

ENDOVASCULAR TREATMENT OF COMPLETE INTERRUPTION OF THORACIC AORTA POST SURGICAL REPAIR OF AORTIC COARCTATION

Percutaneous treatment of atretic segment by radiofrequency perforation and PTFE covered Stent angioplasty

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Patient: E.A. **Sex:** Male **Age:** 18 y.o.

History: At 8 y.o. was operated of Typical severe Aortic Coarctation. Left thoracotomy and subclavian flap aortoplasty technique was performed. A few days later, clinical signs of recoarctation were noted. No reoperation was proposed, and the patient was discharged, with antihypertensive medication.

Ten years after surgery , patient presented severe hypertension no responsive to medication and was referred to our Hospital.

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- At clinical examination, patient presents absent femoral and left arm pulses and 180/100 mmHg arterial pressure at right arm .
- MRI shows complete interruption of thoracic Aorta in a 9 mm. long segment , and marked development of collateral circulation .
- Endovascular treatment by percutaneous angioplasty with balloon-expandable PTFE covered Stent was proposed to restore Aortic continuity.

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- Catheterization was performed, under sedation and IV analgesia, by percutaneous right femoral and right braquial approach.
- Angiography shows complete interruption in a 9 mm long segment.

Radiofrequency perforation using a Nykanen™ RF 0.021" wire with a Bayliss™ RF generator was used to advance trough the scar tissue from femoral approach.



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- Perforation was performed in 5 successive steps under fluoroscopic control in AP and LAT views, with small contrast tests through the braquial approach.
- Once it was done., the Nykanen wire was snared from the braquial approach, to give support to exchange the wire for a 0.035 stiff wire.

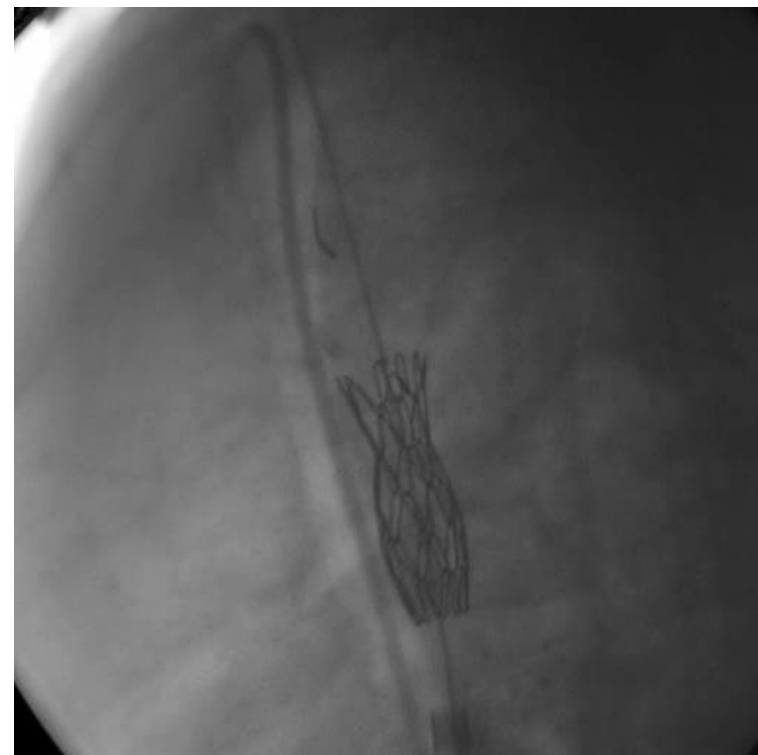
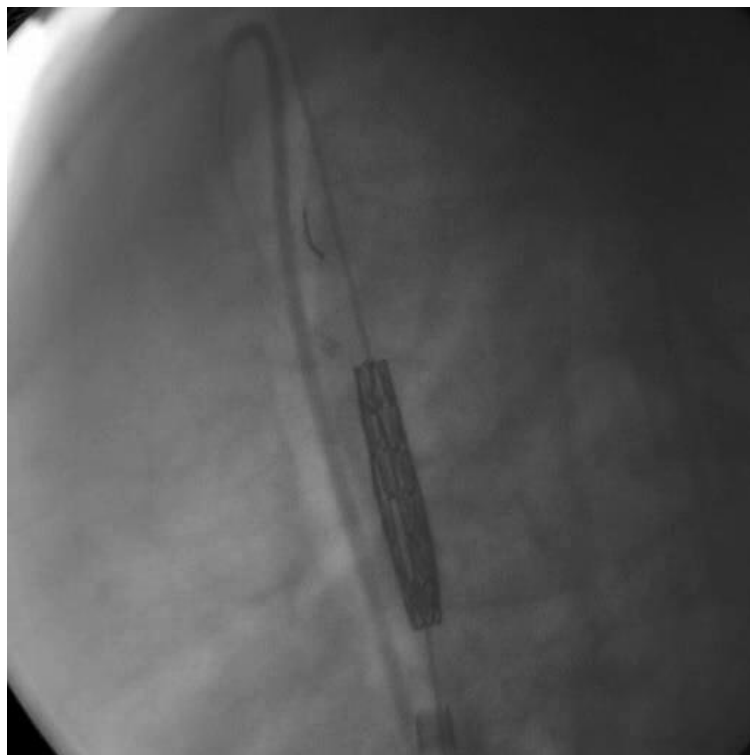


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- Over the stiff wire, a 13F Mullins sheath was introduced across the scar tissue, without balloon predilation.
- A 8 zigs by 39 mm ,PTFE covered CP Stent™ (Numed), was mounted on a BIB™ (Numed) balloon, 45 mm long , with a 16 mm external balloon, and 8 mm internal balloon.
- The whole system was introduced over the wire, trough the Mullins sheath and positioned under fluoroscopic control.

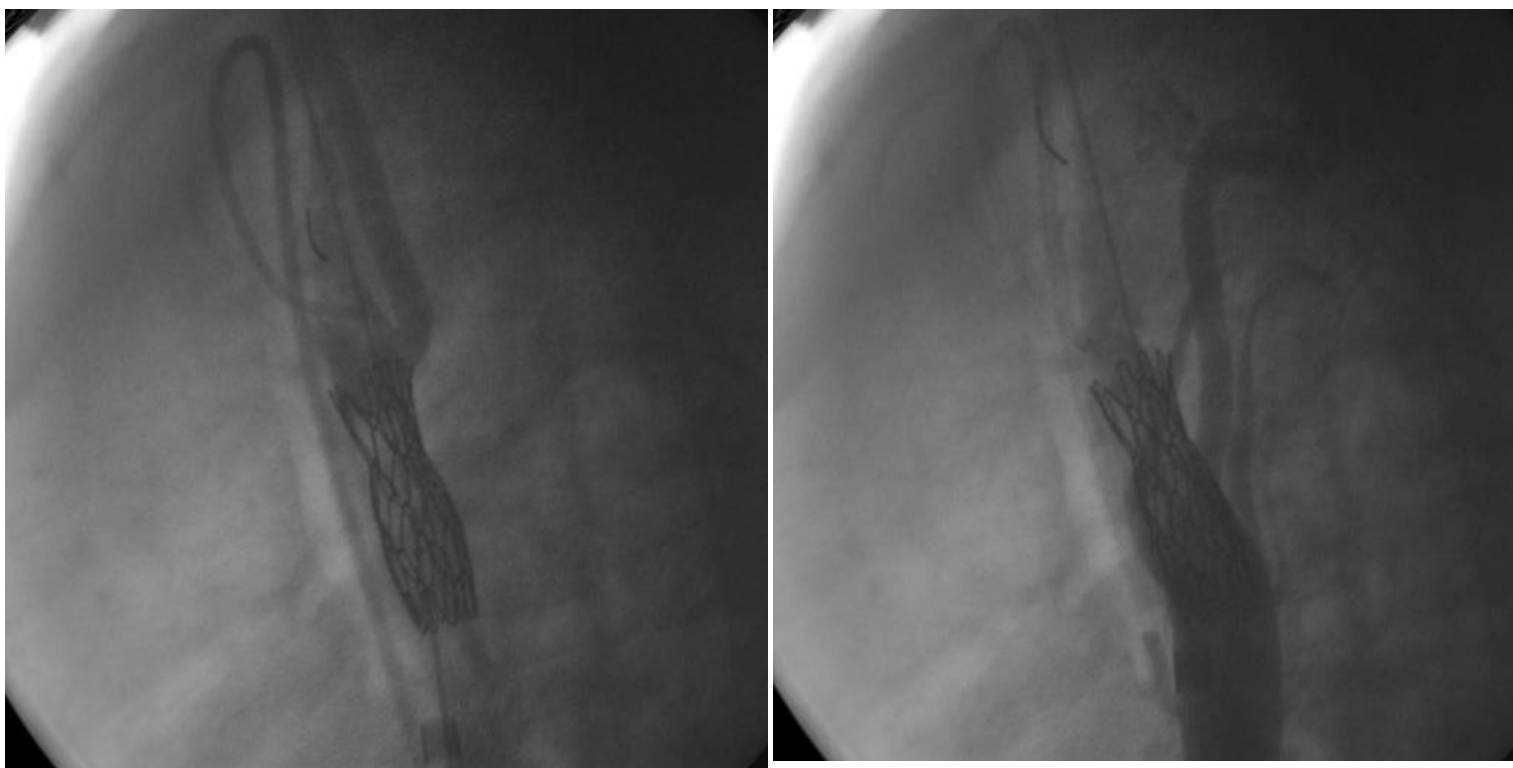
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- Internal and external balloons were insufflated until nearly complete expansion was achieved at 6 psi.



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- Final results show good flow through the stent graft in angiography and no residual gradient at the pressure measurements, so redilation with high pressure balloon was no necessary.



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- Patient remained 48hs. at ICU with uneventful recovery.
- Blood pressure measurements were in normal values.
- RMI and TEE showed good flow through the Stent and no evidence of dissection or hematoma.
- Femoral pulses were normal.
- At 72 hs was discharged without medication
- At 1 year follow-up remains normotensive on no medication.

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- **Conclusion**
- Endovascular treatment of acquired complete interruption of thoracic aorta was feasible, using radiofrequency perforation of the atretic segment and restoration of aortic continuity by means of balloon expandable PTFE covered **C**heetham **P**latinum **S**tent and **B**alloon-**I**n-**B**alloon, angioplasty.