

EndoLimb Rosario 2023

Que vaso revascularizar en la isquemia crítica?



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En CLI como determinar cual o cuales vasos deberíamos tratar

CLI



- Características del paciente
- Lesiones troficas
 - Factibilidad

Estrategia final

En CLI como determinar cual o cuales vasos deberíamos tratar

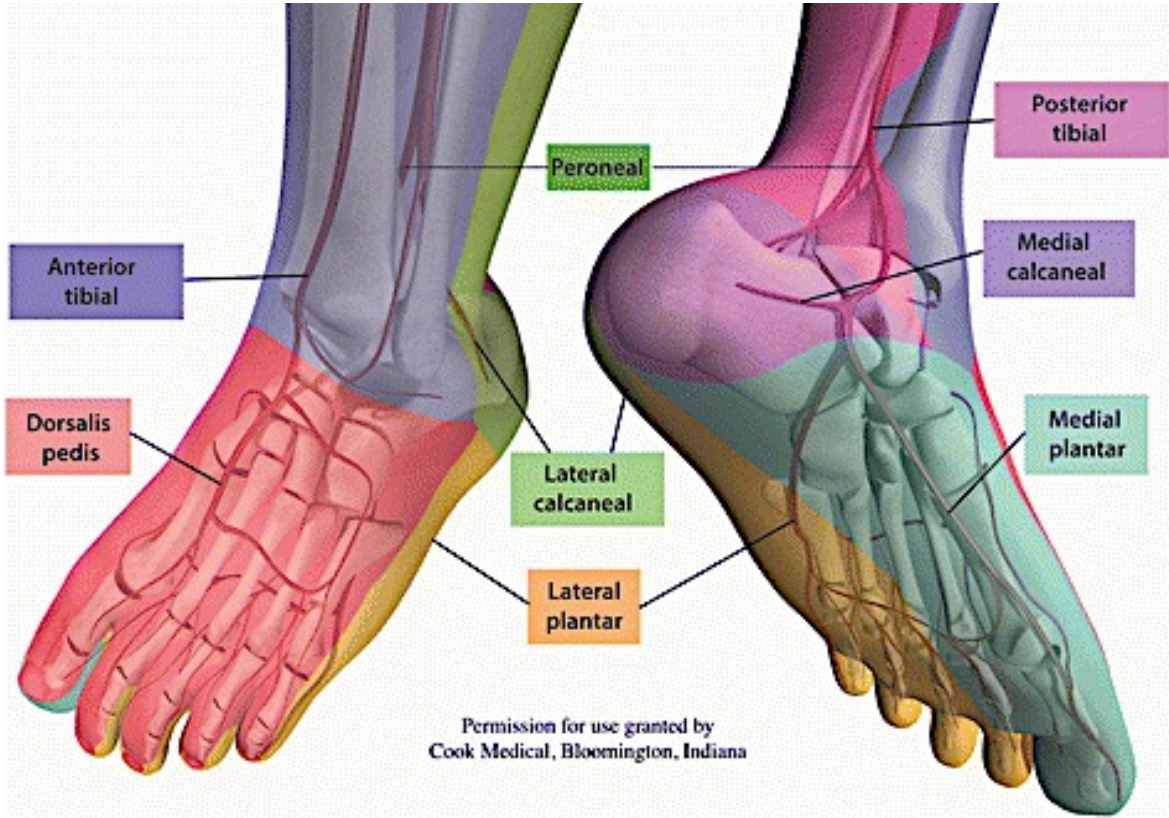
Tipo de lesiones

Cuántas lesiones tiene?

Están ubicadas en el antepie o retropie?

Si están en el retropie comparten más de un Angioma?

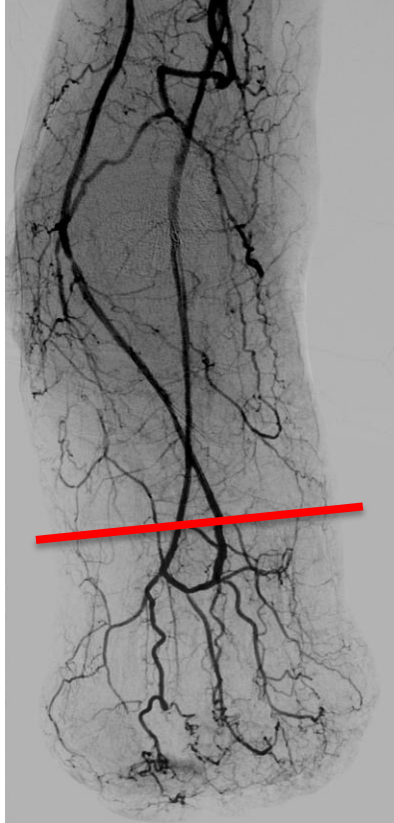
En CLI como determinar cual o cuales vasos deberíamos tratar



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En CLI como determinar cual o cuales vasos deberíamos tratar

**Retro-pie
Angiosoma**



**Ante-pie
Arco plantar**

En CLI como determinar cual o cuales vasos deberíamos tratar



ELSEVIER

Clinical Research

Competing Risk Analysis of the Impact of Pedal Arch Status and Angiosome-Targeted Revascularization in Chronic Limb-Threatening Ischemia

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Background: In the context of chronic limb-threatening ischemia, the prognostic impact of angiosome-targeted revascularization and of the status of the pedal arch are debated.

Methods: This series includes 580 patients who underwent endovascular ($n = 407$) and surgical revascularization ($n = 173$) of the infrapopliteal arteries for chronic limb-threatening ischemia associated with foot ulcer or gangrene. The risk of major amputation after infrapopliteal revascularization was assessed by a competing risk approach. A subanalysis was made separately for patients who underwent endovascular or open surgical revascularization.

Results: At 2 years, survival was 65.1% and leg salvage was 76.1%. Multivariable competing risk analysis showed that C-reactive protein >10 mg/dL, diabetes, rheumatoid arthritis, increased number of affected angiosomes, and the incomplete or total absence of pedal arch compared with complete pedal arch (CPA) were independent predictors of major amputation after infrapopliteal revascularization. Multivariable analysis showed increasing risk estimates of major amputation in patients with incomplete (subdistribution hazard ratio [SHR], 2.131; 95% confidence interval [95% CI], 1.282–3.543) and no visualized pedal arch (SHR, 3.022; 95% CI, 1.553–5.883) compared with CPA. Pedal arch was important even if angiosome-targeted revascularization was achieved: Angiosome-directed revascularization in presence of CPA had a lower risk of major amputation (adjusted SHR, 0.463; 95% CI, 0.240–0.894) compared with angiosome-directed revascularization without CPA. In the subanalysis, among patients who underwent endovascular revascularization, CPA (SHR, 0.509; 95% CI, 0.286–0.905) and angiosome-targeted revascularization (SHR, 0.613; 95% CI, 0.394–0.956) were associated with a lower risk of major amputation.

Conclusions: Competing risk analysis showed that a patent pedal arch had significant impact on leg salvage and that the subset of patients undergoing endovascular procedure may most benefit of an angiosome-targeted revascularization.

Conclusiones

- Arco ausente o incompleto fue un predictor independiente de amputación mayor
- Revascularización directa (RD) con arco completo menor tasa de amputación que RD con arco ausente o incompleto

En CLI como determinar cual o cuales vasos deberíamos tratar

Editor's Choice — Impact of Endovascular Pedal Artery Revascularisation on Wound Healing in Patients With Critical Limb Ischaemia

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WHAT THIS PAPER ADDS

Pedal arch patency has been associated with improved wound healing after revascularisation. However, limited data exist regarding the impact of endovascular pedal artery revascularisation (PAR) on clinical outcomes of patients with critical limb ischaemia (CLI). This study demonstrates that successful PAR in patients with CLI achieved higher rates of wound healing and freedom from major amputation than infrapopliteal revascularisation without PAR. Thus, efforts should be made to revascularise the pedal arteries, especially when the pedal arch is completely absent in patients with CLI.

Objective: The present study investigated the impact of endovascular pedal artery revascularisation (PAR) on the clinical outcomes of patients with critical limb ischaemia (CLI).

Methods: This retrospective analysis of a single centre cohort included 239 patients who underwent endovascular revascularisation of infrapopliteal arteries for a chronic ischaemic wound. PAR was attempted in 141 patients during the procedure. After propensity score matching, there were 87 pairs of patients with and without PAR.

Results: After the matching, the two groups showed balanced baseline clinical and lesion characteristics. PAR was achieved in 60.9% of the PAR group. Direct angiogram flow was more frequently obtained in the PAR group than in the non-PAR group (81.6% vs. 34.5%; $p < .001$). Subintimal angioplasty (47.1% vs. 29.9%; $p = .019$) and pedal-plantar loop technique (18.4% vs. 0%; $p < .001$) were more frequent in the PAR group. At the one year follow up, the PAR group showed greater freedom from major amputation (96.3% vs. 84.2%; $p = .009$). The wound healing rate, overall survival, major adverse limb event, and freedom from re-intervention did not differ significantly between the two groups. However, the patient subgroup with successful PAR showed a higher wound healing rate than the non-PAR group (76.0% vs. 67.0%; $p = .031$). In a multivariable Cox proportional hazards regression model, successful PAR (hazard ratio [HR] 1.564, 95% confidence interval [CI] 1.068–2.290; $p = .022$) was identified as an independent factor associated with improved wound healing, whereas gangrene (HR 0.659, 95% confidence interval [CI] 0.471–0.923; $p = .015$), C reactive protein >3 mg/dL (HR 0.591, 95% CI 0.386–0.904; $p = .015$), and pre-procedural absence of pedal arch (HR 0.628, 95% CI 0.431–0.916; $p = .016$) were associated with impaired wound healing.

Conclusion: Successful PAR significantly improved wound healing in patients with CLI. Thus, efforts should be made to revascularise the pedal arteries, especially when the pedal arch is completely absent.

Keywords: Critical limb ischaemia, Endovascular treatment, Peripheral artery disease

Article history: Received 3 January 2019, Accepted 5 July 2019, Available online 22 October 2019

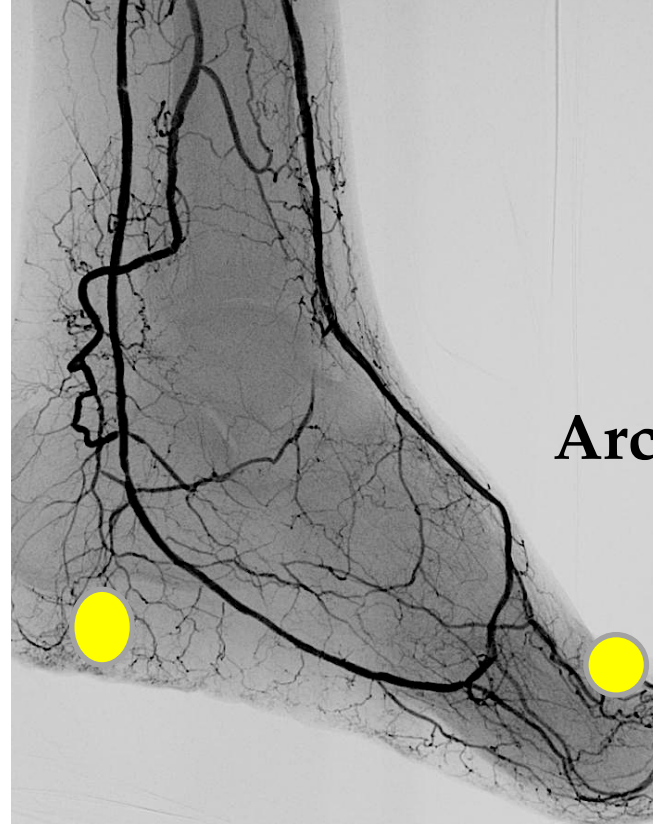
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Conclusiones

- La revascularización del arco es un factor independiente de mejoría en la cicatrización de las heridas
- Los pacientes con revascularización del arco tuvieron menor tasa de amputación mayor
- La tasa de éxito 60%

En CLI como determinar cual o cuales vasos deberíamos tratar

**Angiosoma
TP**



Arco plantar

En CLI como determinar cual o cuales vasos deberíamos tratar

Lesion única

AP

En proyeccion distal al arco plantar

Vaso target
Arco plantar

RP

En proyeccion proximal al arco plantar

Vaso target
Segun Angiosoma

En CLI como determinar cual o cuales vasos deberíamos tratar

Lesiones multiples

AP y RP (un Angiosoma)

Vaso target: El vaso tibial/peronea del angiosoma de la lesion del retropie y el arco plantar

Ej: Lesion trofica region interna de la planta del pie y 4 dedo dorsal o plantar
Arteria tibial posterior y arco plantar

En CLI como determinar cual o cuales vasos deberíamos tratar

Lesiones multiples

AP y RP (Mas de un Angisoma)

Vaso target: Ambos vasos del angiosoma de la lesion del retropie y el arco plantar

Ej: Lesion trofica region maleolar externa y dorso del retropie mas lesion en 3 dedo

Arteria peronea, tibial anterior y arco plantar



En CLI como determinar cual o cuales vasos deberíamos tratar

Estrategia segun lesiones

Numero, localizacion y tipo

Estrategia segun factibilidad

Ptes dialiticos vs no dialiticos

Estrategia segun paciente

Edad y factores de riesgo

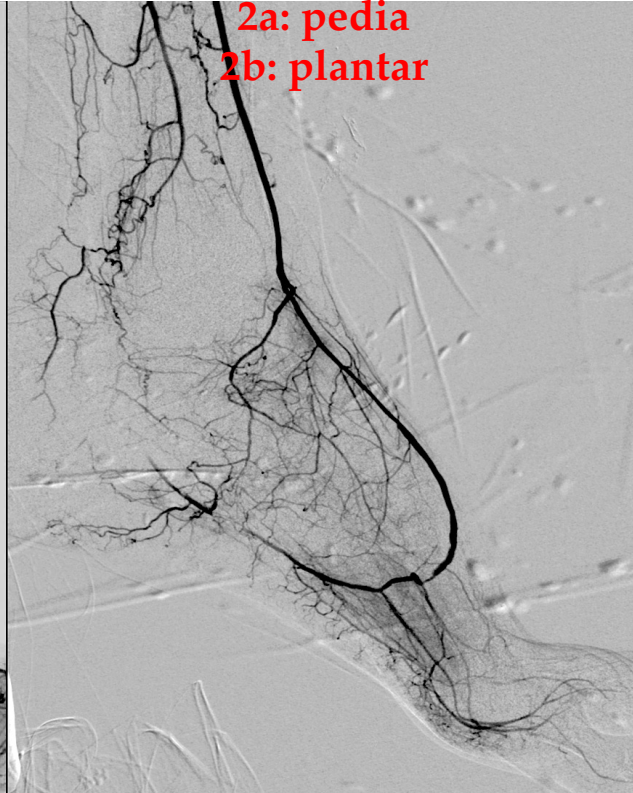
Estrategia final

En CLI como determinar cual o cuales vasos deberíamos tratar

Arco tipo 1



Arco tipo 2



Arco tipo 3



En CLI como determinar cual o cuales vasos deberíamos tratar

Original Article | Intervention

<https://doi.org/10.3348/kjr.2018.19.1.47>
pISSN 1229-6929 · eISSN 2005-8330
Korean J Radiol 2018;19(1):47-53

Korean Journal of Radiology
KJR

Impact of Pedal Arch Patency on Tissue Loss and Time to Healing in Diabetic Patients with Foot Wounds Undergoing Infrapopliteal Endovascular Revascularization

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Objective: To retrospectively evaluate the impact of pedal arch quality on tissue loss and time to healing in diabetic patients with foot wounds undergoing infrapopliteal endovascular revascularization.

Materials and Methods: Between January 2014 and June 2015, 137 consecutive diabetic patients with foot wounds underwent infrapopliteal endovascular revascularization (femoro-popliteal or below-the-knee, arteries). Postprocedural angiography of the foot was used to divide the patients into the following three groups according to the pedal arch status: complete pedal arch (CPA), incomplete pedal arch (IPA), and absent pedal arch (APA). Time to healing and estimated 1-year outcomes in terms of freedom from minor amputation, limb salvage, and survival were evaluated and compared among the three groups.

Results: Postprocedural angiography showed the presence of a CPA in 42 patients (30.7%), IPA in 60 patients (43.8%), and APA in 35 patients (25.5%). Healing within 3 months from the procedure was achieved in 21 patients with CPA (50%), 17 patients with IPA (28.3%), and in 7 patients with APA (20%) ($p = 0.01$). There was a significant difference in terms of 1-year freedom from minor amputation among the three groups (CPA 84.1% vs. IPA 82.4% vs. APA 48.9%, $p = 0.001$). Estimated 1-year limb salvage was significantly better in patients with CPA (CPA 100% vs. IPA 93.8% vs. APA 70.1%, $p < 0.001$). Estimated 1-year survival was significantly better in patients with CPA (CPA 90% vs. IPA 80.8% vs. APA 62.7%, $p = 0.004$).

Conclusion: Pedal arch status has a positive impact on time to healing, limb salvage, and survival in diabetic patients with foot wounds undergoing infrapopliteal endovascular revascularization.

Keywords: Diabetic foot; Tibial artery; Revascularization; Pedal arch; Plantar arch

Impacto del arco plantar permeable

	AC	AI	AA
WH	50%	28%	20%
FMa	84%	82%	49%
Fma	100%	93%	70%
Sob.	90%	80%	62%

Impaired pedal arch affects the treatment effect in patients with single tibial artery revascularization demonstrated by intraoperative perfusion

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Contributions: (I) Conception and design: J Shao, J Ma; (II) Acquisition of study materials or patients: K Li, L Xu, J Chen, C Wang; (III) Analysis and interpretation: J Shao, J Ma; (IV) Drafting of the manuscript: J Shao, J Ma; (V) Data analysis and interpretation: J Shao, J Ma

[#]These authors contributed equally and significantly to the work.

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Background

There is a controversy about the optimal revascularization strategy for patients with infrapopliteal artery occlusion. Intraoperative perfusion measurement is a useful method to evaluate the effect of revascularization.

Methods

Intraoperative perfusion measurement was used to evaluate the effect of revascularization in patients with infrapopliteal artery occlusion. The patients were classified into two groups according to the presence of the pedal arch: permeable and impermeable.

Results

Surgery of infrapopliteal artery occlusion was considered successful if the pedal arch was patent and the flow was >50.25 mL/min. In patients with permeable pedal arch, the flow was significantly higher than in patients with impermeable pedal arch.

Conclusions

The presence of the pedal arch is an important factor affecting the treatment effect of infrapopliteal artery revascularization.

Trial Registration

Information on this trial can be found at [ClinicalTrials.gov](https://www.clinicaltrials.gov/ct2/show/study/NCT02010000), NCT02010000.

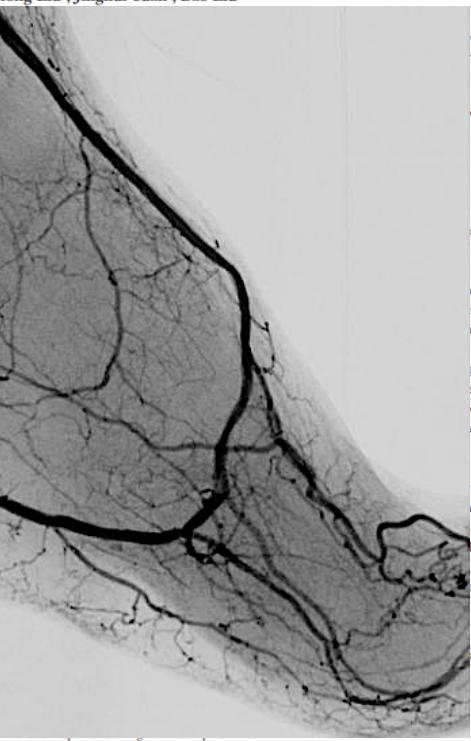
Keywords

infrapopliteal artery occlusion, pedal arch, revascularization, intraoperative perfusion measurement

Submitted: 2020-03-10

doi: 10.2196/19888

View this article at <https://doi.org/10.2196/19888>

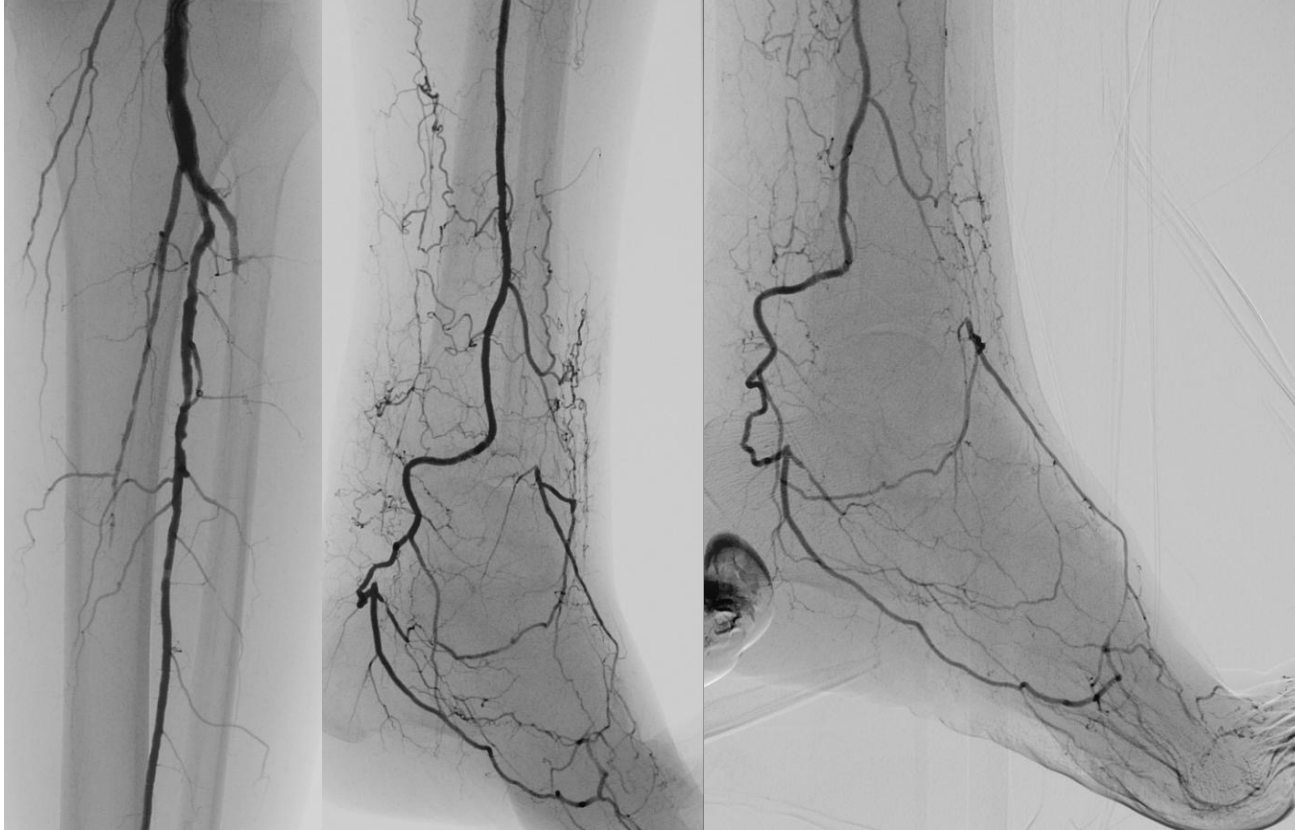


Perfusión del pie por DynaCT

Sin arco plantar permeable:
RD superior a la RI

Con arco plantar permeable:
RD igual a la RI

En CLI como determinar cual o cuales vasos deberíamos tratar



**Arco tipo 1
Lesión en
antepié**

En CLI como determinar cual o cuales vasos deberíamos tratar



En CLI como determinar cual o cuales vasos deberíamos tratar

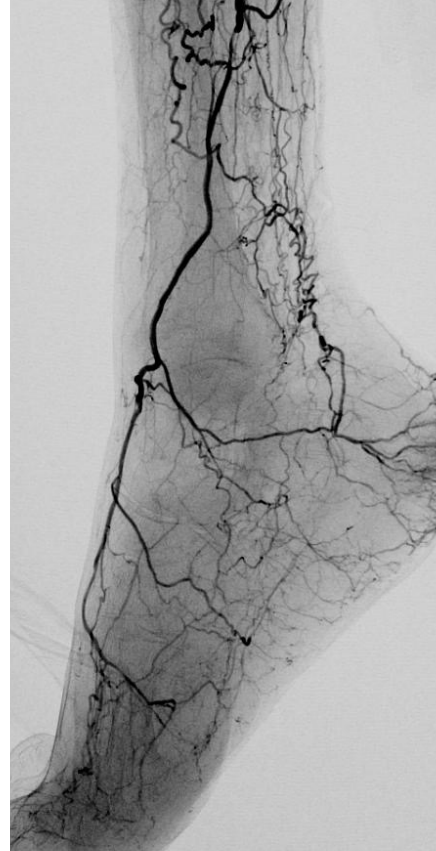
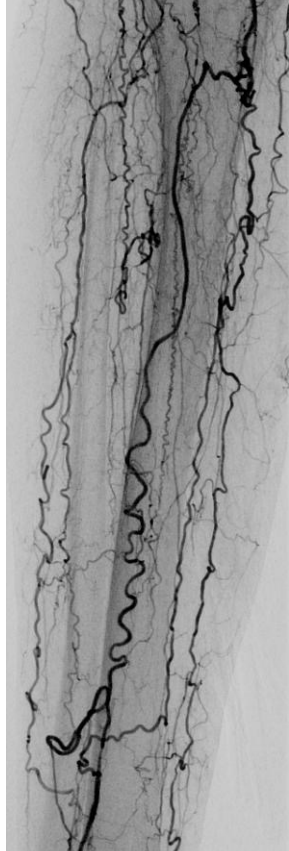
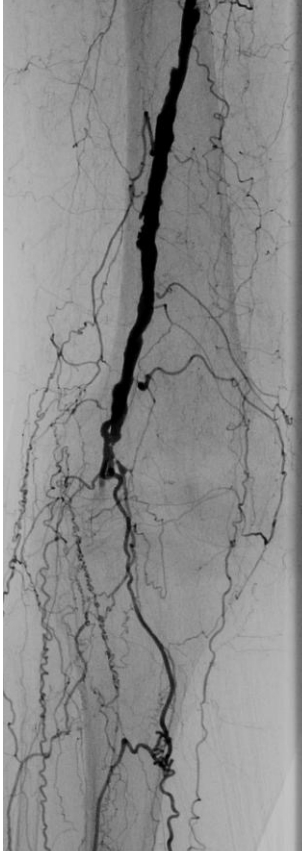


Arco tipo 3
Lesión en antepié
y retropié

En CLI como determinar cual o cuales vasos deberíamos tratar

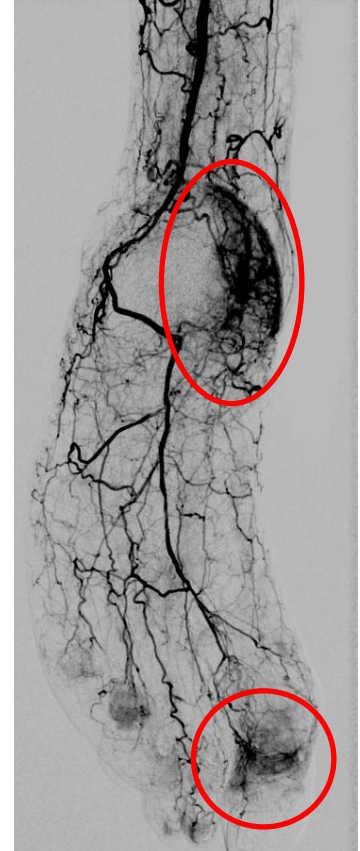
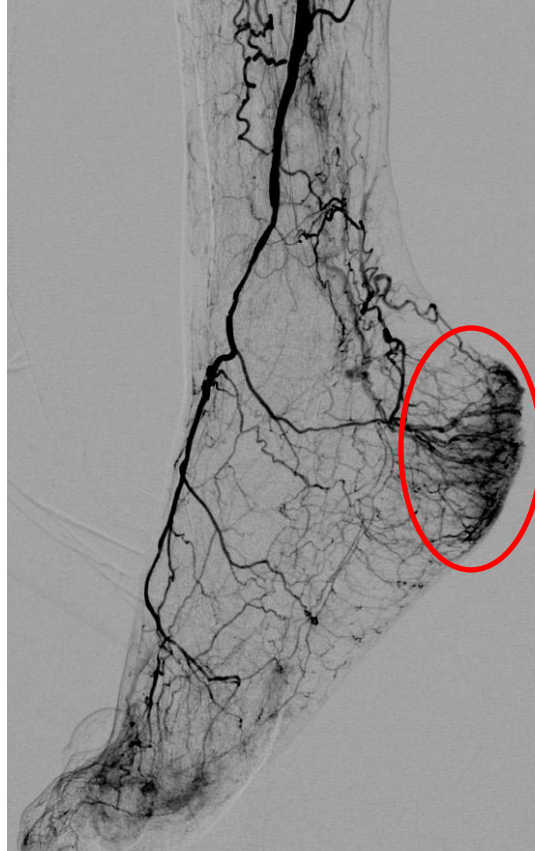
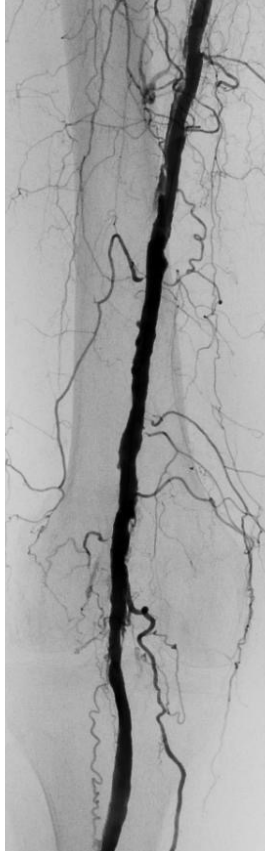


En CLI como determinar cual o cuales vasos deberíamos tratar

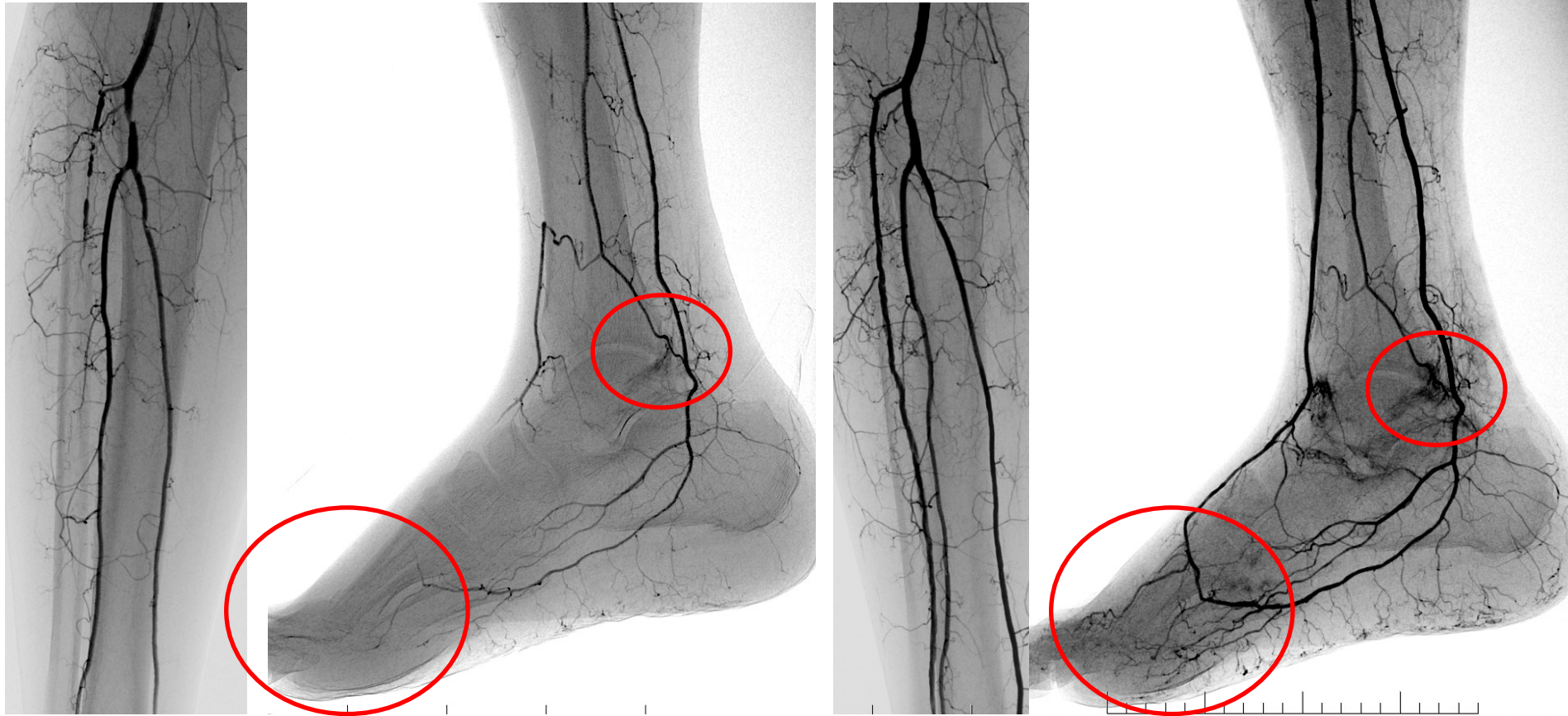


**Arco tipo 2
Lesión en
antepié y
retropié
97 anos
Dolor de
reposo**

En CLI como determinar cual o cuales vasos deberíamos tratar



En CLI como determinar cual o cuales vasos deberíamos tratar



En CLI como determinar cual o cuales vasos deberíamos tratar

**Retro-pie
Angiosoma**



Conclusión

**Ante-pie
Arco plantar**

