

CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE  
CONTROVERSIES & UPDATES IN VASCULAR SURGERY

**JANUARY 19-21 2017**

MARRIOTT RIVE GAUCHE & CONFERENCE CENTER

**PARIS, FRANCE**



## **Controversy. US or angiography guided PTA**

Using US and angiography is more efficient



## Disclosure

Speaker name:

...JOSE GARCIA-MEDINA

- I have the following potential conflicts of interest to report:
  - X Consulting Angiomed GmbH & CO
  - Employment in industry
  - Shareholder in a healthcare company
  - Owner of a healthcare company
  - Other(s)
- I do not have any potential conflict of interest



# ANGIOGRAPHY

- Radiological explorations.
- Imaging of the vessels with injection of contrast media.







# FISTULOGRAPHY





# ULTRASOUND-GUIDED ANGIOPLASTY

- To avoid material contrast.
- To avoid X-ray.
- To reduce costs.

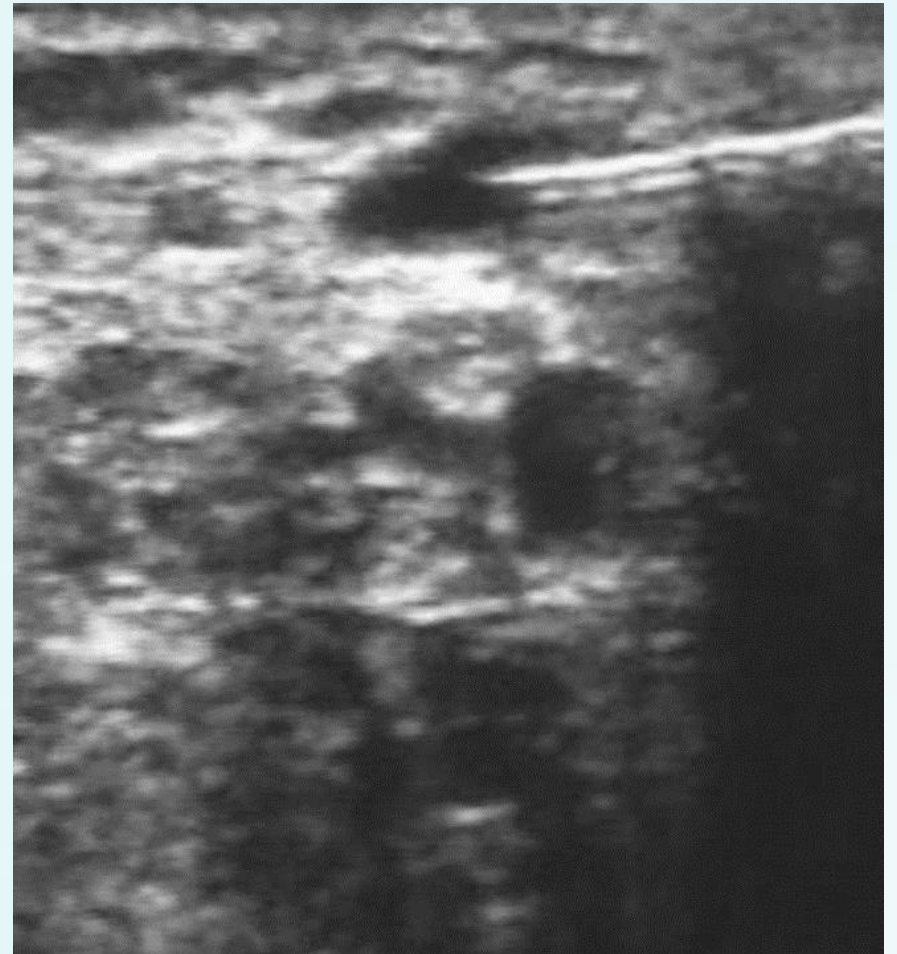






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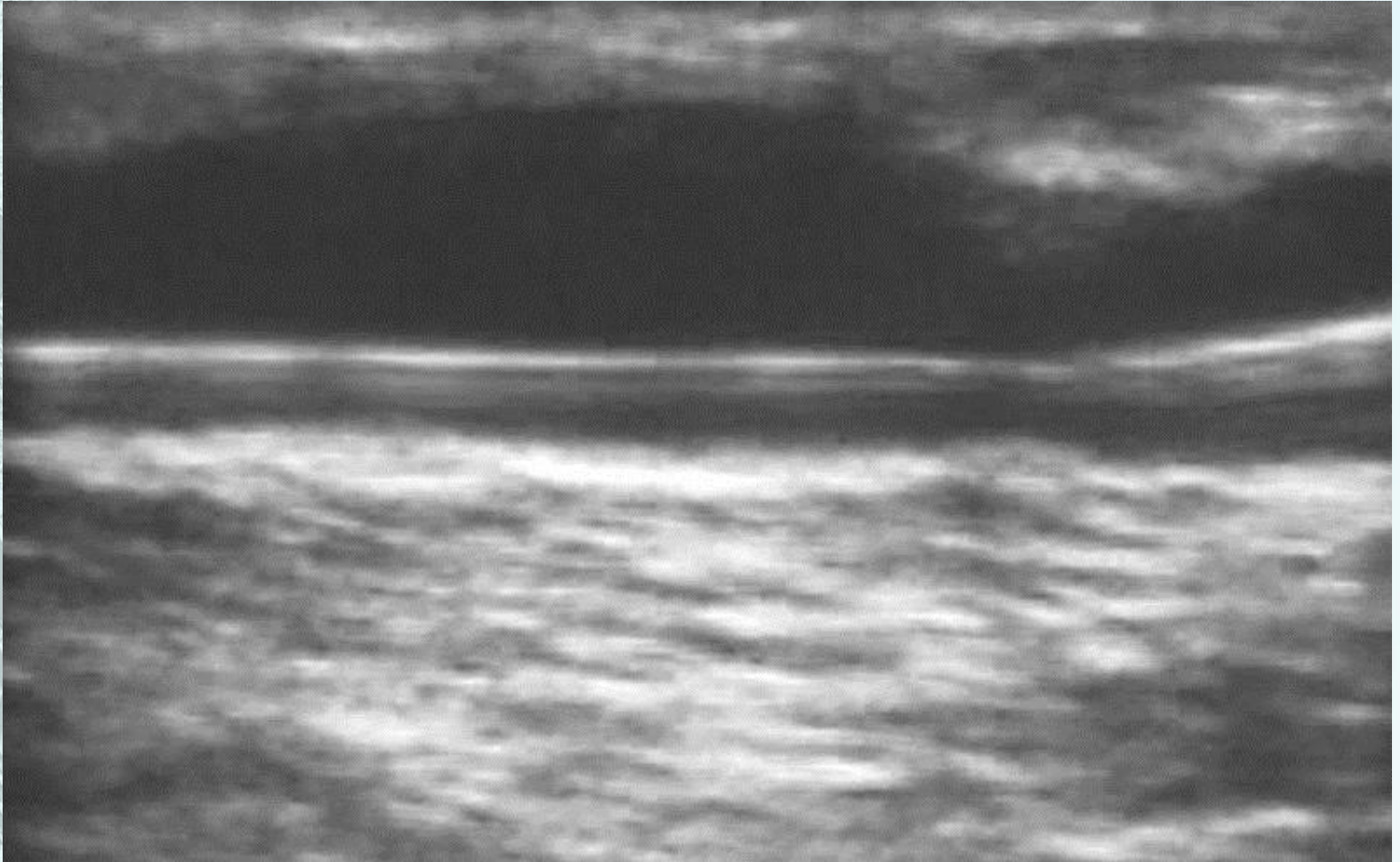
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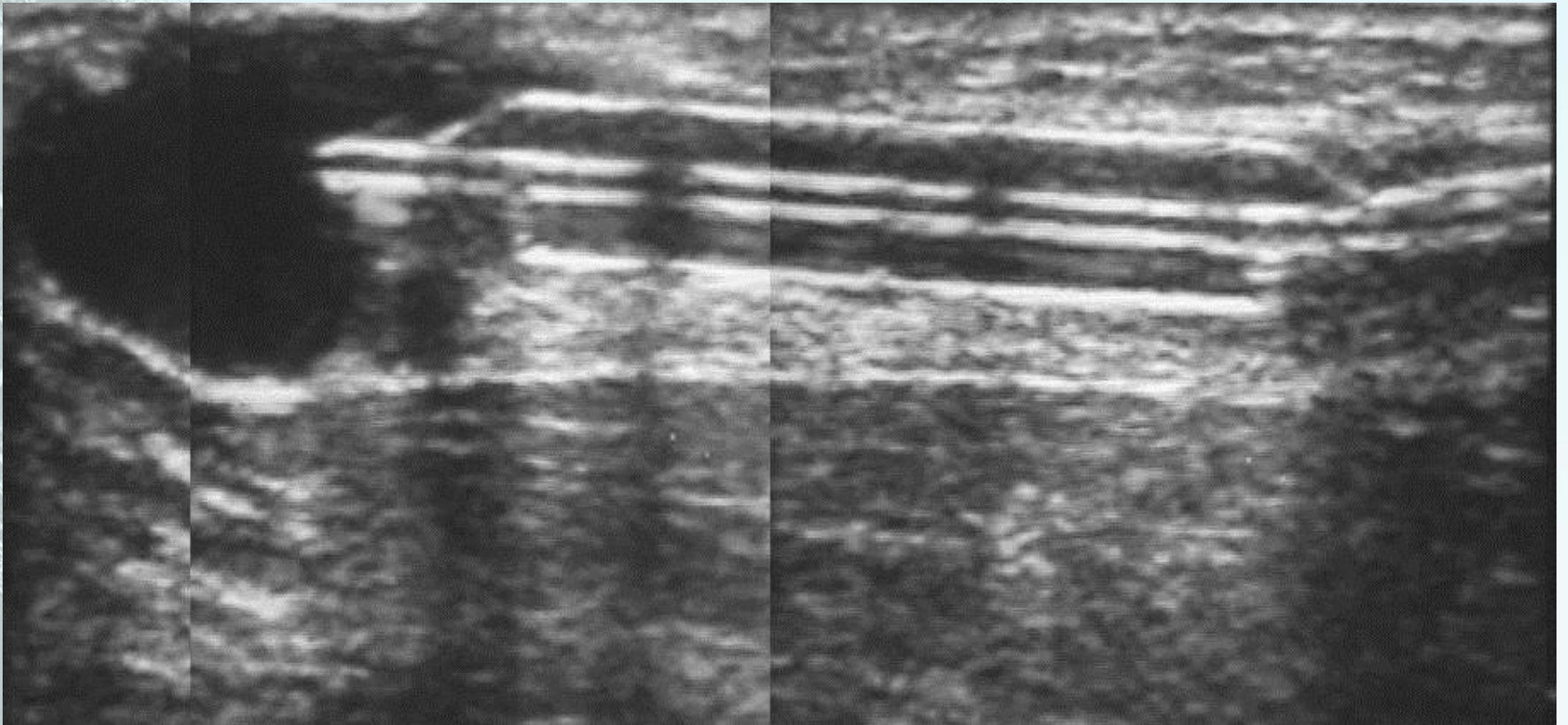
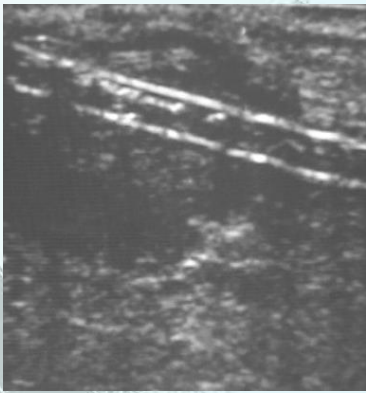






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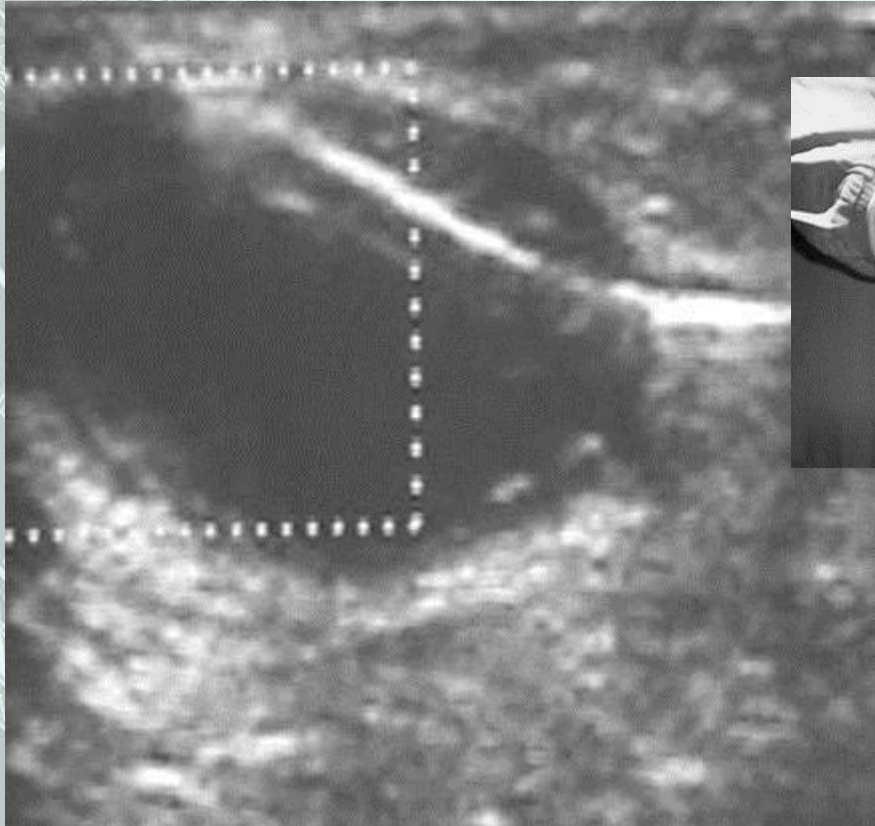






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# US-GUIDED PTA. DISADVANTAGES

More than two hands are needed to perform the procedure.







# US-GUIDED PTA. DISADVANTAGES

Ultrasonography does not provide the fistula panoramic view as fluoroscopy.







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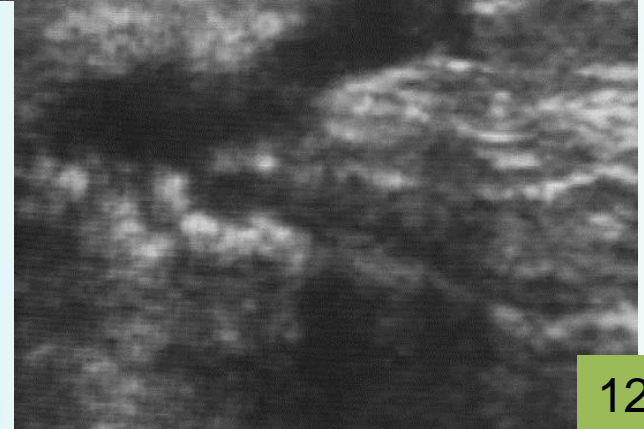
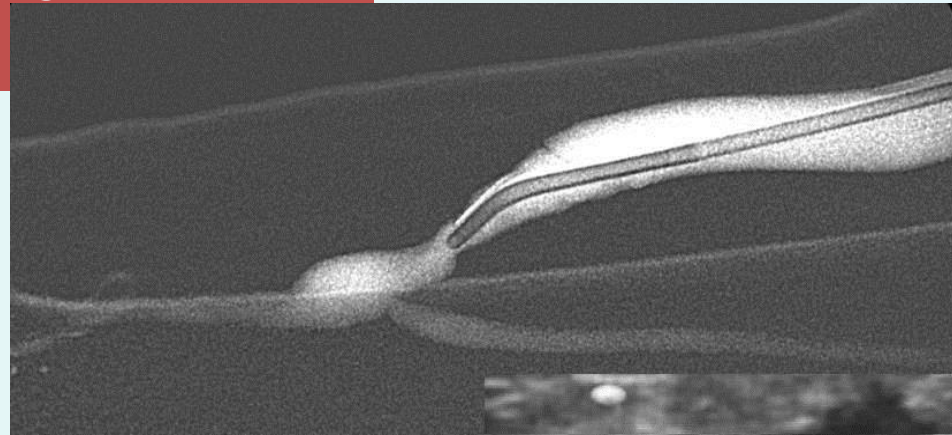
**ARTERIAL CIRCUIT**

**VENOUS CIRCUIT**



# US-GUIDED PTA. DISADVANTAGES

Difficulties to traverse and to progress the wire from the vein into the proximal artery through the anastomosis.





7 mm  
20 atm.

PRE PTA

To enter a wrong way, take a collateral and dilate it with the risk of rupture.

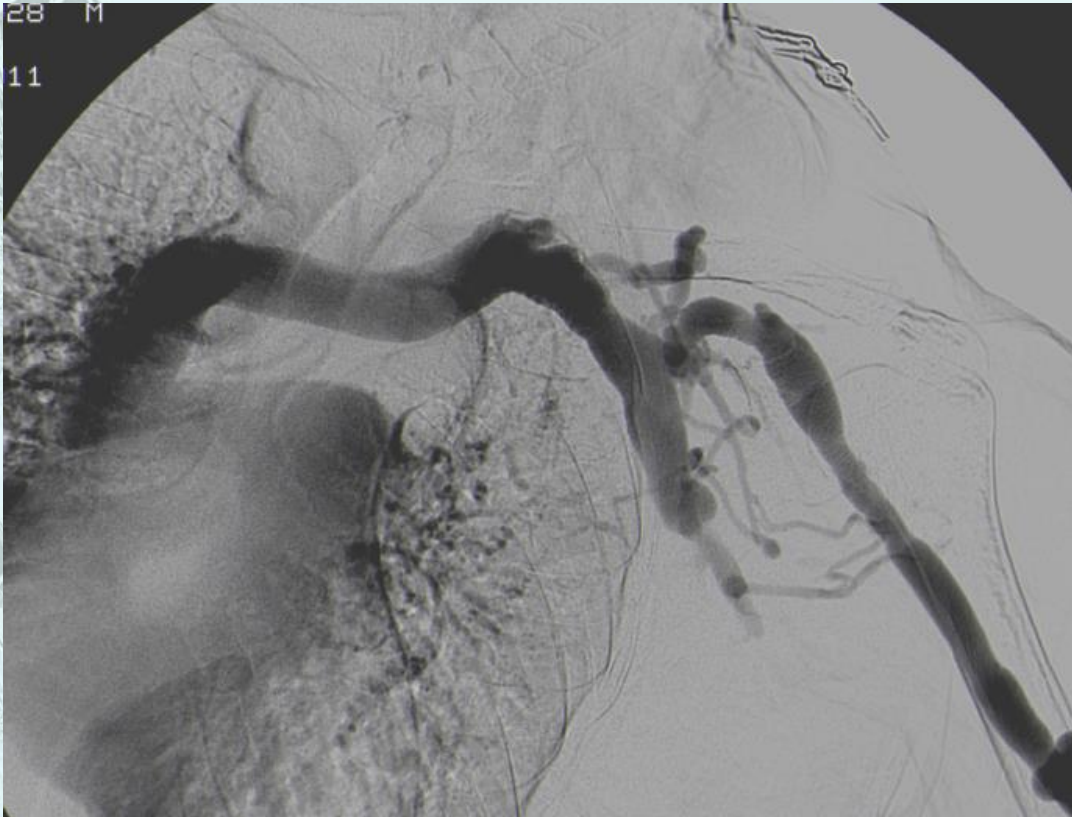
POST PTA





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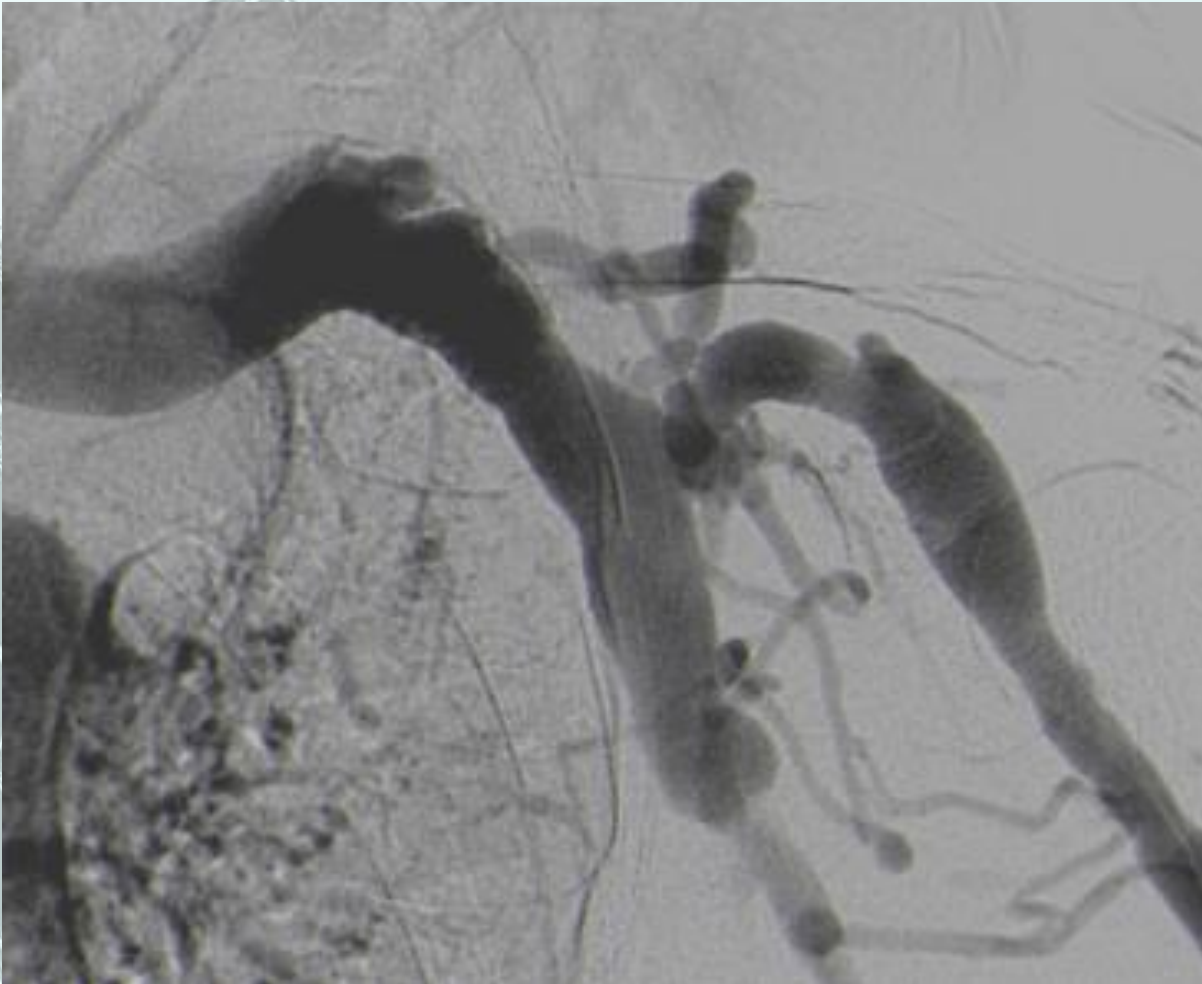


The guidewire easily coils into aneurysms.

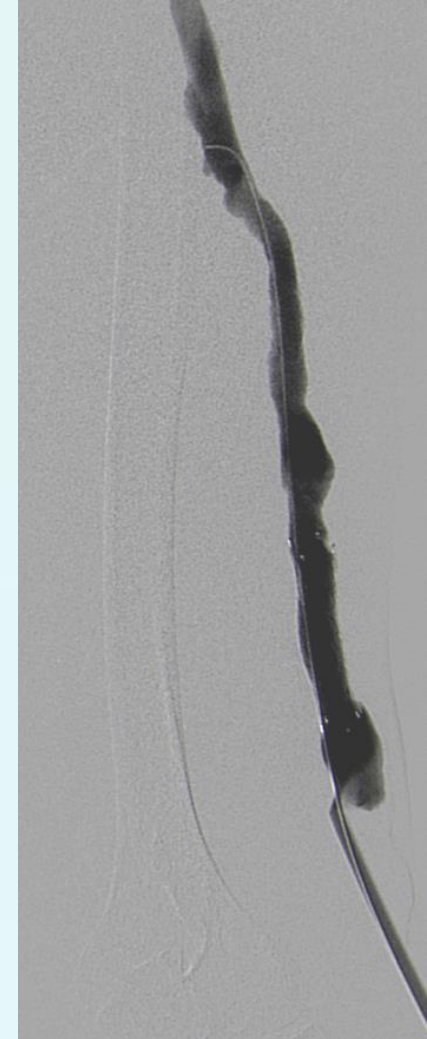


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Severe stenosis may require the assistance of fluoroscopy.



Rupture post PTA





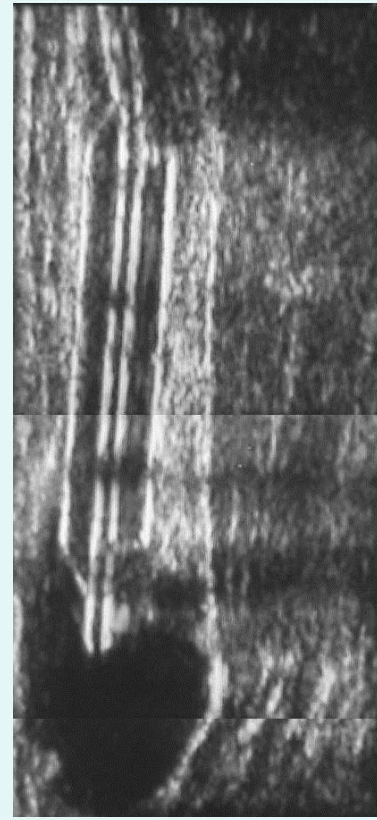
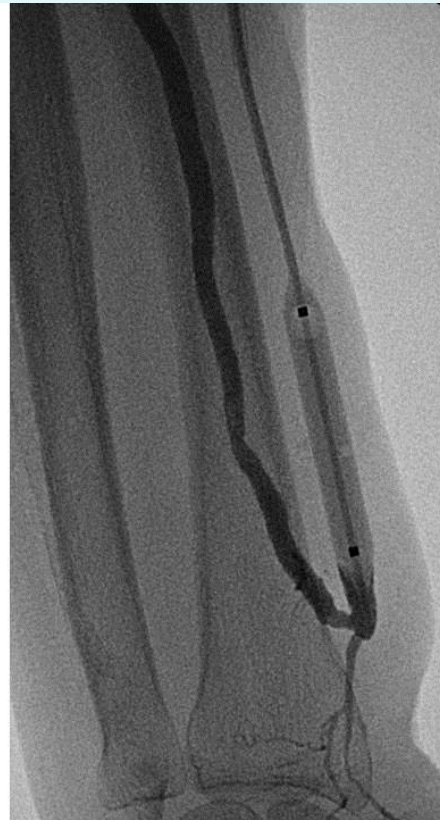
# US-GUIDED PTA. OURS INDICATIONS

- Restenosis in already known fistulae.
- Nonmature Fistulas.
- Thromboses.
- Prosthetic grafts.
- Patients in pre-dialysis.
- Patients with contrast material sensitivity.



# US-GUIDED PTA. OURS INDICATIONS

- Restenosis in already known fistulae.





# US-GUIDED PTA. OURS INDICATIONS

- Thromboses.

[CardioVascular and Interventional Radiology](#)

December 2013, Volume 36, [Issue 6](#), pp 1658–1663

## Value of Duplex Ultrasound Assistance for Thromboaspiration and Dilation of Thrombosed Native Arterio-Venous Fistulae

[Authors](#)

[Authors and affiliations](#)

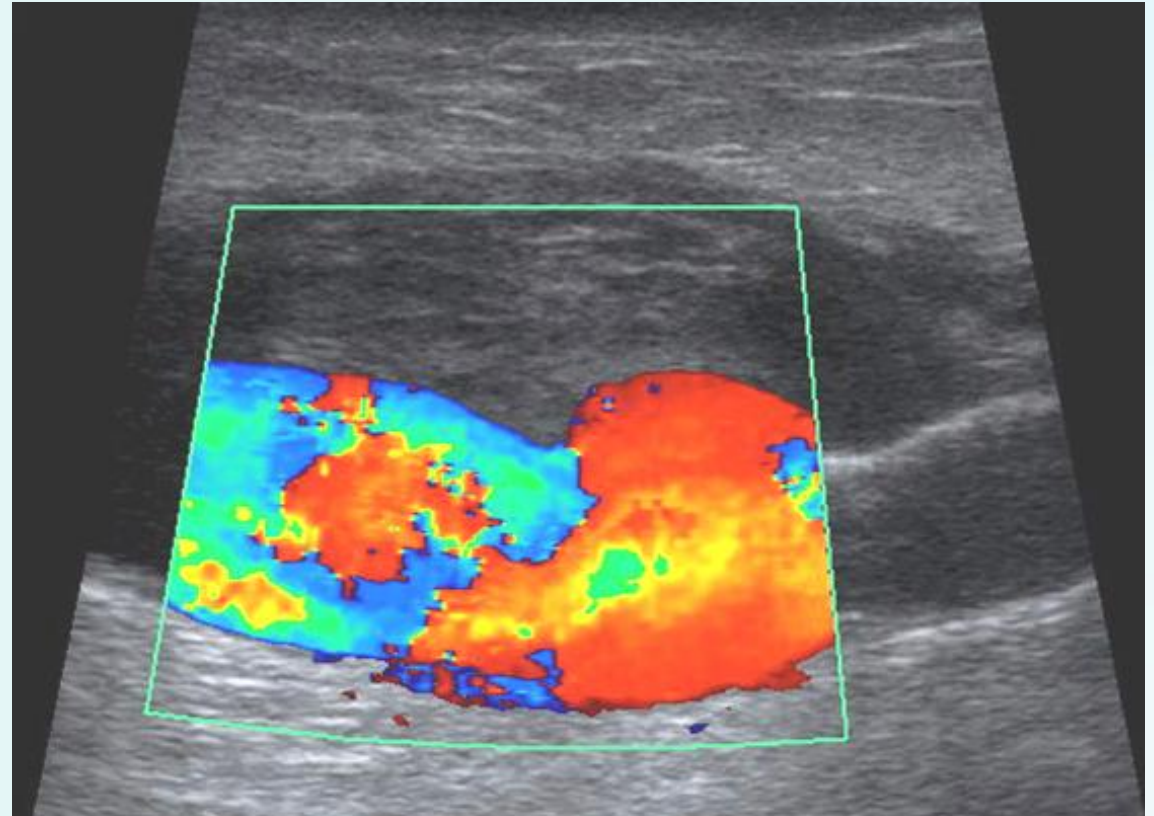
J. García-Medina 





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- Thromboses.



[Value of duplex ultrasound assistance for thromboaspiration and dilation of thrombosed native arterio-venous fistulae.](#)

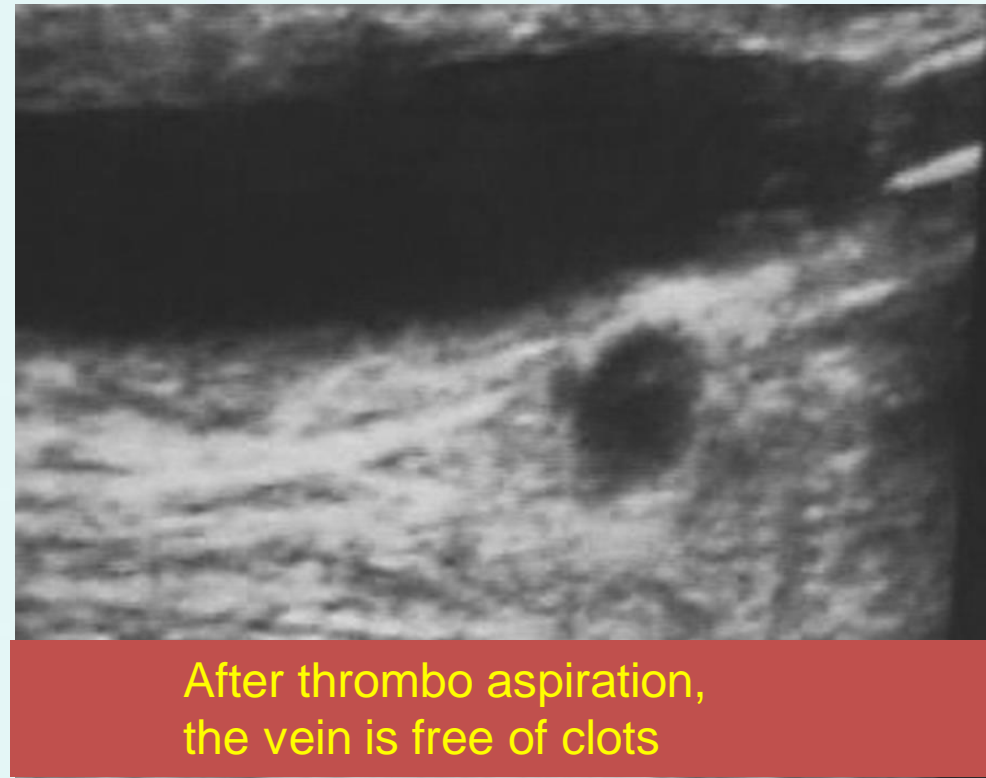
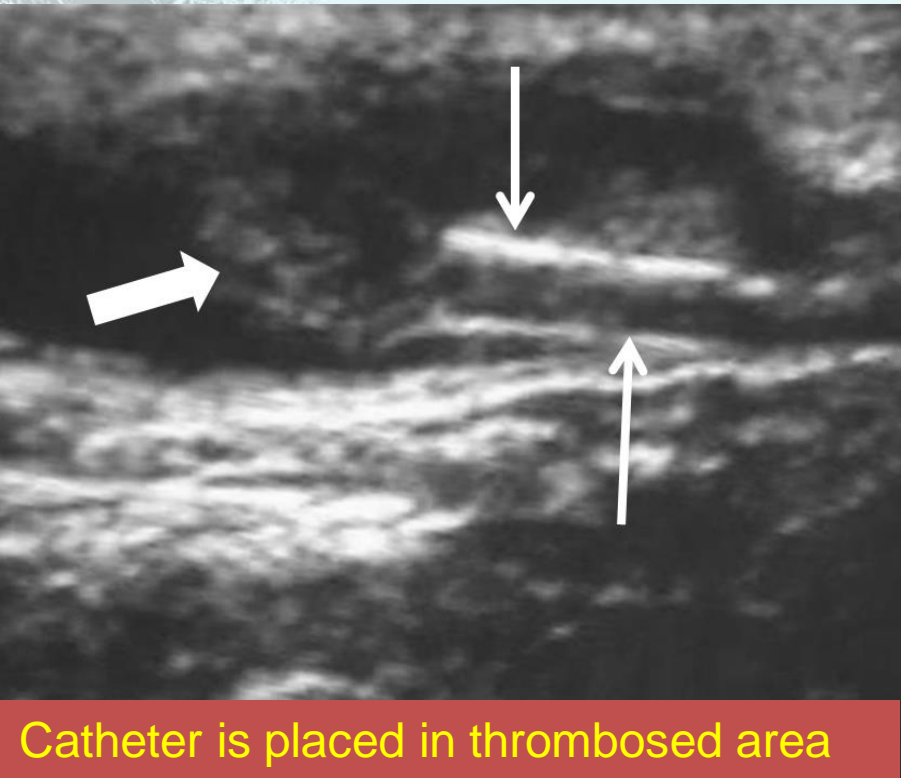
García-Medina J.

Cardiovasc Intervent Radiol. 2013 Dec;36(6):1658-63



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- Thromboses.



[Value of duplex ultrasound assistance for thromboaspiration and dilation of thrombosed native arterio-venous fistulae.](#)

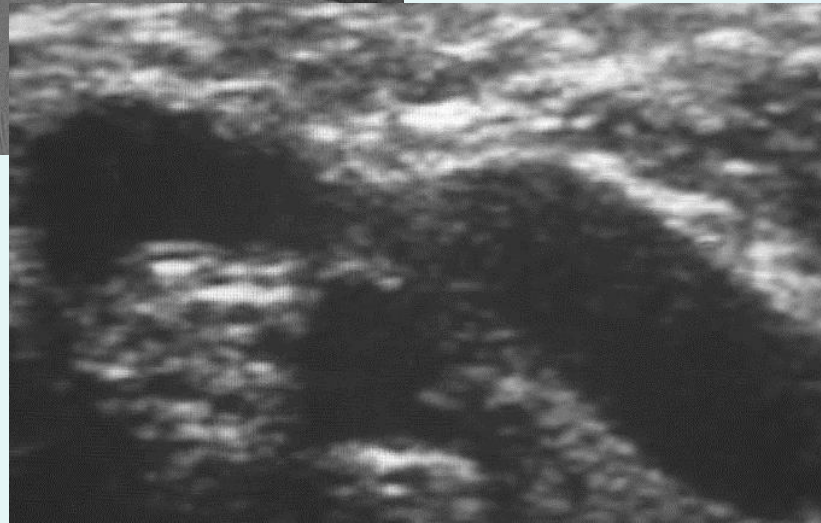
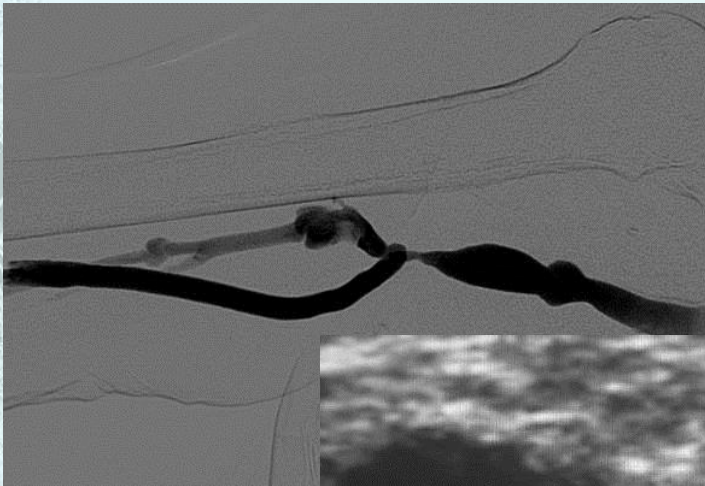
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# US-GUIDED PTA. OURS INDICATIONS

- Prosthetic grafts.

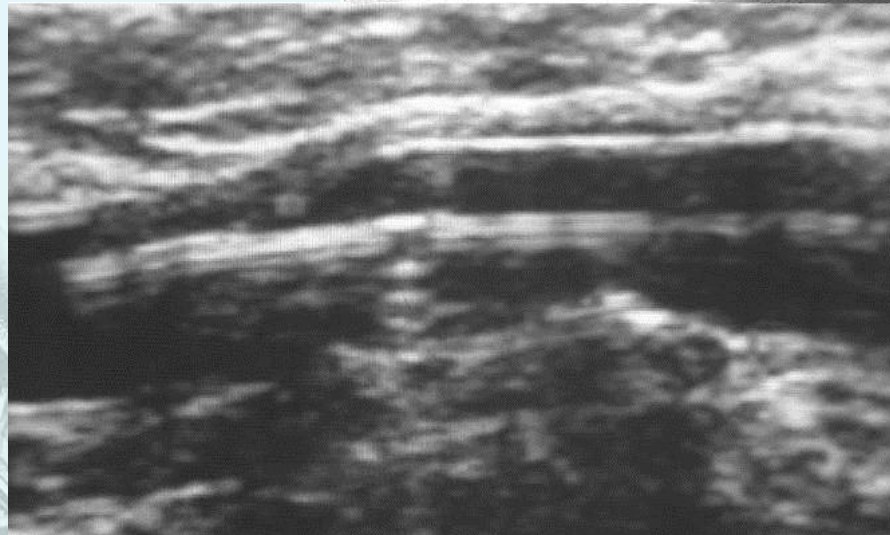
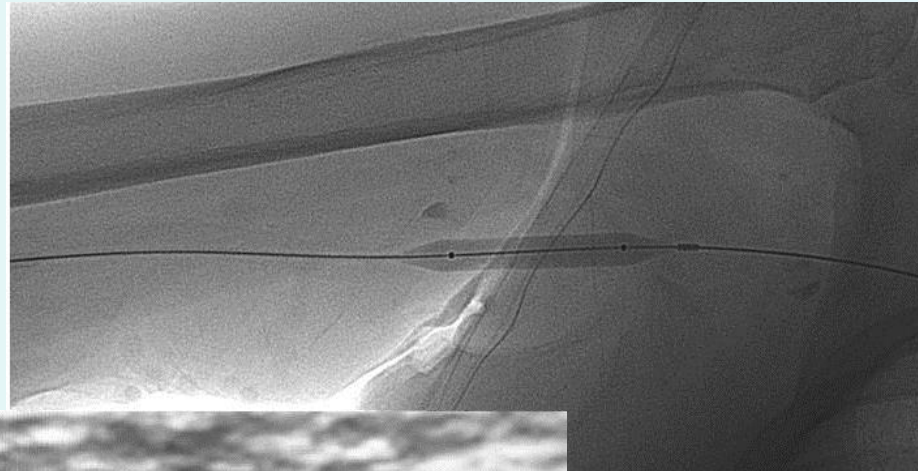






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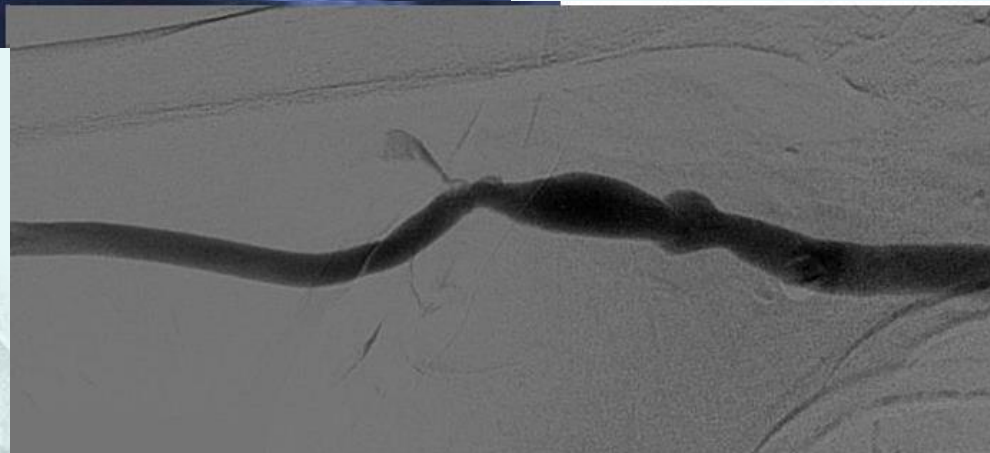
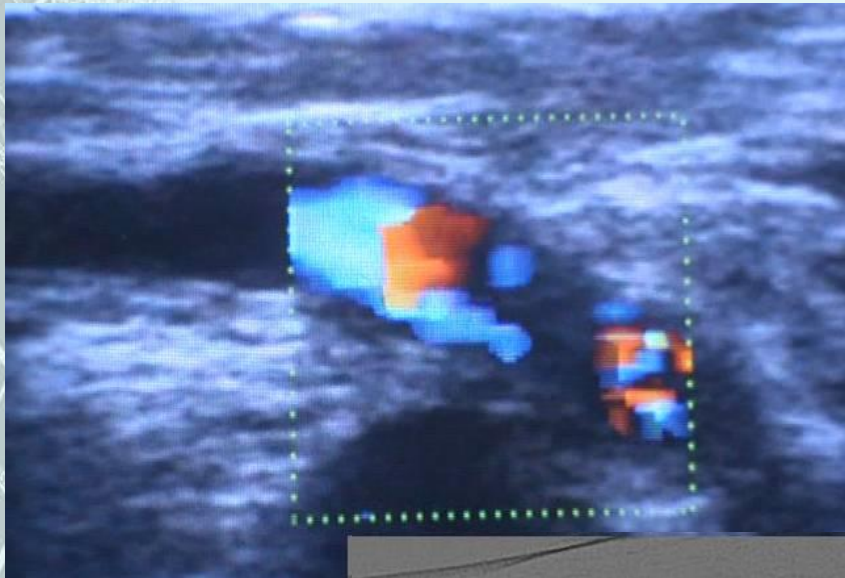
- Prosthetic grafts.





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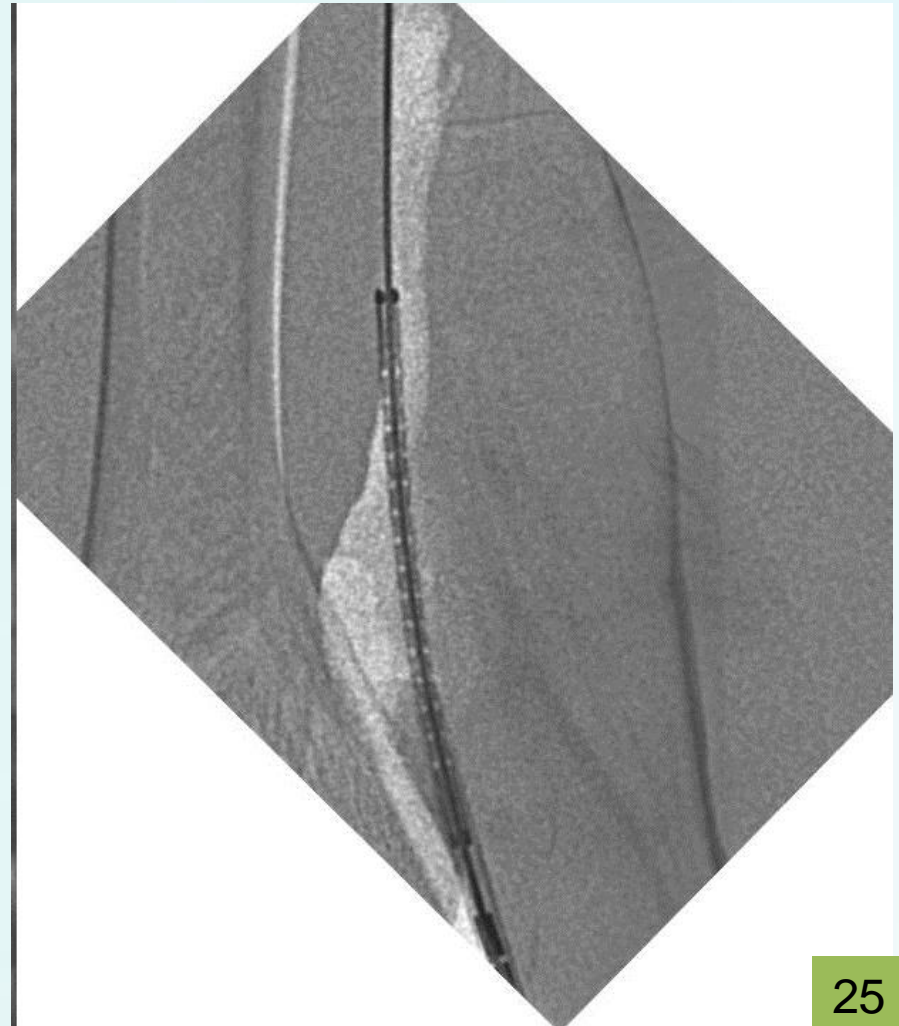
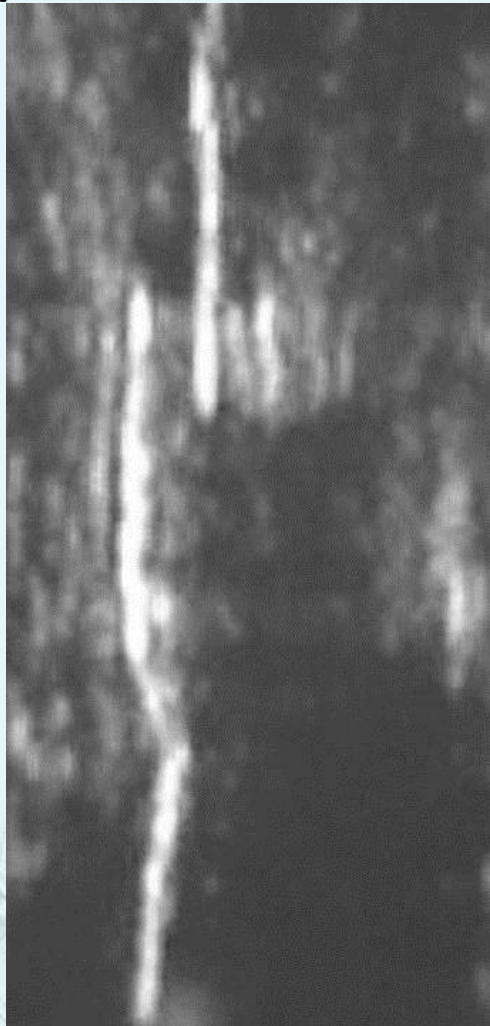
- Prosthetic grafts.





# US-GUIDED PTA. OURS INDICATIONS

- Stent implantation







# USING US AND ANGIOGRAPHY IS MORE EFFICIENT

Cardiovasc Intervent Radiol  
DOI 10.1007/s00270-016-1541-9



WORK IN PROGRESS

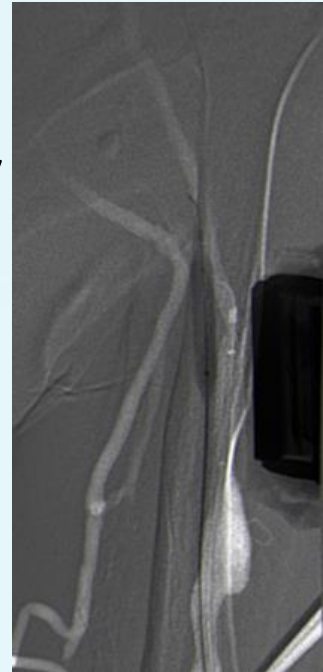
## Ultrasound-Guided Angioplasty of Dysfunctional Vascular Access for Haemodialysis. The Pros and Cons

J. García-Medina<sup>1</sup>  · J. J. García-Alfonso<sup>2</sup>



## USING US AND ANGIOGRAPHY IS MORE EFFICIENT

- Ultrasound examination
- Ultrasound-guided or US plus fluoroscopy
- Lead apron X-ray protection



[Ultrasound-Guided Angioplasty of Dysfunctional Vascular Access for Haemodialysis. The Pros and Cons.](#)

García-Medina J, García-Alfonso JJ.

Cardiovasc Intervent Radiol. 2016 Dec 21. doi: 10.1007/s00270-016-1541-9.



## USING US AND ANGIOGRAPHY IS MORE EFFICIENT

- To fully evaluate the vascular access haemodynamics from aortic arch to superior vena cava with fistulography.
- To traverse large aneurysms.
- When Ultrasound-guidance is non feasible.

[Ultrasound-Guided Angioplasty of Dysfunctional Vascular Access for Haemodialysis. The Pros and Cons.](#)

García-Medina J, García-Alfonso JJ.

Cardiovasc Intervent Radiol. 2016 Dec 21. doi: 10.1007/s00270-016-1541-9.



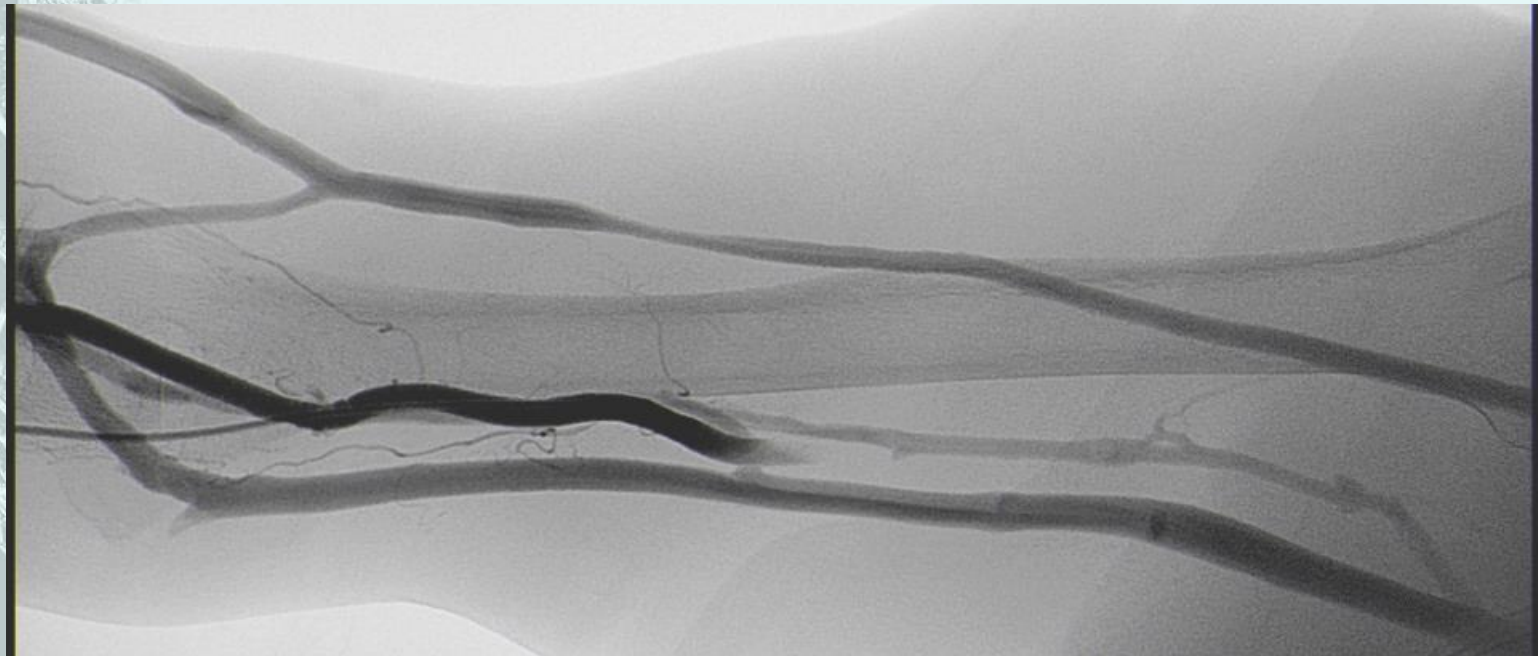
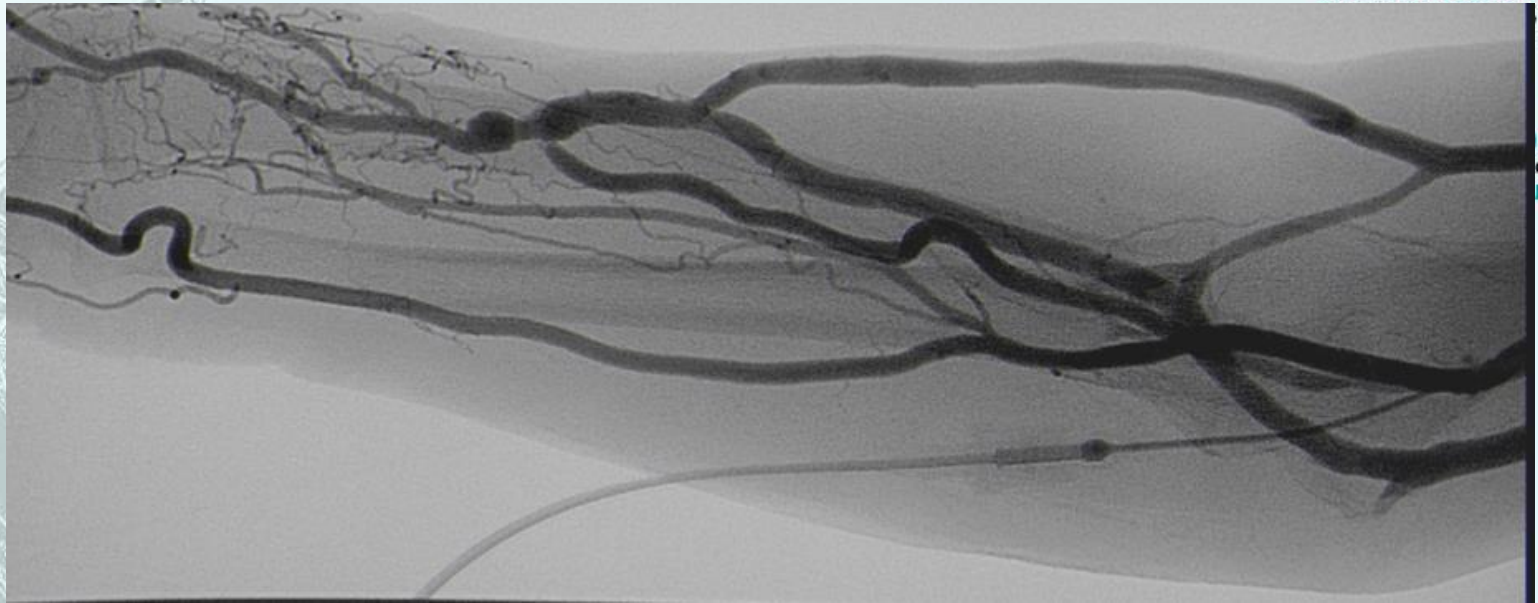
To fully evaluate the vascular access haemodynamics from aortic arch to superior vena cava with fistulography.



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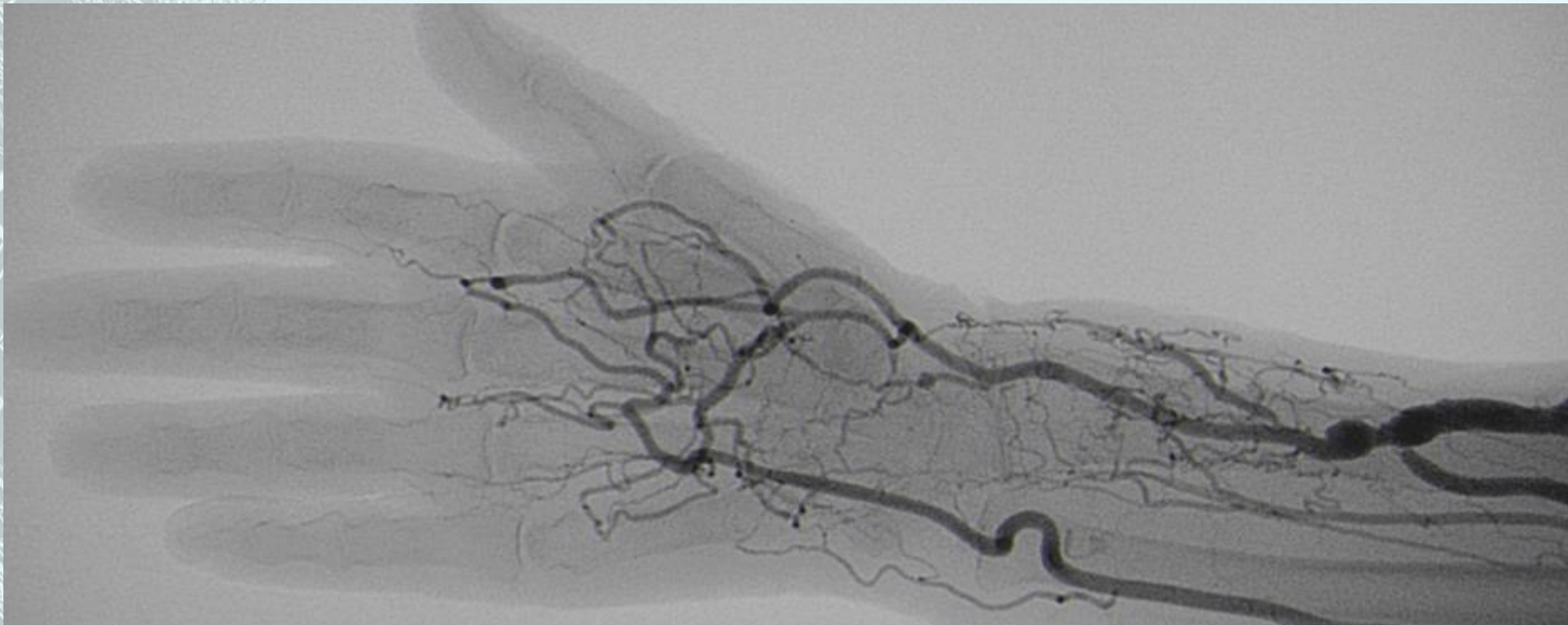






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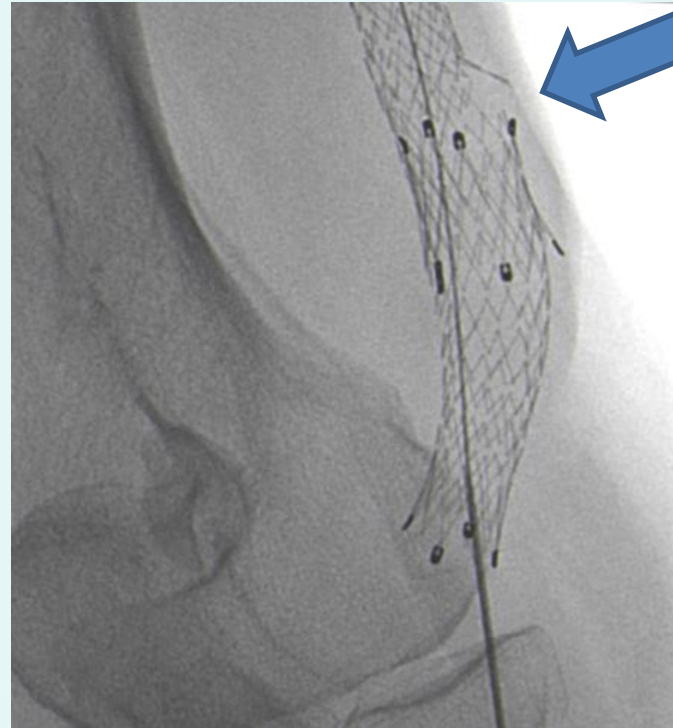
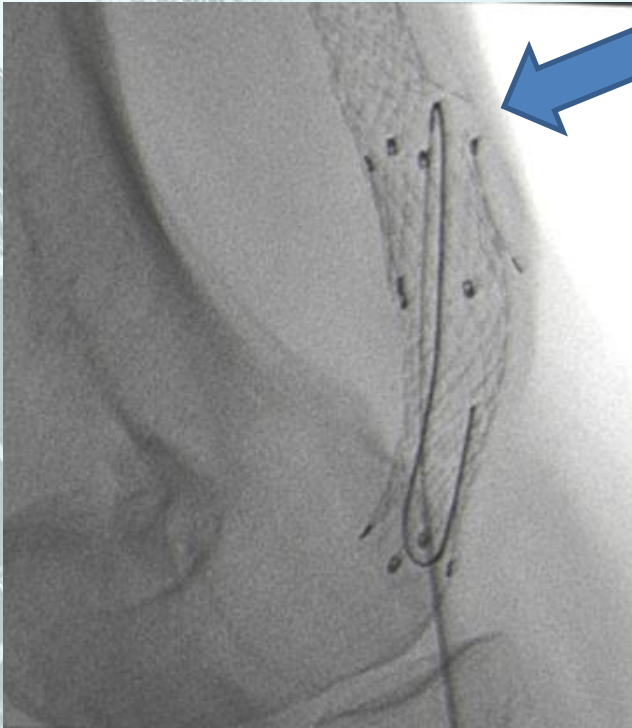
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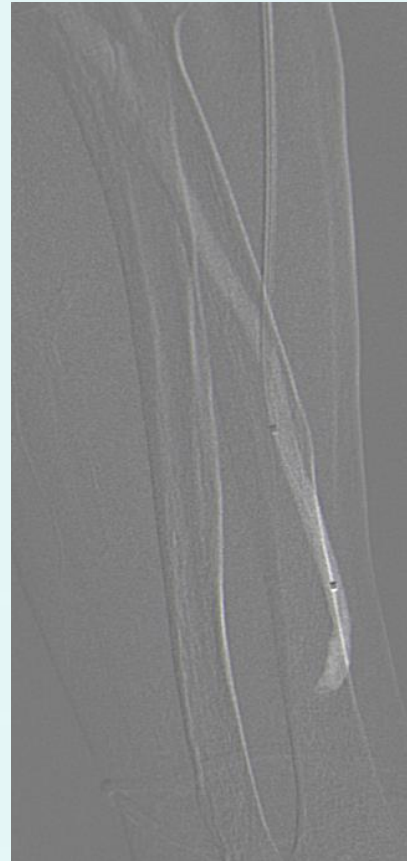
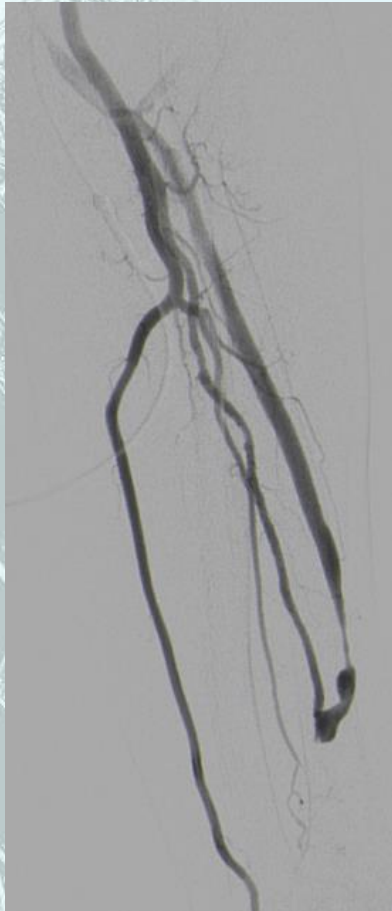
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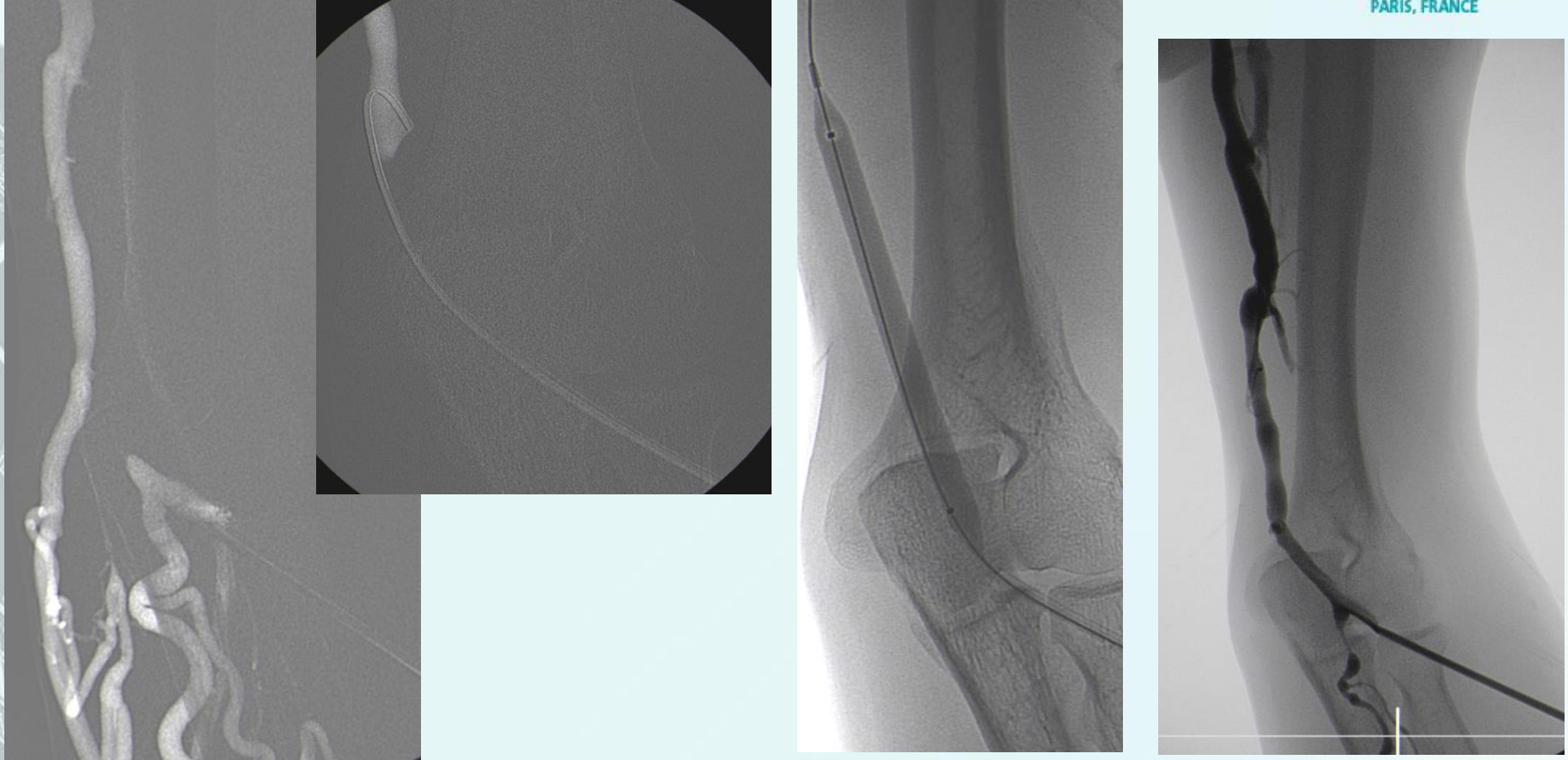
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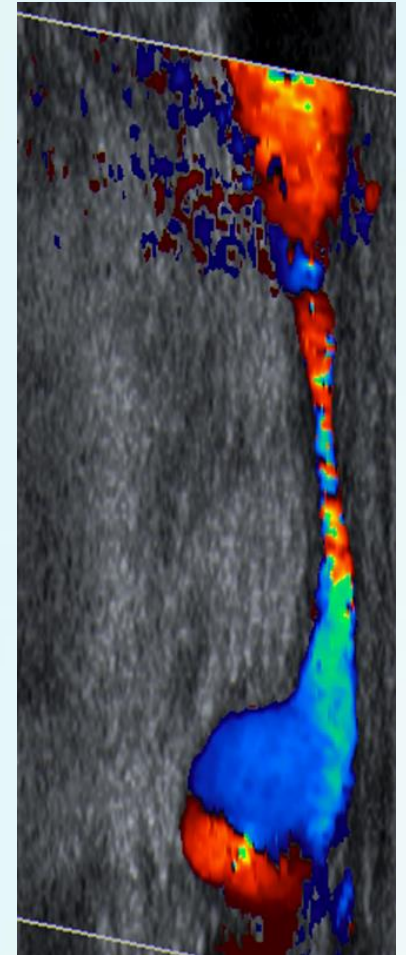
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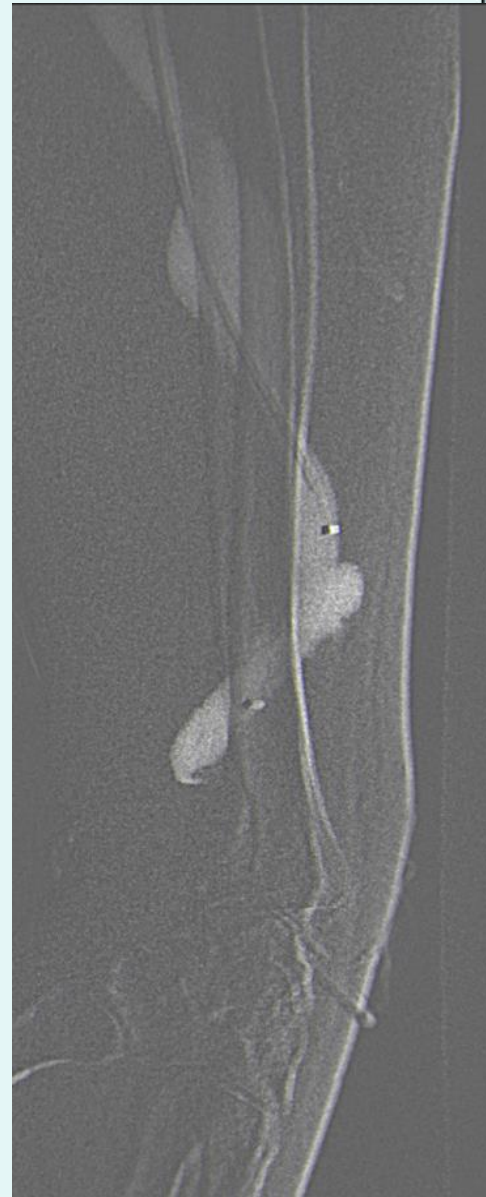




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# CONCLUSION

- Doppler colour ultrasound (alone or in combination with fluoroscopy) is a useful tool for endovascular treatment of vascular accesses stenosis.
- However, it cannot be claimed today that ultrasound can replace fluoroscopy in all cases.
- Technical difficulties may occur during the procedure, which suggests remaining cautious.
- The performance of ultrasound-guided angioplasty must be made by a well-trained interventional radiologist.



**Merci beaucoup**  
**Thank you very much**