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Management of fractured left pulmonary artery stent with severe residual stenosis

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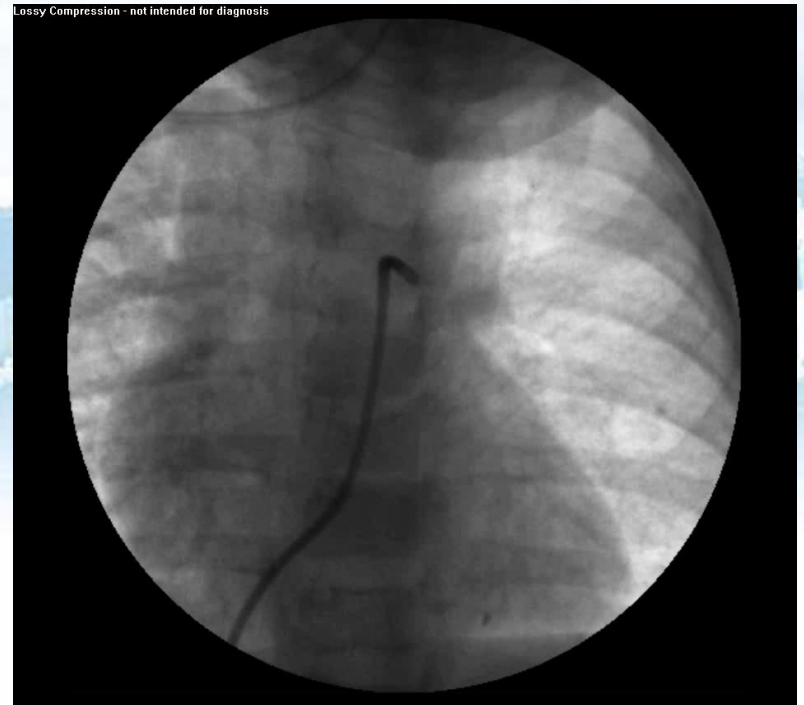
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Case summary

- F/16yrs
- Congenital pulmonary arteries hypoplasia (non-syndromal)
 - Multiple stenotic site at LPA
 - Angiogram at 1 year old



Case Summary

- Repeated percutaneous balloon angioplasty
 - 1999, 2001, 2002
 - Mild RPA hypoplasia with no discrete stenosis
 - Severe LPA stenosis
 - Lung perfusion :
 - R/L 67% / 33%

LPA stenosis - 2006

- Lung perfusion : R/L : 63%/37%
- Repeat c.c.



RPA



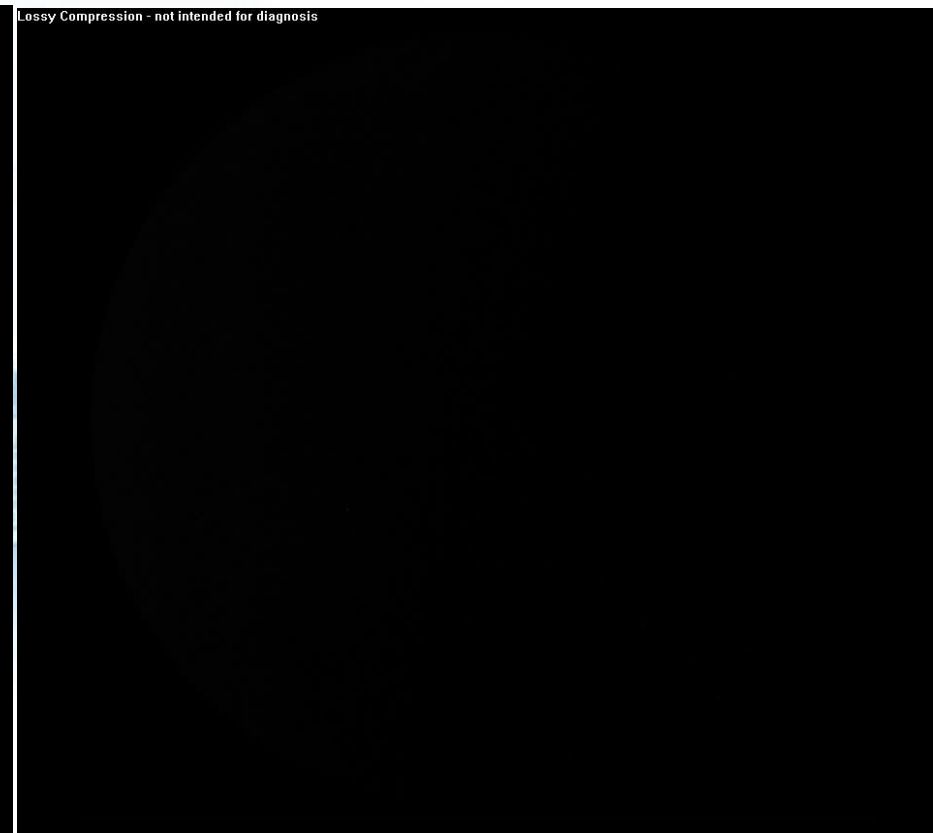
Co-organized LPA

LPA stenting

- LPA stent implantation (Genesis 8x39mm) 8/2006



Stenting



Co-organized

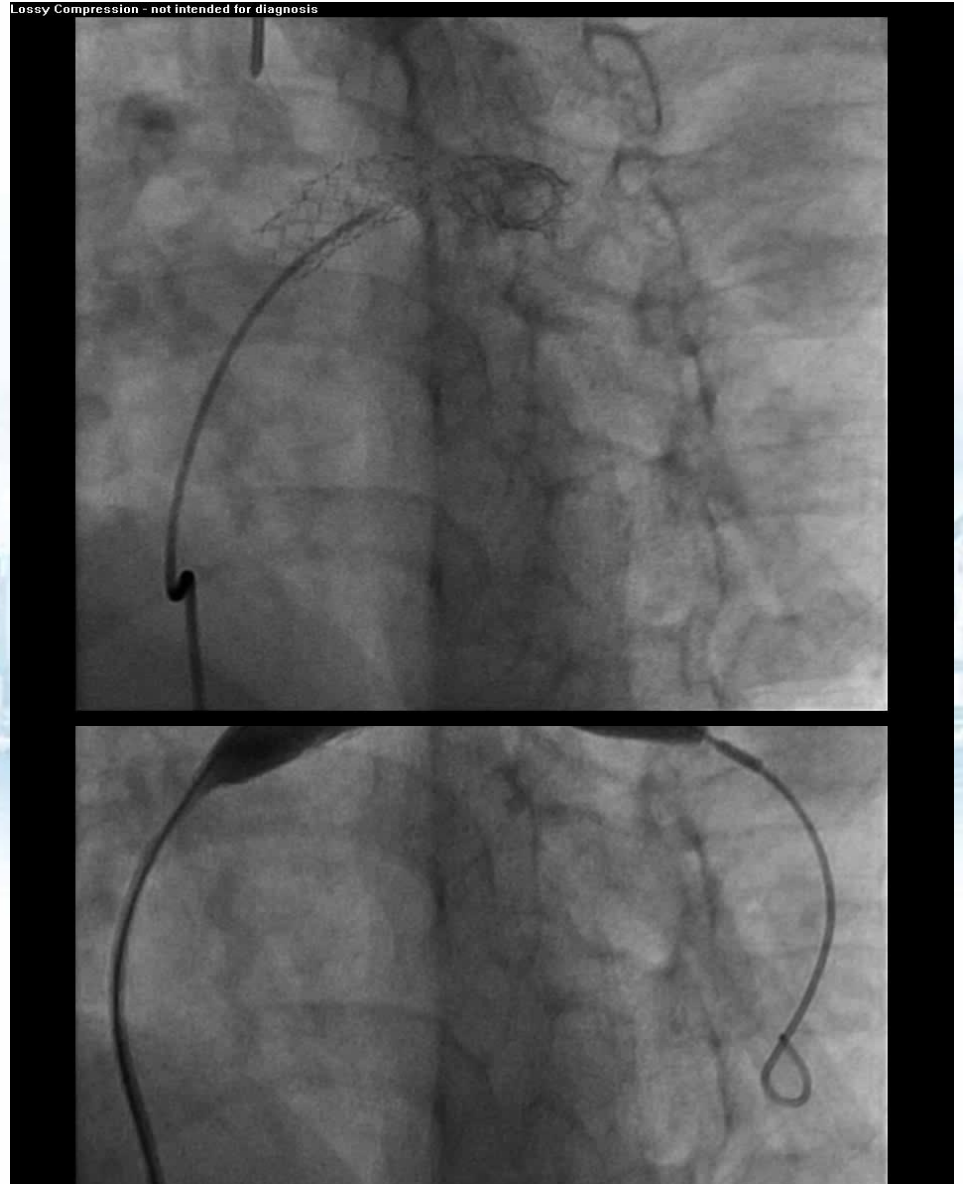
Post stenting

Progress

- Serial echo – significant residual LPA stenosis
- Re-intervention 12/2008
 - Severe LPA stenosis at the distal 1/3 of stent
 - PBLPA Wanda balloon (17atm)
 - Fair result
 - LPA PG : 50mmHg → 41mmHg
 - RVSP 75% systemic (same after intervention)
 - Dimension : 3.2mm → 4.3mm
 - Plan for re-intervention with high pressure balloon

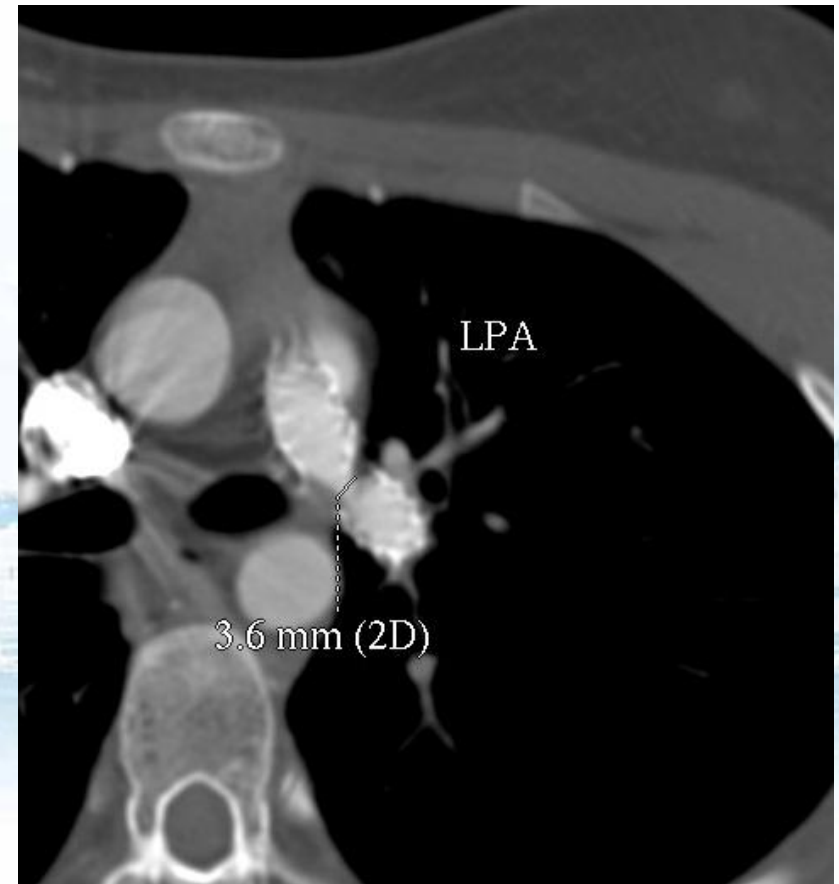
2010 intervention

- LPA stenosis
 - 3.48mm (cf prox 8.4mm)
 - PG 40mmHg
 - RVSP 70% systemic
- PBPLPA
 - High pressure balloon 10x40mm Conquest balloon (24atm)
 - Mild improvement
 - Stenotic site 5.1mm
 - RVSP same



Stent fracture + Severe stenosis

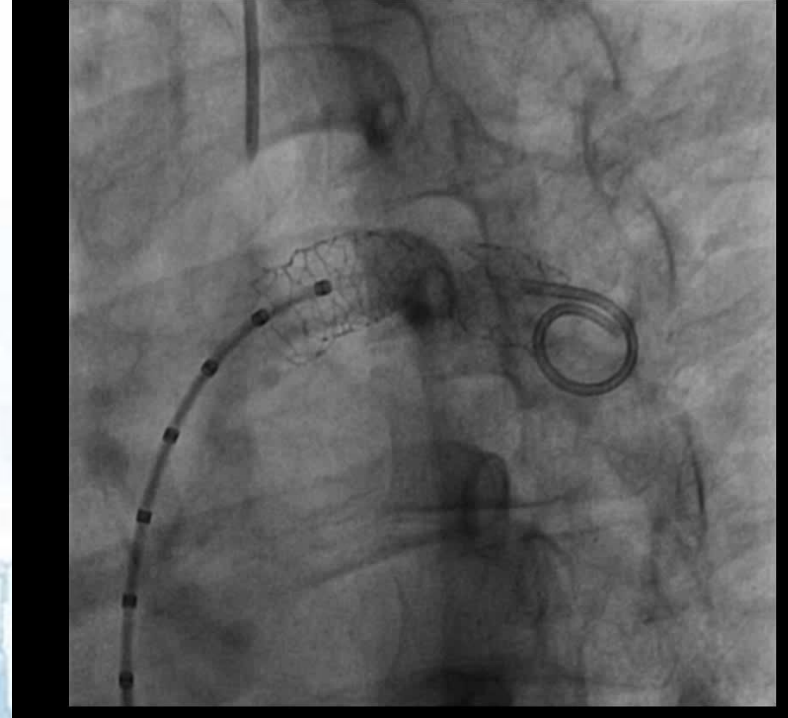
- CT - Jul 2013
 - Stent fractured
 - Severe LPA stenosis between fragments of fractured stent
 - 3.6mm
- For re-intervention



Cardiac Catheterization

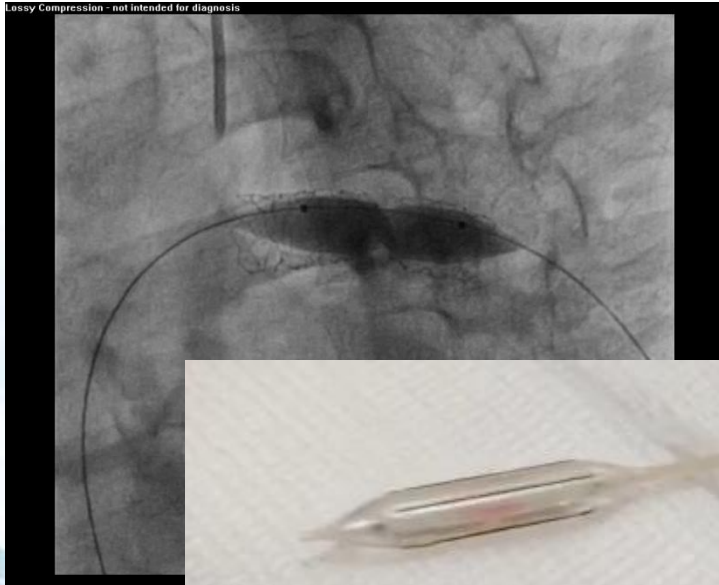
- Fractured LPA stent
- Severe stenosis
 - Between the 2 segments of the fractured stent
 - 3mm
- Strategy?
 - PBPA - Cutting balloon
 - PBPA - High pressure balloon
 - Stent - in - stent manuvre
 - Covered stent as bail out

Lossy Compression - not intended for diagnosis

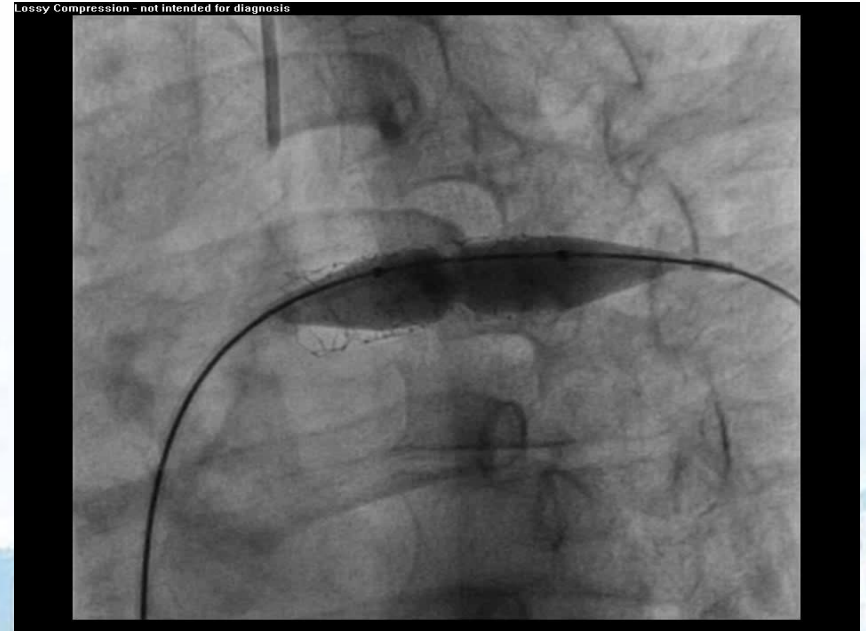


CF: 0.1339 mm/pix

Re-intervention



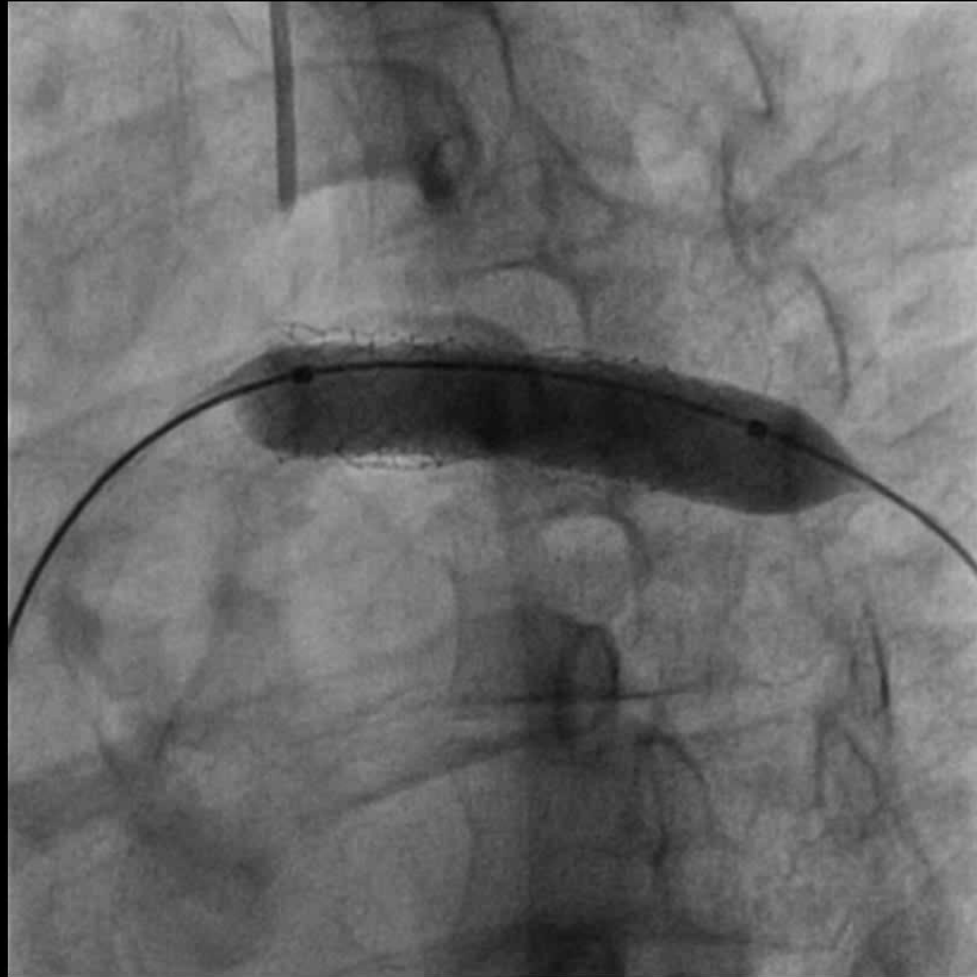
- Initial dilatation
 - 5mm cutting balloon
 - No waist observed
- 8mm cutting balloon used



- Subsequent dilatation
 - High pressure balloon
 - 10x20mm Conquest balloon
 - 24atm
 - Waist eliminated

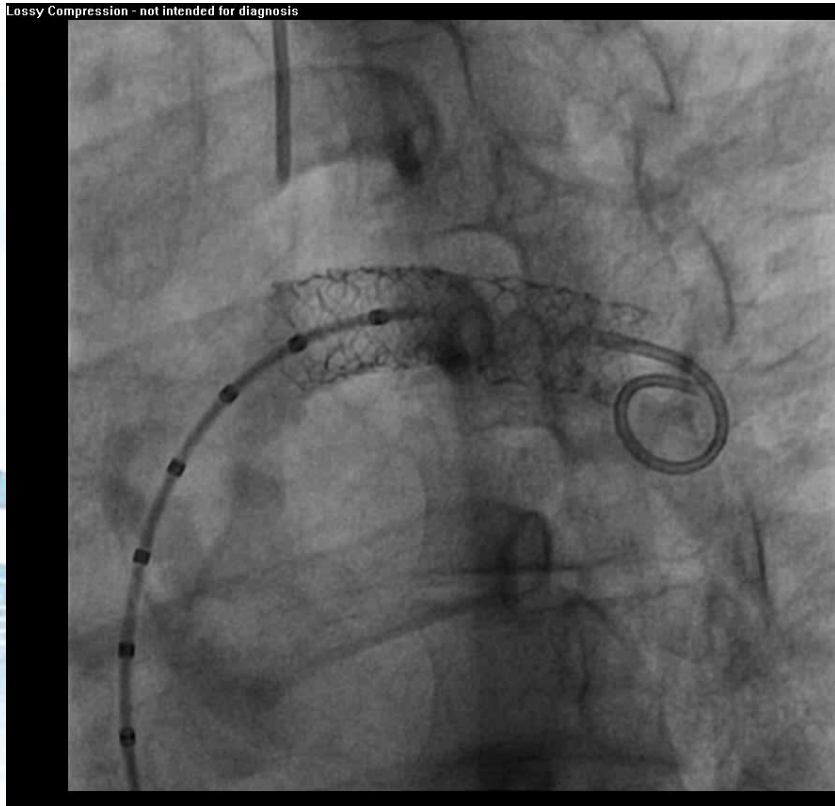
“Stent-in-stent”

Lossy Compression - not intended for diagnosis



10x39mm Genesis stent

Post stent implantation



LAO



Lateral

Results

- LPA pressure gradient
 - 40mmHg → 6mmHg
- RVSP
 - 62 → 46% systemic
- Jailed tiny LUL branch
- Long term
 - Monitor patency
 - Pending CT in 6/12

Summary

- Non-syndromal hypoplastic branch PAs
 - LPA stent x residual stenosis despite PBPA
 - Residual LPA stenosis
 - → Fractured stent
 - Severe stenosis between 2 fragments of fractured stent
 - Resistant to high / ultra-high pressure balloon
 - Cutting balloon + ultra-high pressure balloon
 - “Stent-in-stent”
 - Importance of planning
 - Watch out for re-stenosis / fracture



Thank you!