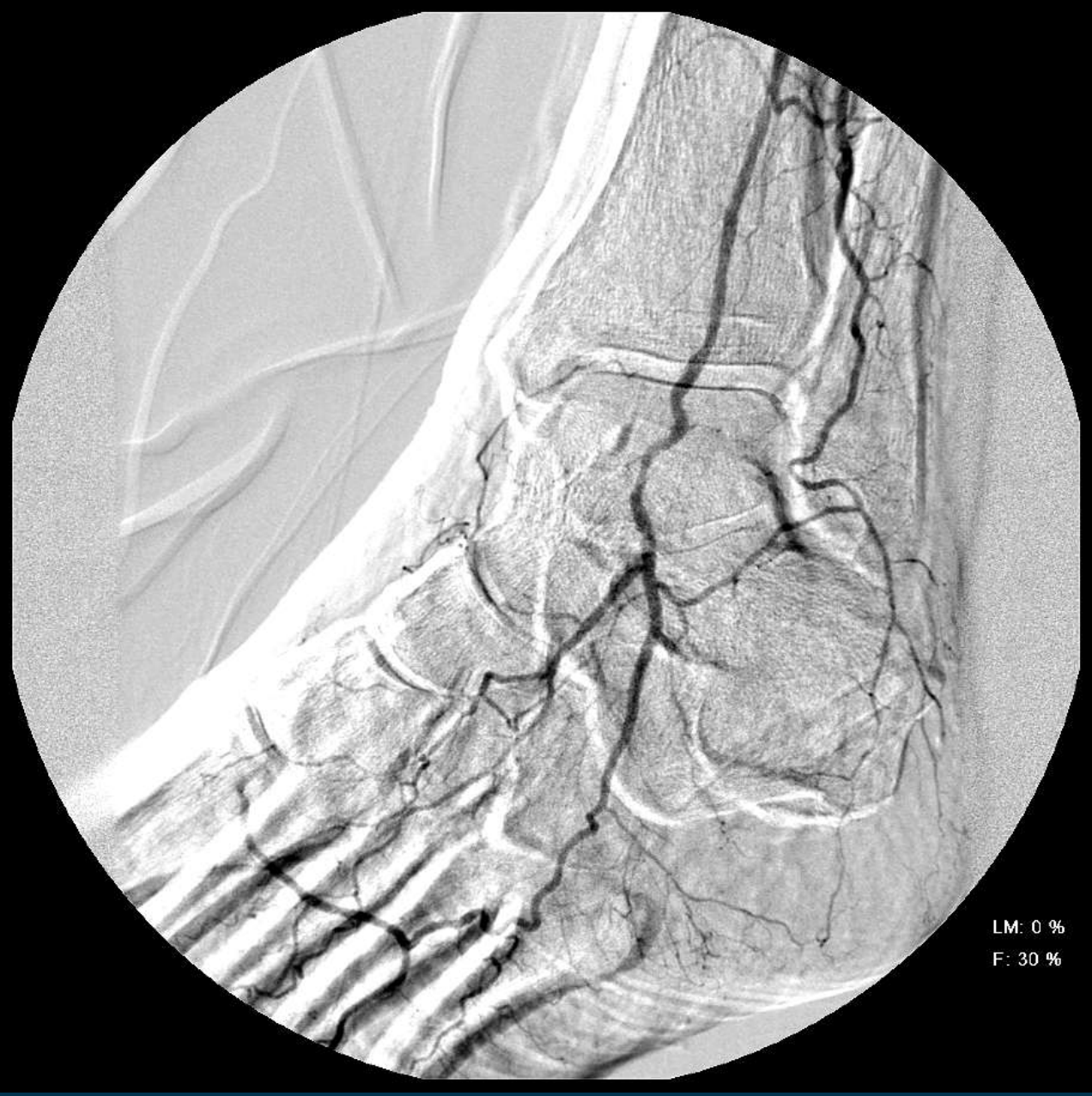
c.



Figure 2. Anteroposterior angiographic projection. (a) Photograph shows appropriate positioning of the image intensifier, parallel to the dorsum of the foot, for anteroposterior angiographic projections. (b) Fluoroscopic image shows proper positioning of the foot to satisfy two major projection criteria: visualization of the first proximal metatarsal interspace (square and inset) to obtain the correct inclination, and inclusion of the entire foot in the projection area. (c) Angiogram shows the pedal-plantar loop passing from the dorsal portion to the plantar portion of the foot in the first metatarsal interspace (arrowhead). The anteroposterior projection is best for visualizing the pedal-plantar loop and the origins of the tarsal and metatarsal arteries.

a.





LM: 0 %

F: 30 %



♂ 68^a, DID, trauma, infección
EAC 3 vasos, IRC Creat 2,2



PROTOCOLO DE TRATAMIENTO

PIE DIABÉTICO ISQUÉMICO

1-Examen clínico del PACIENTE y de la LESIÓN

-Tratamiento de la infección

-Resolución quirúrgica tisular de emergencia

-Anatomía Arterial

-Tratamiento Cardiológico, Metabólico, Nutricional

PROTOCOLO DE TRATAMIENTO

PIE DIABÉTICO ISQUÉMICO

2-Angiografía-Angioplastia

3-Angioplastia no factible: Bypass

4-Evaluación de resultados: Angio y Clínica

5-Seguimiento: Tratamiento Global-Quirúrgico