



Renal Artery Stenosis

Catholic University of Korea
Incheon St. Mary's Hospital
Cardio Vascular Center
Kim bong su



가톨릭대학교 인천성모병원
THE CATHOLIC UNIV. OF KOREA INCHEON ST. MARY'S HOSPITAL

Case presentation

- Age : 65
- Sex : F
- F.M Consult
 - Hypokalemia
 - Proteinuria
 - LFT ↑
 - HBP (160/100mmHg)
- Medical History
 - HBP, Thyroid mass



Case presentation

- Lab

- BUN : 16.9

- Creatinine : 0.8

- Na : 140

- K : 2.9

- Creatinine(U) : 59.4

- K(U) : 23.0

- Medication

- Lercanidipine 20mg /d

- Carvedilol 25mg /d

- KCL 1800mg /d

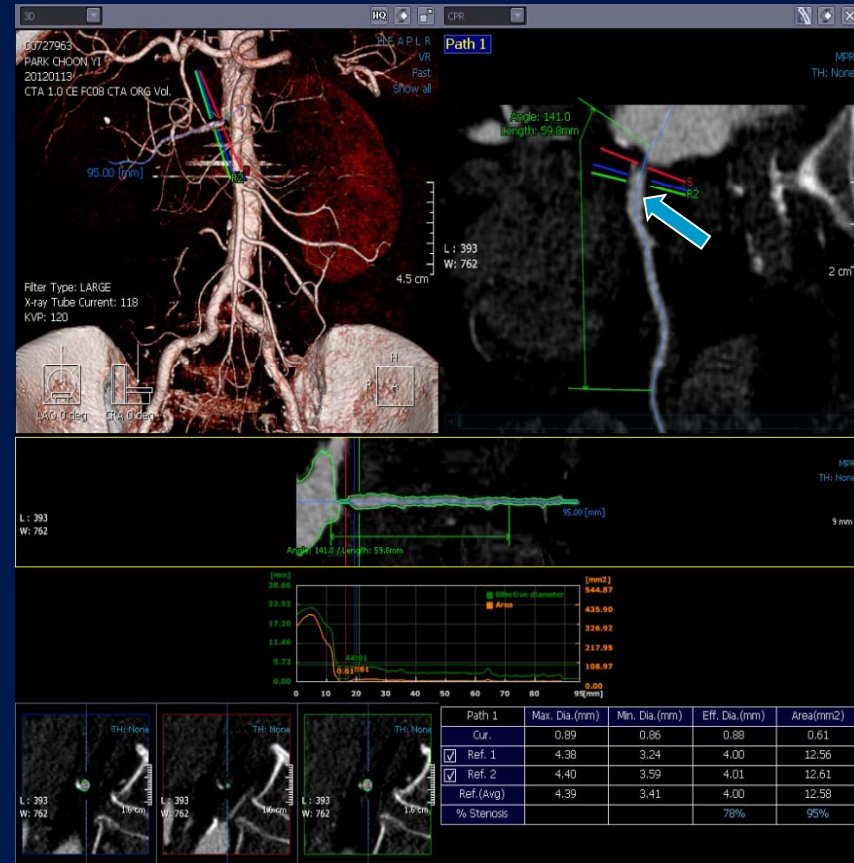


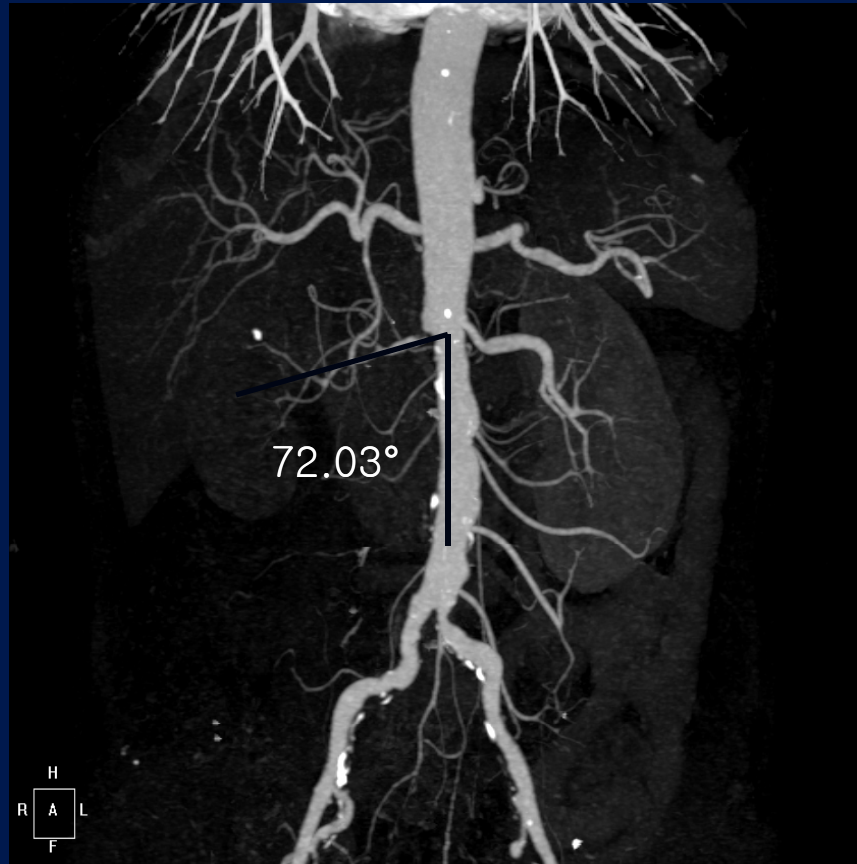
Case presentation

- R/O
 - Renal K wasting HBP
- Kidney Dynamic CT , Renal angio CT
 - Rt. renal artery stenosis 95%
- Imp
 - Renovascular HBP



Renal angio CT



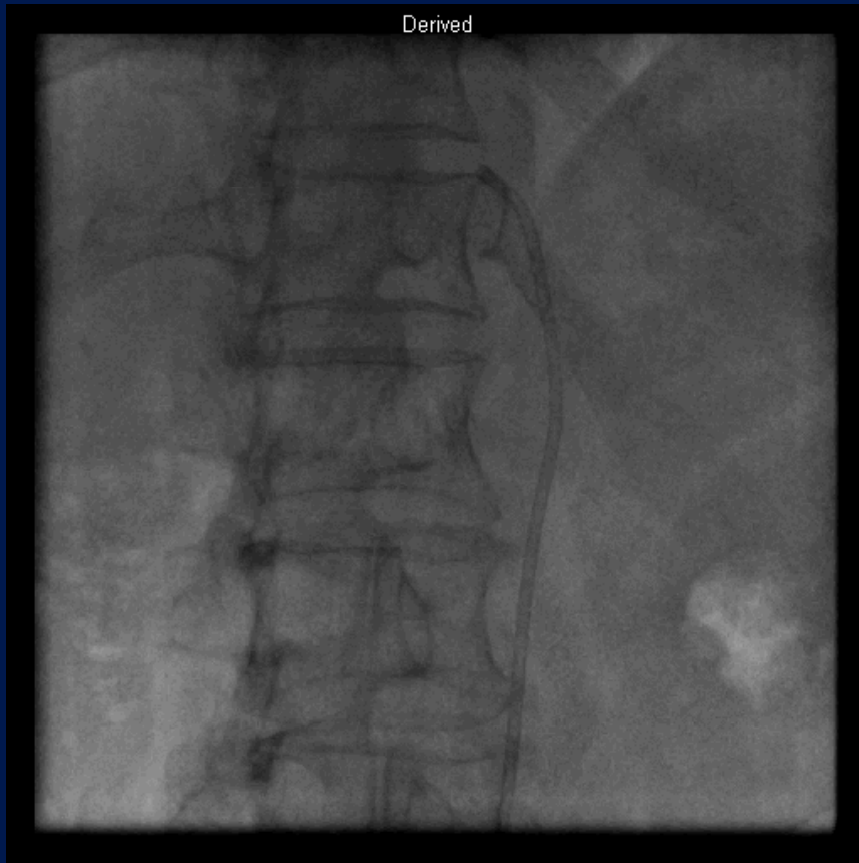




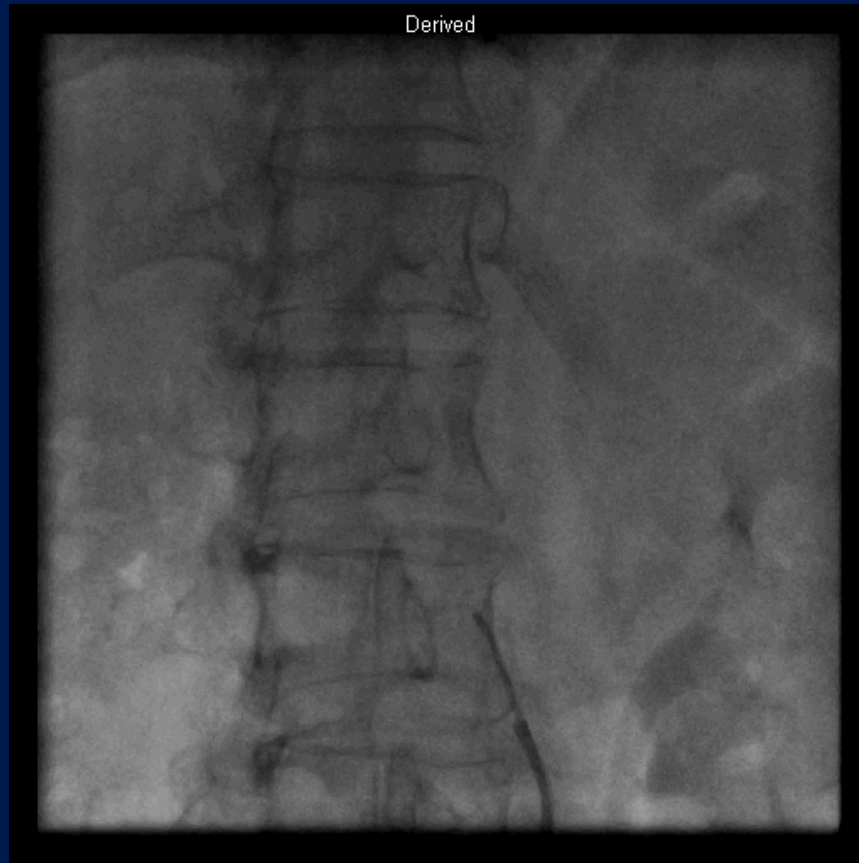
Path 1

MPR
TH: None





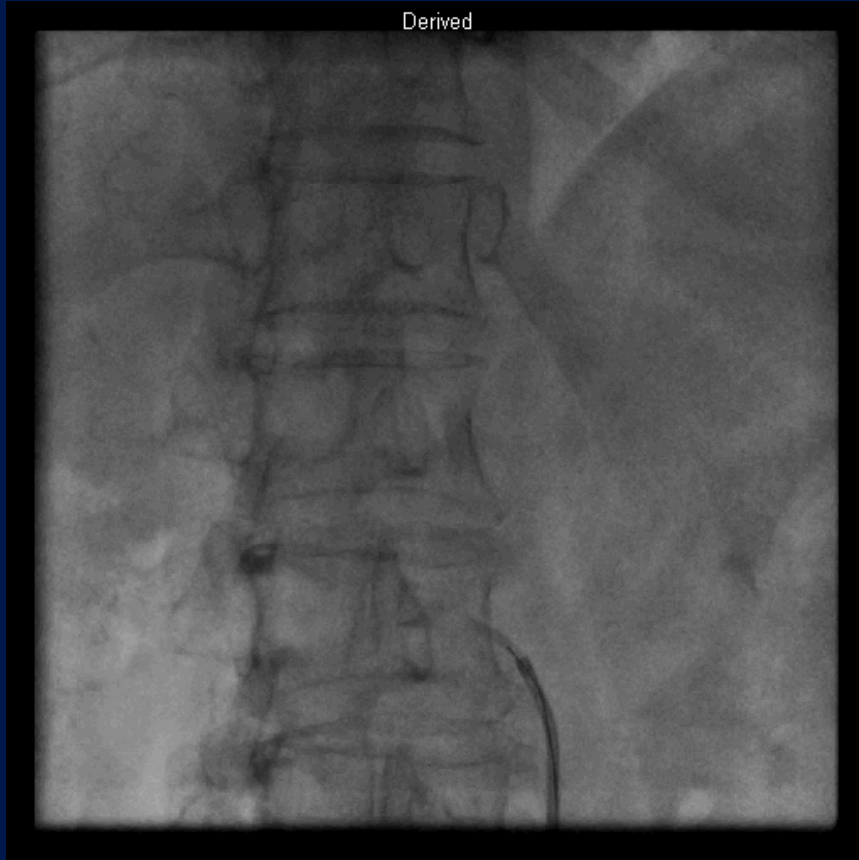
G/C - RDC1



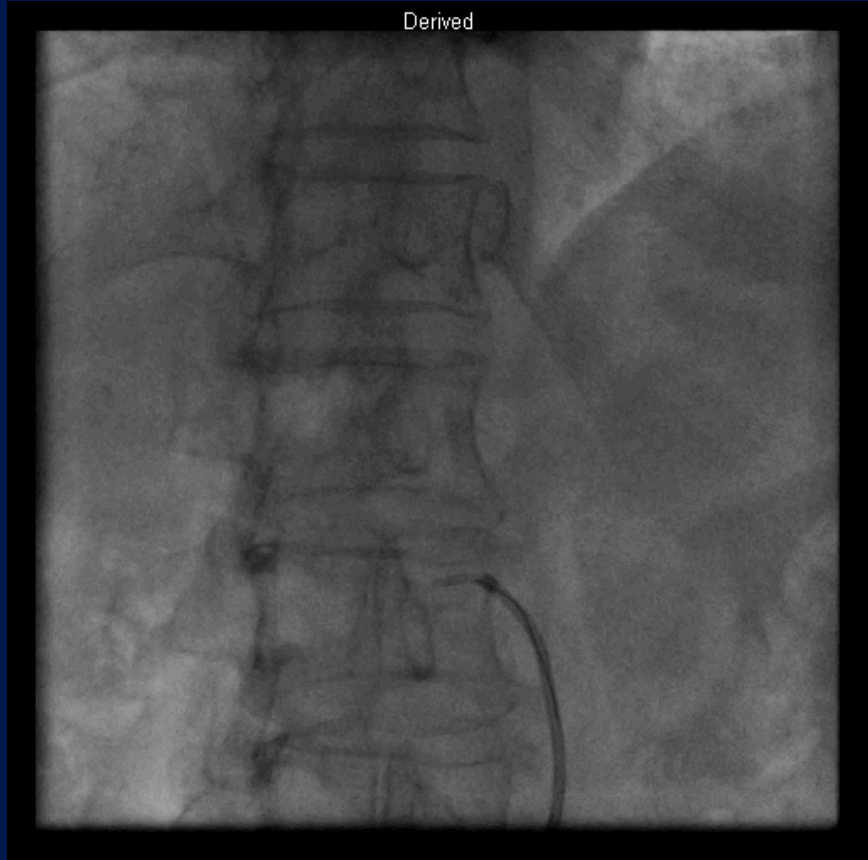
D/C - C1



Derived



Derived





Derived

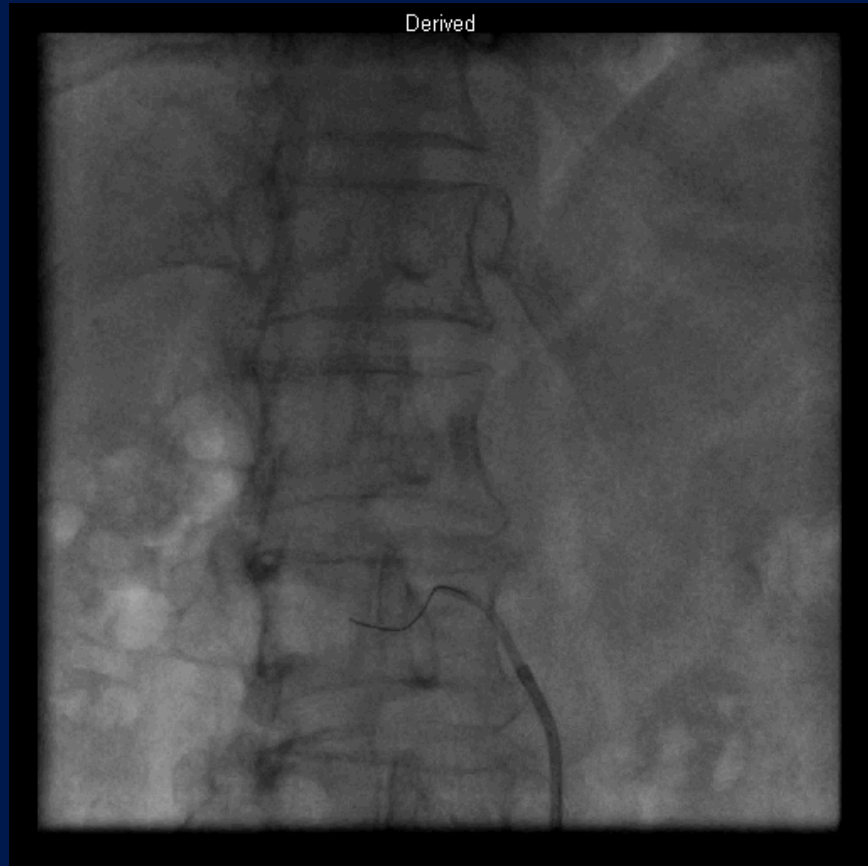


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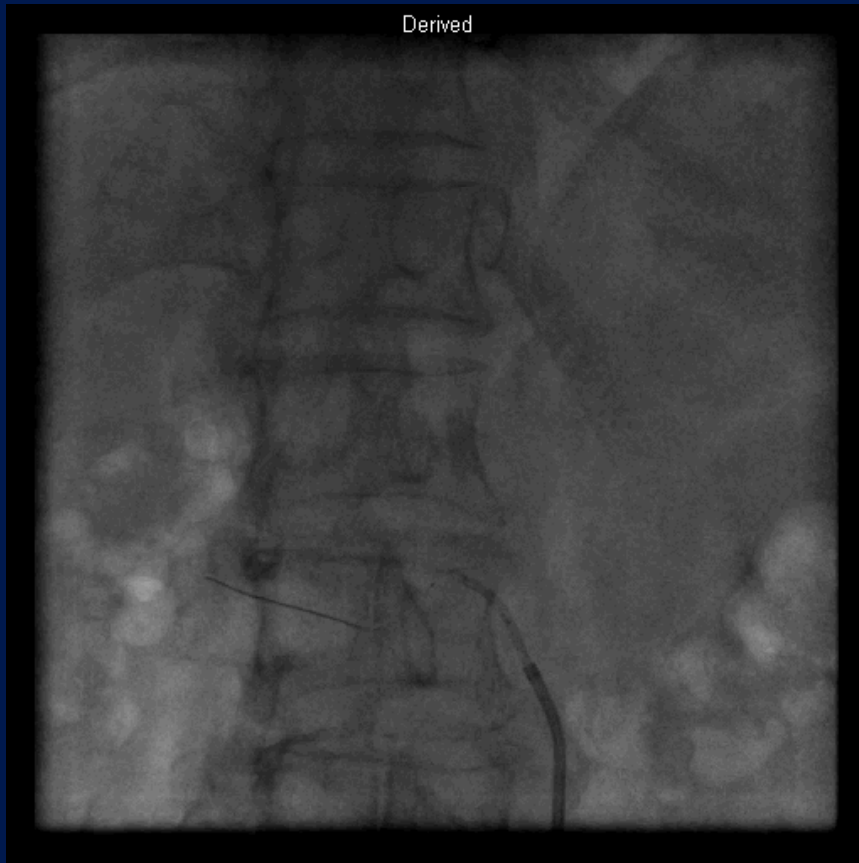


G/W - 0.14 marker



D/C - C1





G/C – RDC1

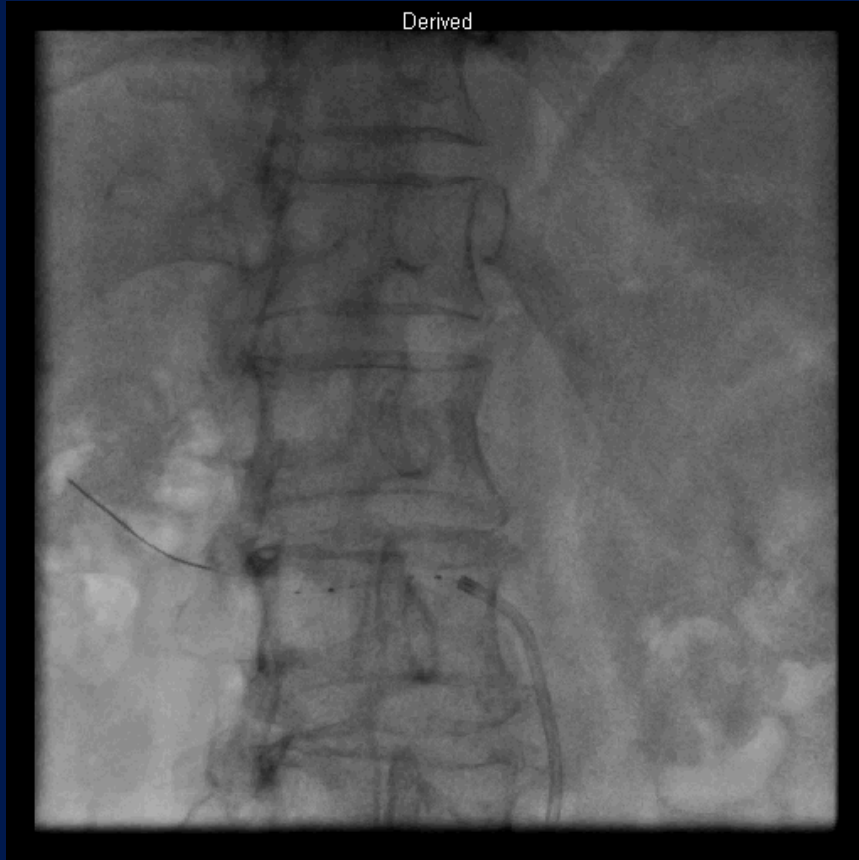


Balloon – 2.0*20mm

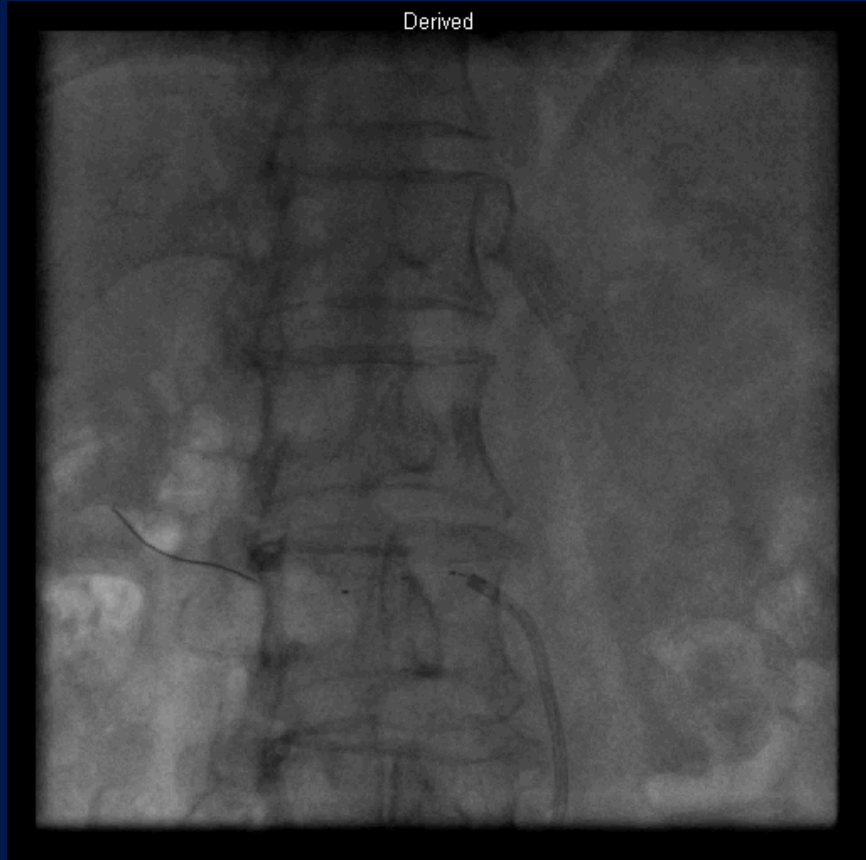


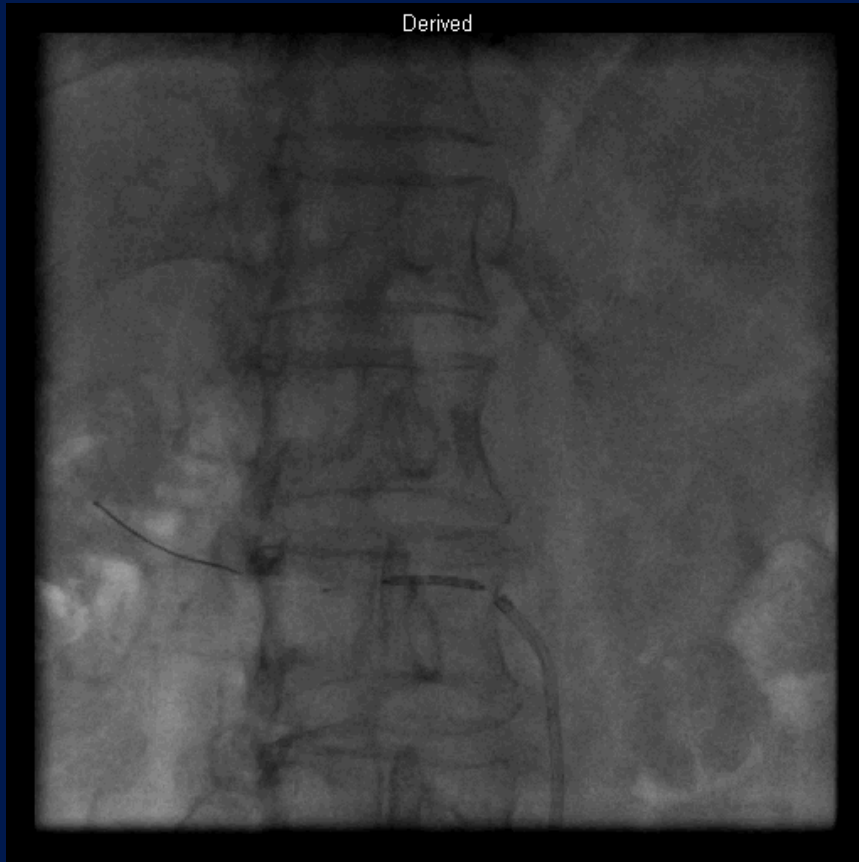


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Derived





G/C – RDC1

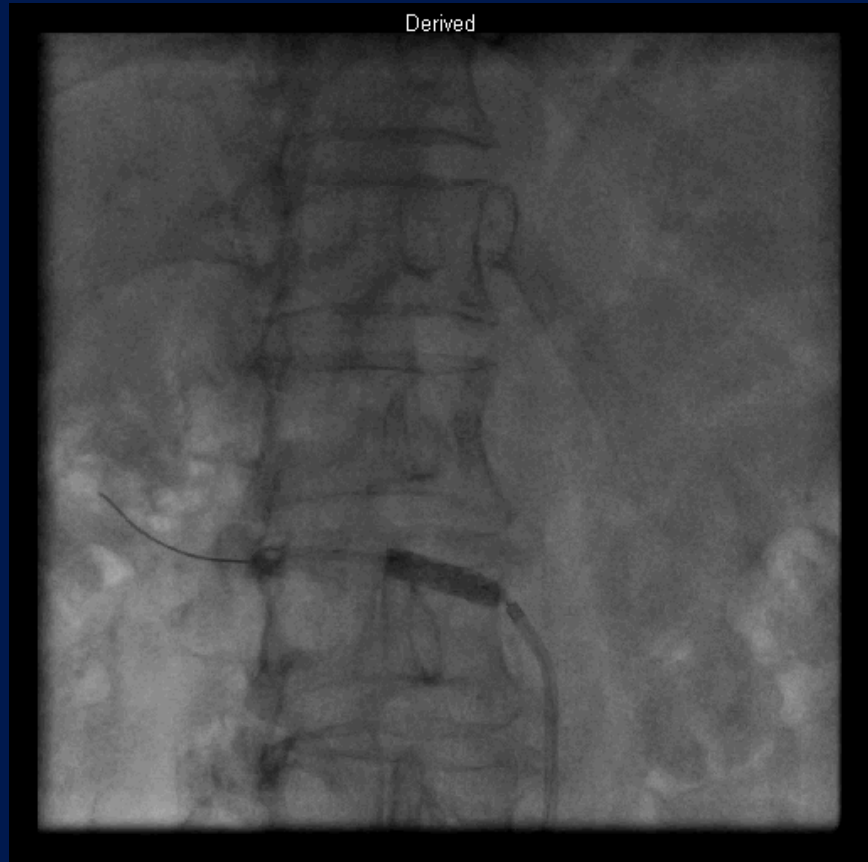


Stent – 5.0*15mm



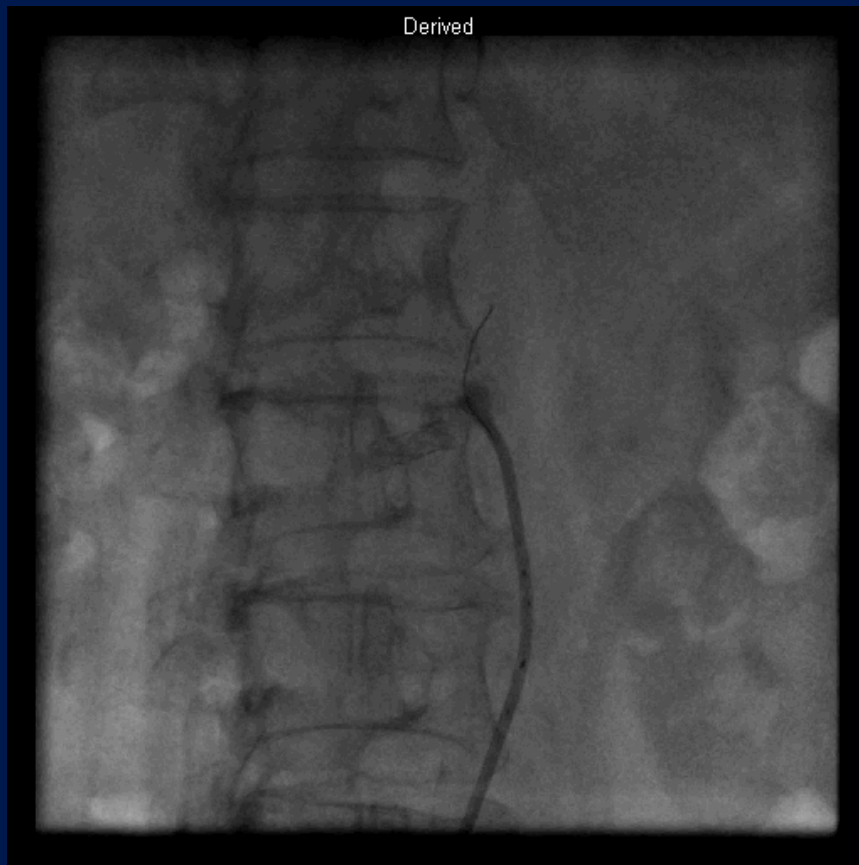


Stent – 5.0*15mm



Stent – 5.0*15mm





Case presentation

- Follow up after 1 month
 - BP : 111/62mmHg
 - Medication : Carvedilol 12.5mmg
 - Lab
 - BUN : 19.8
 - Creatinine – 1.1
 - Na – 142
 - K – 4.2



Case Review



Clinical Indications

■ Class I

- Onset of hypertension before the age of 30 years or severe hypertension after the age of 55.
- Accelerated, resistant, or malignant hypertension.
- Development of new azotemia or worsening renal function after administration of an ACE inhibitor or ARB agent.
- Unexplained atrophic kidney or size discrepancy between kidneys of greater than 1.5 cm.
- Sudden, unexplained pulmonary edema.

■ Class IIa

- Unexplained renal dysfunction, including individuals starting renal replacement therapy.

– ACCF/AHA Guideline November 2011



Indications for Revascularization

- Class I
 - Significant RAS with recurrent, unexplained CHF
 - Sudden, unexplained pulmonary edema
- Class IIa
 - Accelerated, resistant, or malignant hypertension
 - Hypertension with unilateral small kidney
 - Hypertension with medication intolerance
 - RAS and CRI with bilateral RAS
 - RAS to solitary functioning kidney
 - RAS and unstable angina

– ACCF/AHA Guideline November 2011



Contraindications

- Unilateral RAS and Cr \geq 2.5mg/dL
- Renal length \leq 7.5cm
- Proteinuria \geq 1g/day
- Severe diffuse intrarenal vascular

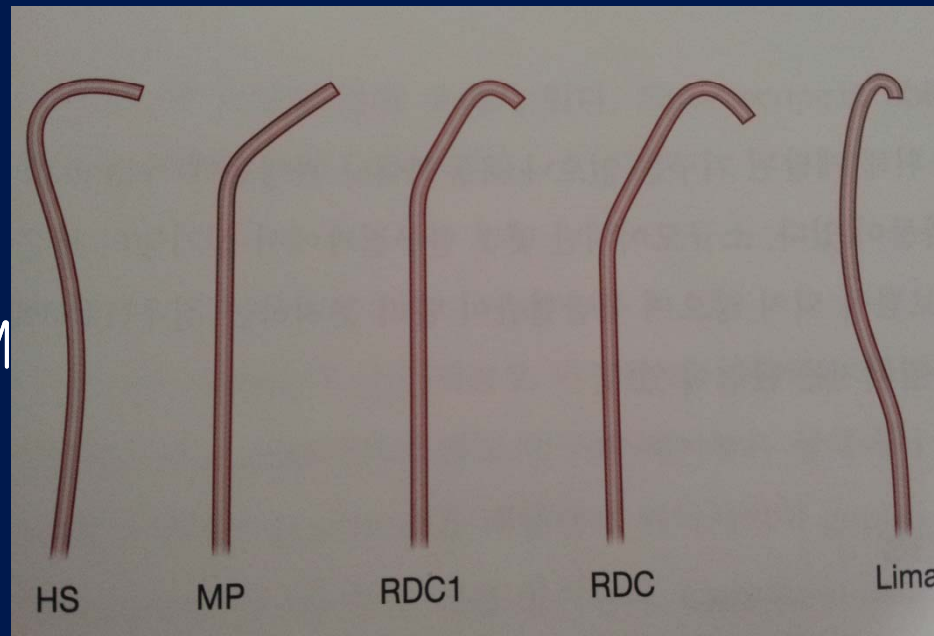
- Grossman's cardiac catheterization, Angiography, and Intervention seventh edition
- VIS manual 2012



Renal Intervention

■ Approach & G/C

- Femoral :
- Brachial :
- Radial : M



- The Manual of Interventional Cardiology 2011
- VIS manual 2012



Renal Intervention

- Engagement

- Direct guide technique
- Catheter in catheter technique
- Catheter exchange technique
- Bare wire technique
- No touch technique

- The Manual of Interventional Cardiology 2011
- VIS manual 2012





Renal Intervention

- Complications

- Distal renal artery embolization

- Dissection

- Rupture

- perforation

- Grossman's cardiac catheterization,
Angiography, and Intervention seventh edition

- VIS manual 2012

A close-up, dimly lit photograph of medical equipment, possibly a catheter or stent, with a blue glow.

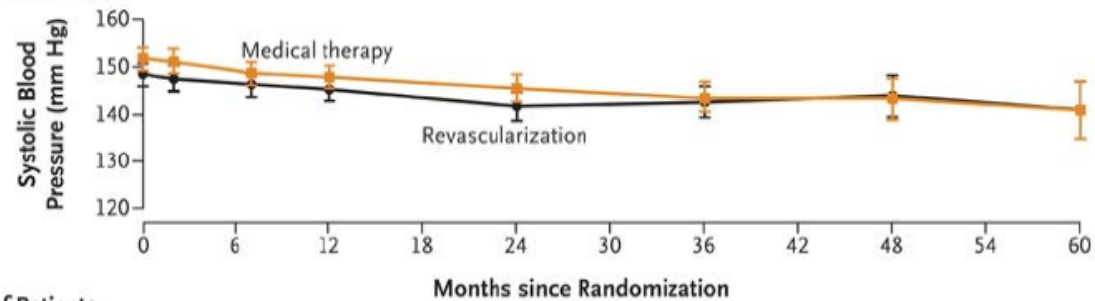
ASTRAL trial

- Revascularization (N=403)
- Medical Therapy (N=403)



ASTRAL trial

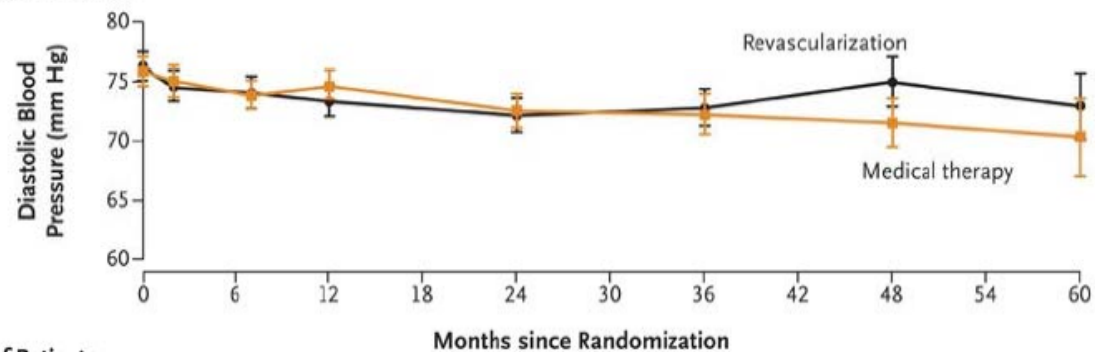
A Systolic Blood Pressure



Number of Patients

Revascularization	385	346	332	321	257	197	125	71
Medical therapy	388	361	350	336	264	178	124	62

B Diastolic Blood Pressure



Number of Patients

Revascularization	384	344	330	320	256	197	125	70
Medical therapy	388	361	349	335	262	178	123	63



ASTRAL trial

