

RENO-VASCULAR HYPERTENSION IN AN YOUNG TREATED BY INTERVENTION.

DR.P.C.Mondal

**MD. MRCP(UK).MRCP(Ire).MRCPS(Glasgow).
DM(Cardiology).DNB(Cardiology).FACC(USA).
Consultant Interventional Cardiologist.
Apollo-Gleneagles Hospital. Kolkata.**

Dr. P C Mondal



- Passed MBBS in 1990 from R G Kar Medical College & Hospital
- MD – from IPGMER in 1995
- MRCP (UK) – in 1997
- MRCP (Ire) – 1998
- DM (Cardio) – 2001
- DNB Cardiology from SGPGI in 2002
- MRCPS (Glasgow) – 2003
- FACC (USA) – 2008
- Interventional fellowship from Mc. Grill University, Canada
- Presently working as Consultant Interventional Cardiologist in Apollo Gleneagles Hospital, Kolkata
- Presented papers and abstracts in reputed journals
- PI & Co PI in many National & International Trial



Clinical History

- Mr. A. S. 19yrs. College student presented with.....
- Headache, dizziness and unsteadiness of gait for 2 months.
- Pre-syncope.
- No h/o sweating, palpitation, SOB or flushing episodes.
- NO h/o 4ps. Of 'PH.'

Clinical History(cont...)

- **Past history** → Nothing suggestive. Normal childhood and pubertal development.
- **Family history** → No h/o HTN, DM, IHD. CVA or SCD.
- **Personal history** → Non-smoker, non-alcoholic. Normal bladder and bowel habits. Sleep disturbed with restlessness.



Clinical History(cont....)

- Drug history → started on TELMISARTAN 80mg. AMLODIPINE-10mg. Hydrochlorothiazide 12.5mg. For 2months.
- No h/o operation.

Clinical Examination

- Normally built, well statured (Ht → 5'9" and Wt → 74kg. BMI → 25. **NO disproportionate body fat distribution.**
- **No edema. No pallor.** No clubbing, cyanosis, jaundice.
- **PULSE →** Palpable in all four limbs including both carotids. No radio-radial or radio-femoral delay. **NO bruits including over renal.**



Clinical Examination(cont)

- BP → 190/100mmHg (both upper limbs). No postural drop.
- Resp. Temp. → normal.
- JVP-normal.
- No skin pigmentation. No evident striae. No hyper-trichosis.

Clinical Examination(cont)

- CVS → Normal heart sounds. No murmur.
- Resp.Syst. → normal.
- CNS → normal.
- G-I-system → normal. No renal bruit.

ECG & ECHO.

- ECG → Normal sinus. No LVH.
- ECHO → Normal. No LVH. LVEF-67%.
- FBS-86mg%. Hb-14.8mg%.
- Lipid profile → LDL-96mg%. HDL-24mg%.
Total Ch-138mg%. Tg-156mg%. Lp(a)-34mg%.
- Homocysteine-16.8 :Uric acid-4.9mg%. TSH-
4.1
- hSCRP- 34. Urine → microalbuminuria(540mg)

Renal Vascular Doppler study

- RK → 11.1cm. LK → 7.7cm.
 - Spectral Pattern → Normal low resistance and high diastolic flow in rt.kidney.
 - Spectral pattern → spectral broadening with evidence of tardus et parvus wave pattern in Intrarenal arteries of left kidney.
- Suggestive of left renal artery stenosis with very poor flow.

Angiography.

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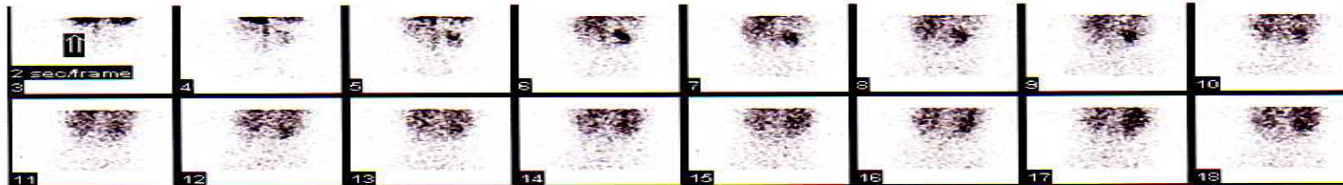
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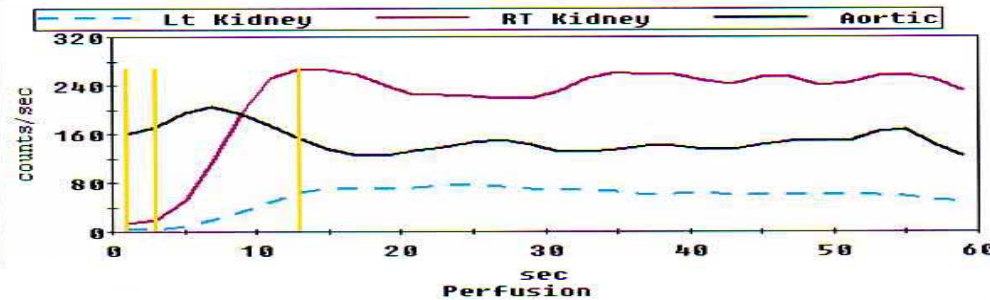
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Perfusion 0-30s

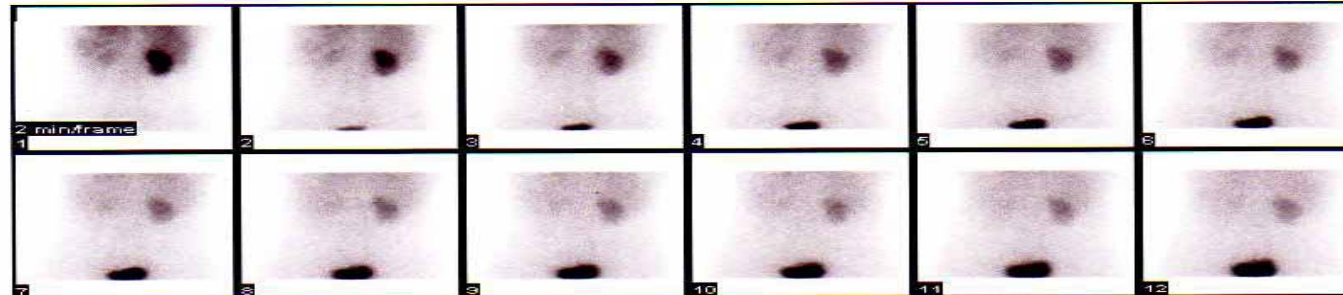


Gates GFR
Age: 19.8 Years
Height: (cm): 175.
Weight: (kg): 78.
Radiopharmaceutical: TcDTPA
Diuretic: Yes
Diuretic time (min): 1.
BSA (m²): 1.94

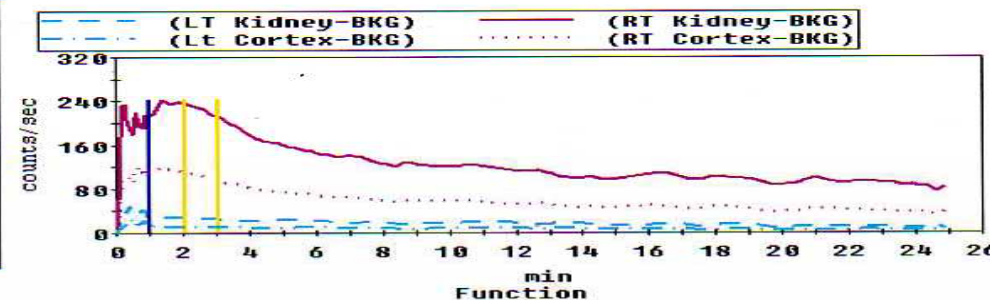
GFR ml/min: 80.61

Kidney	Left	Right
Kidney Area (cm ²):	22.64	70.27
Kidney depth (cm):	6.58	6.63
Perfusion% (Int):	16.21	83.79
Perfusion% (Slo):	18.96	81.04
Uptake% (Int):	10.22	89.78
GFR:	8.24	72.37

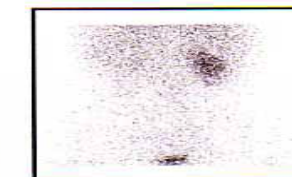
Time to peak:	1.08	1.33
Peak to 1/2 peak:	11.5	7.
20min/peak ratio:	.35	.37
20min/3min ratio:	.42	.4
Diuretic T1/2:	11.5	7.



Uptake Interval



Cortex	Left	Right
Time to peak:	1.08	1.33
Peak to 1/2 peak:	7.5	6.5
20min/peak ratio:	.32	.34
20min/3min ratio:	.41	.39
Diuretic T1/2:	7.5	6.5



Postvoid Image

DTPA RENOGRAPHY.

- RK → prompt and good concentration of radio-tracer, normal intra-renal transit and good excretion.
- LK → Small. Delayed and poor tracer uptake. Prolonged intrarenal transit and poor excretion.
- GFR → RK >> 72.37 LK >> 8.24
- Relative Function → RK >> 89.78%
LK >> 10.22%.



WHAT TO DO?

- Consultation with
- Nephrologist → advised nephrectomy.
- Urologist → advised nephrectomy.

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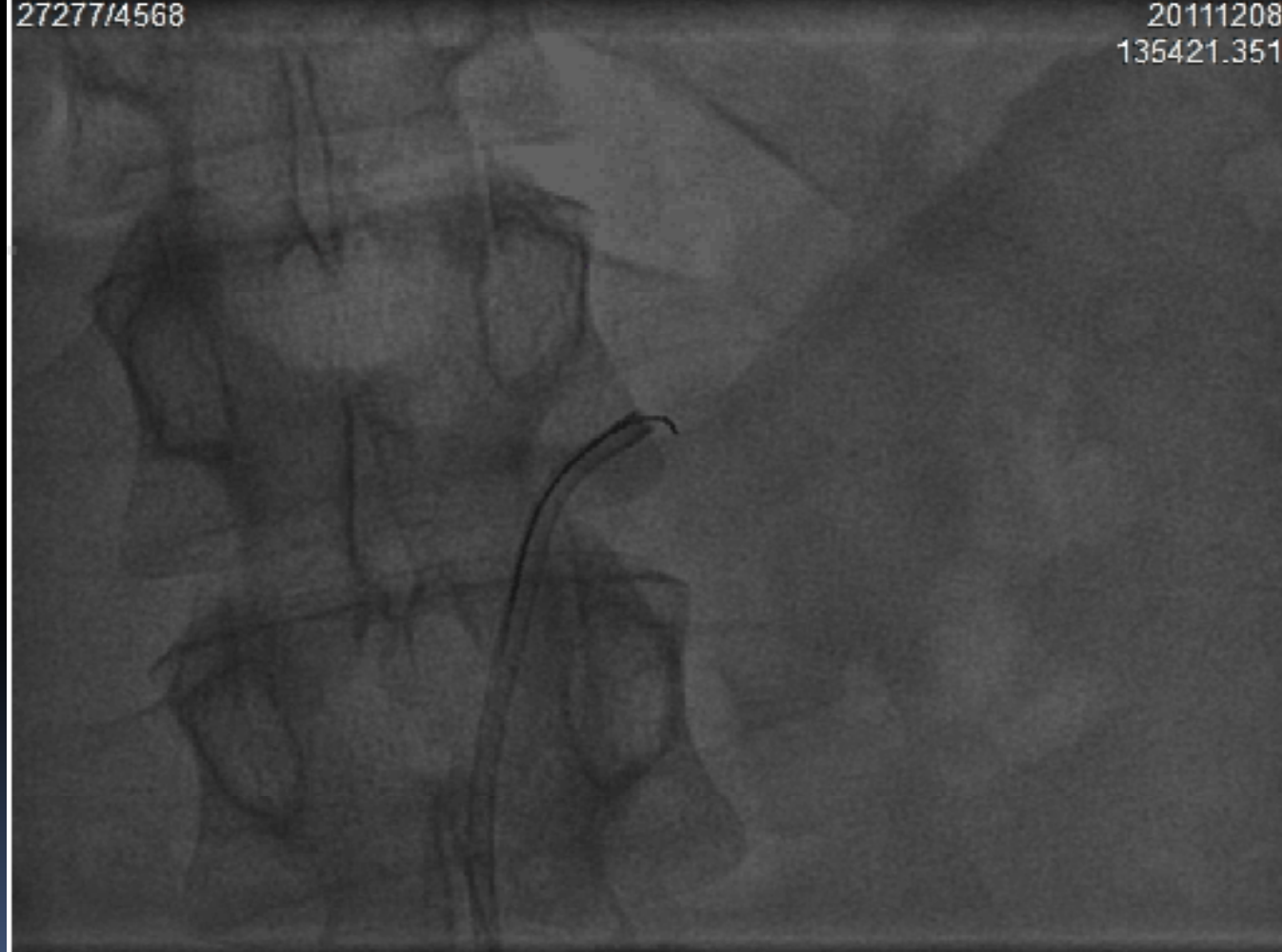
.....decision for angioplasty.

RENAL ANGIOPLASTY.

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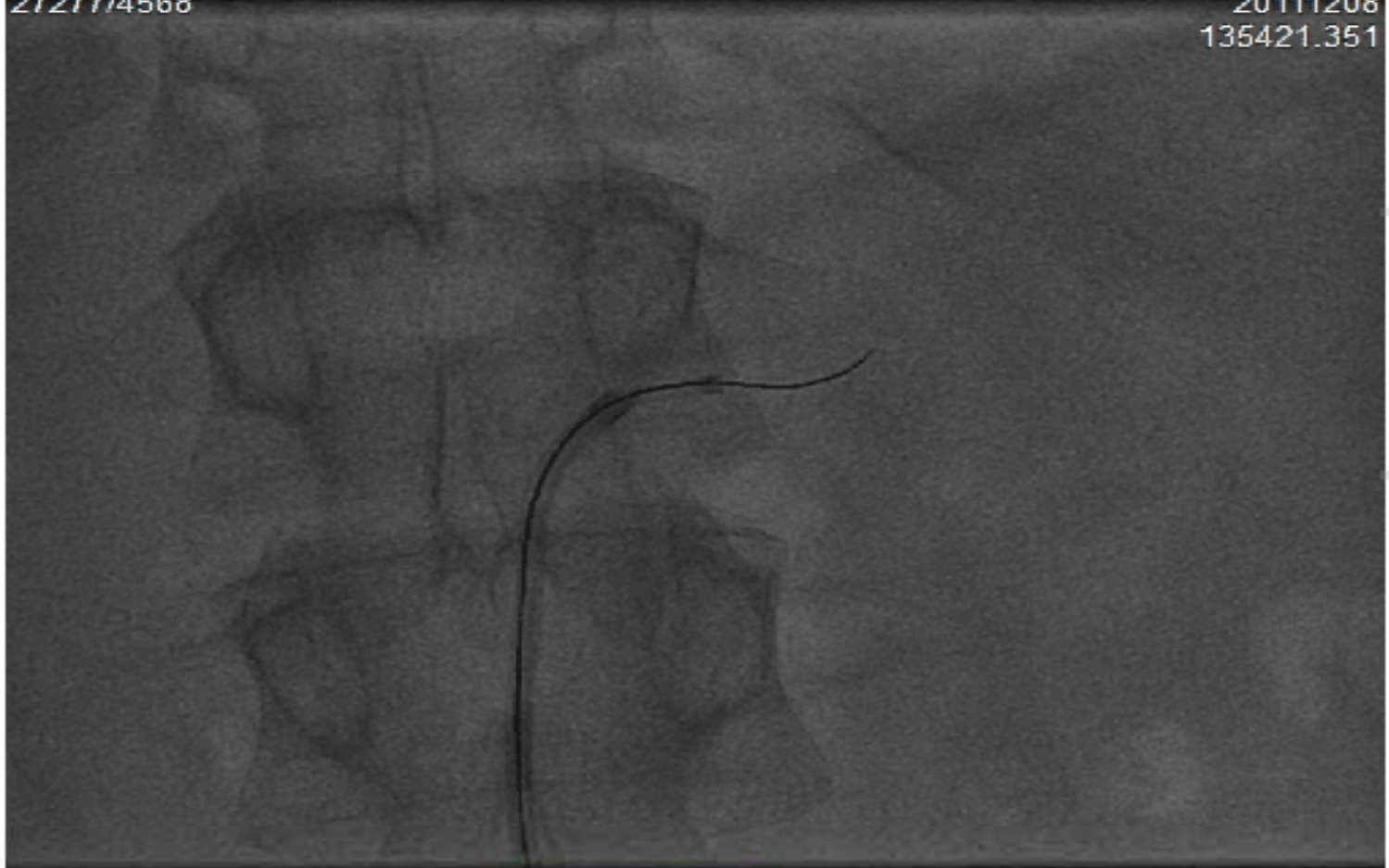
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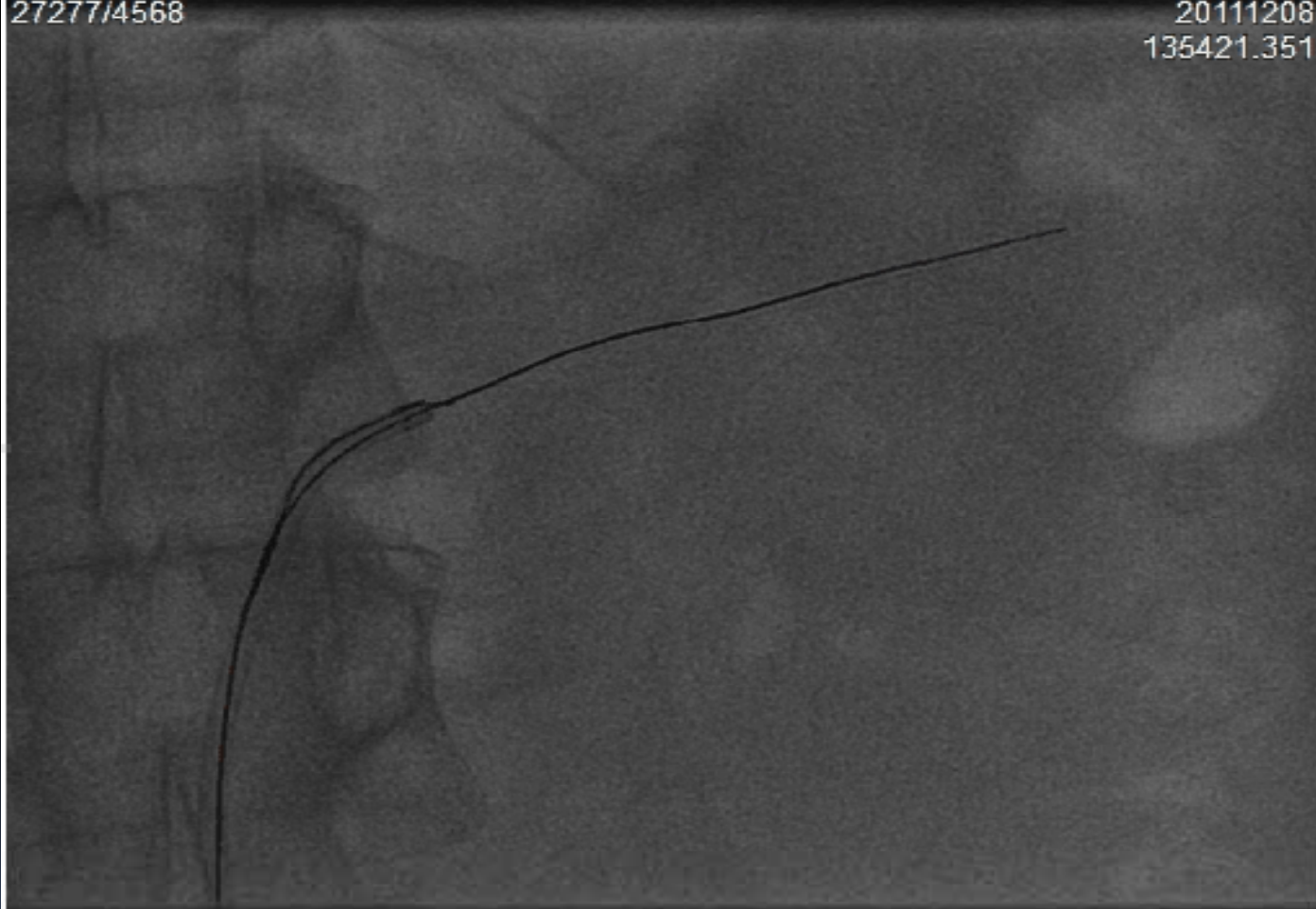
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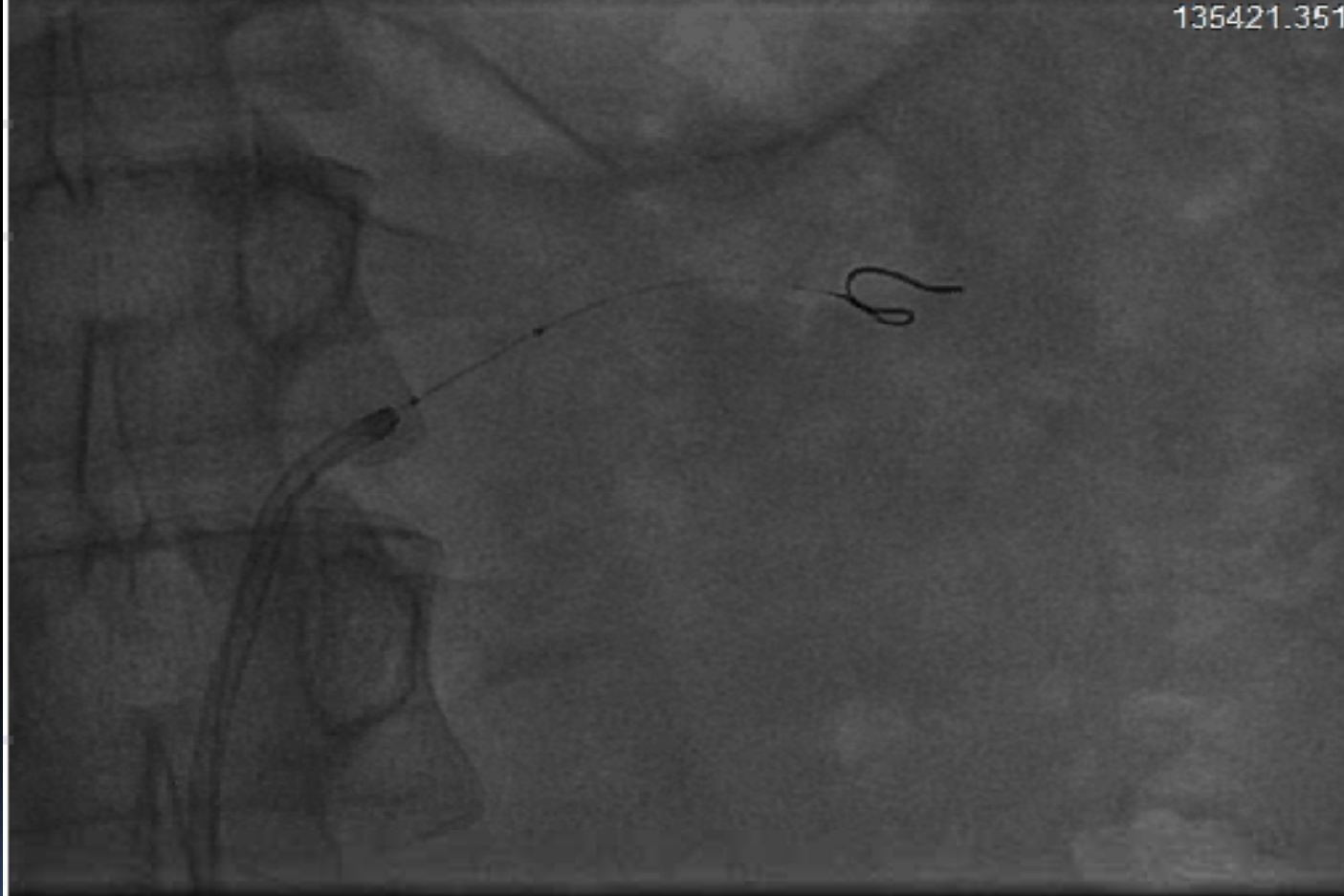
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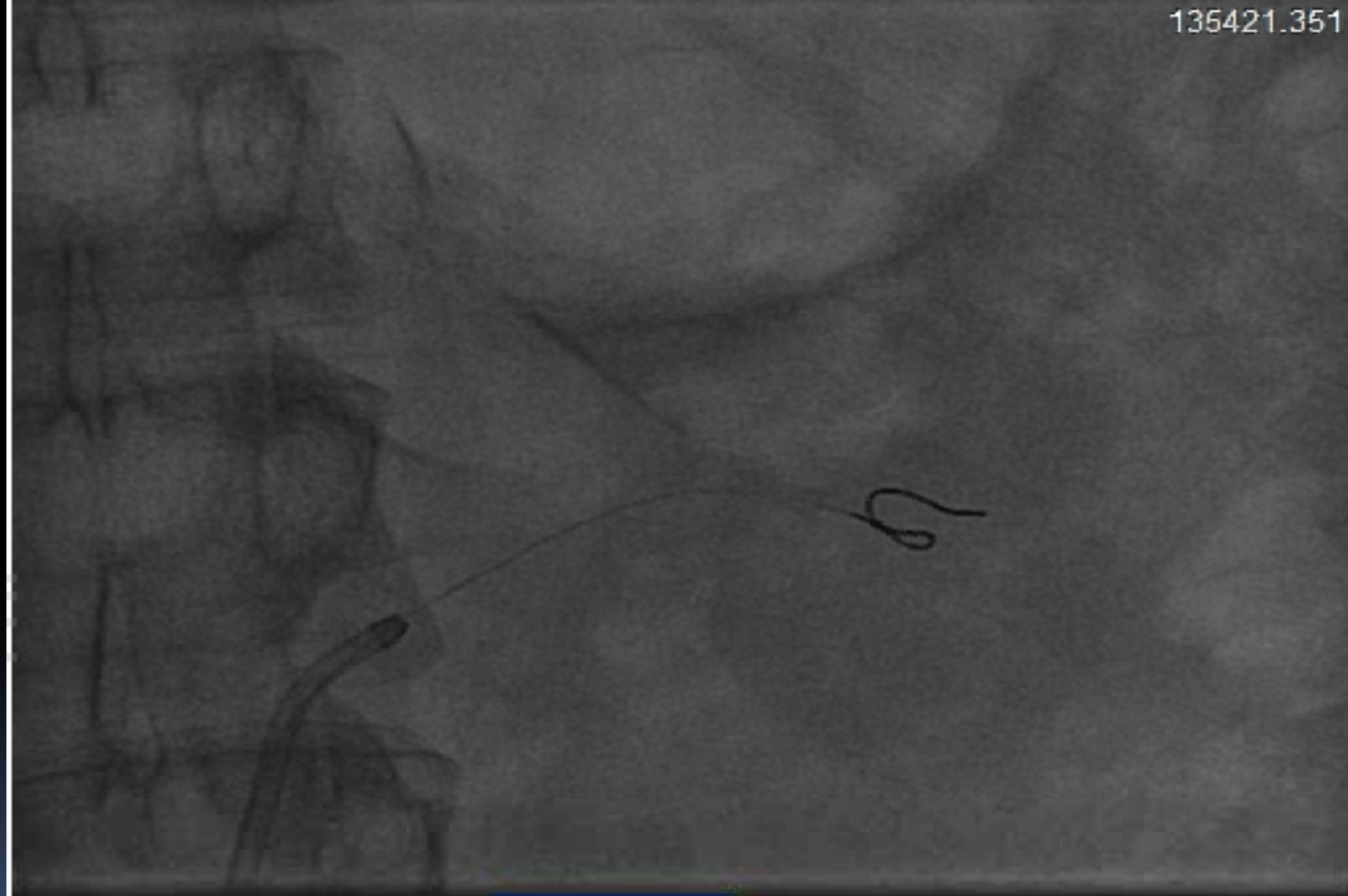
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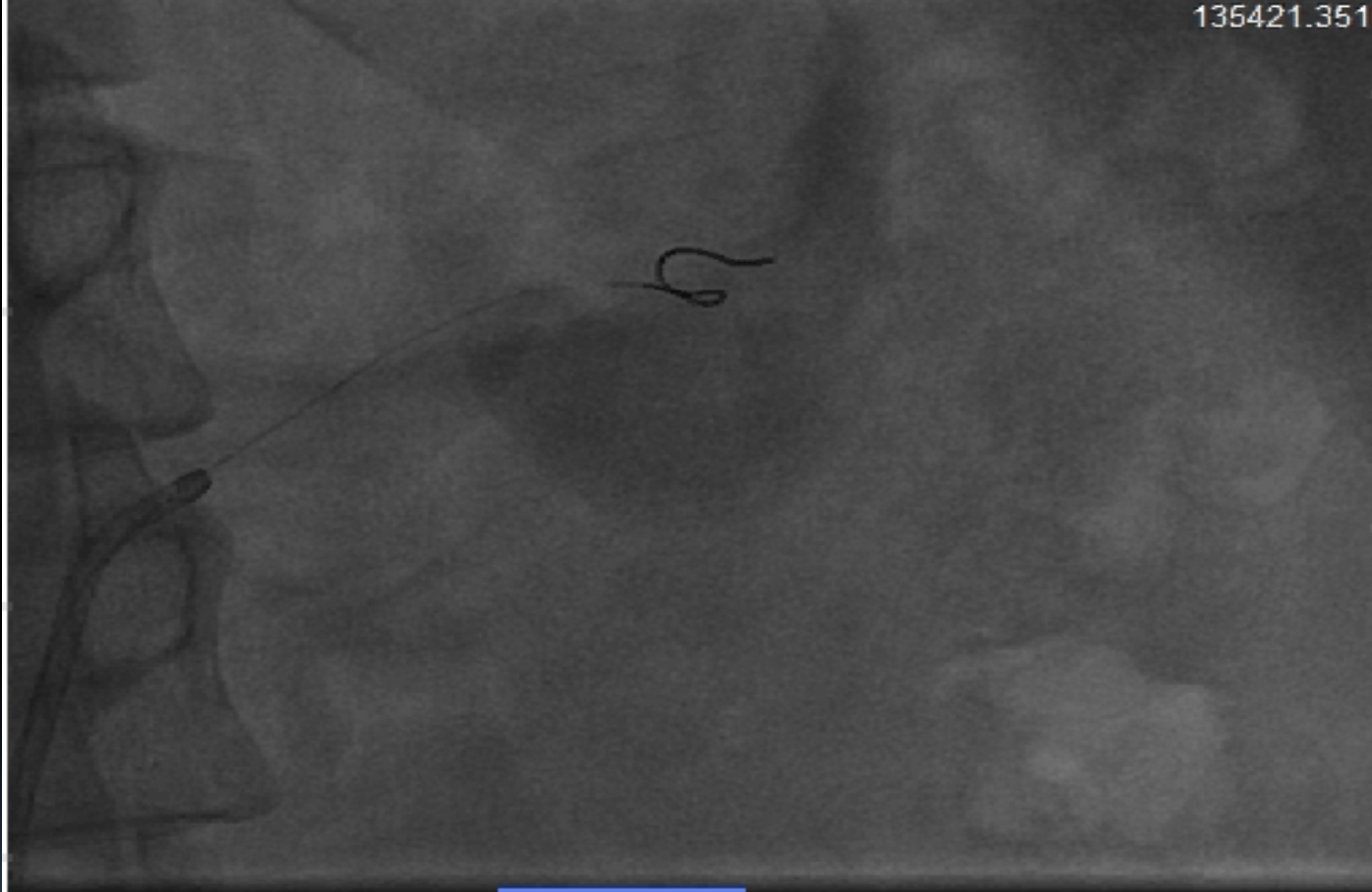
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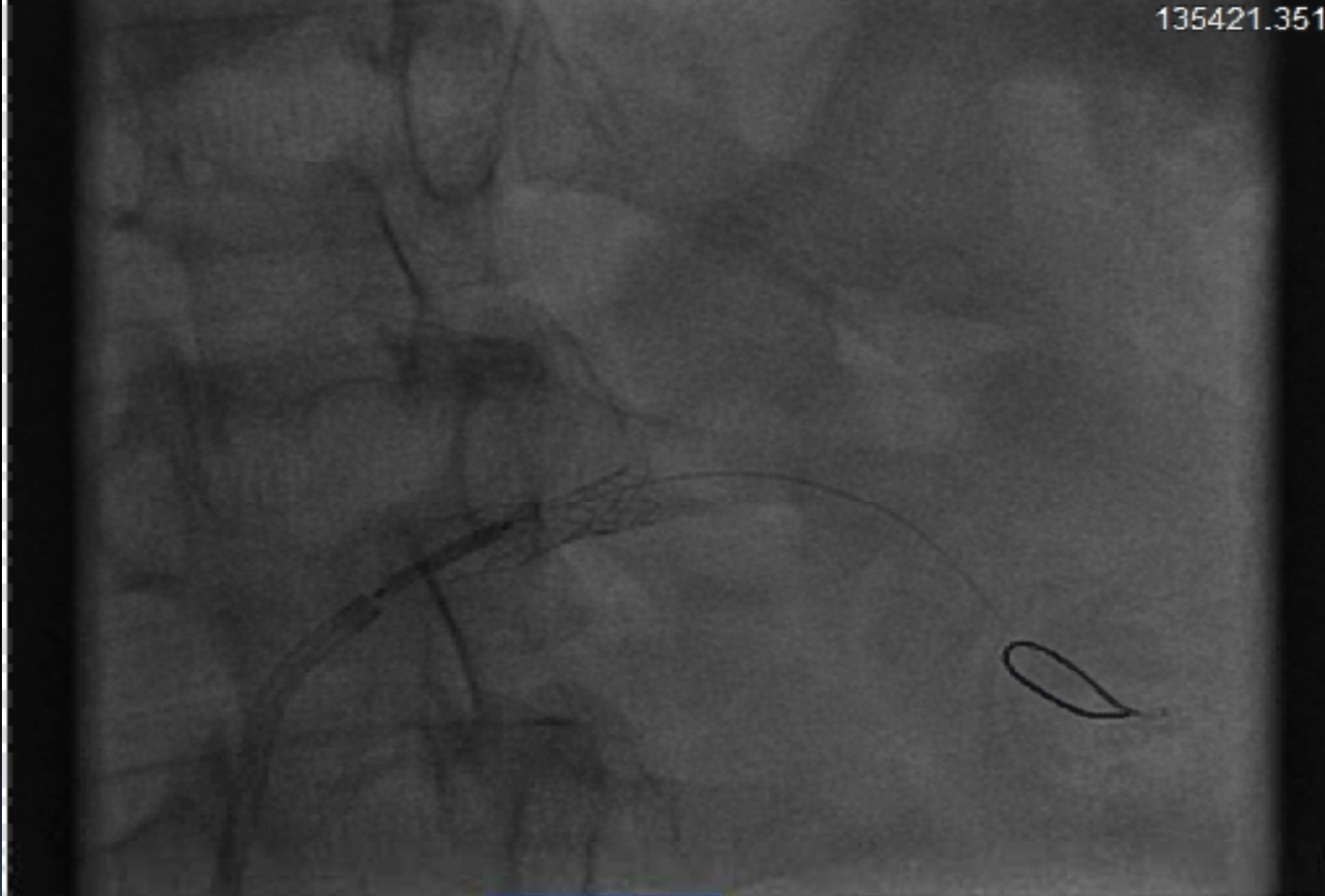
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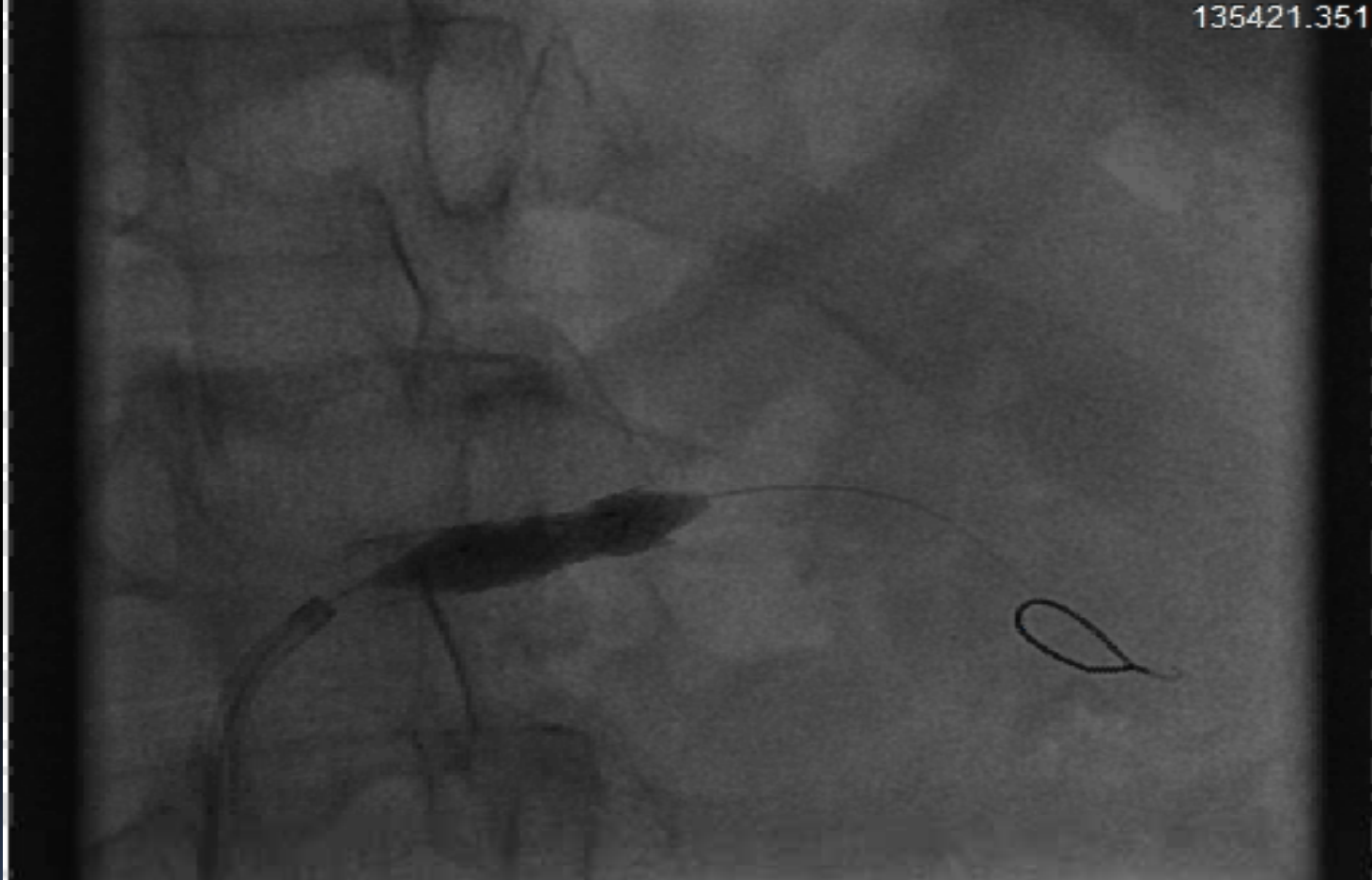
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FOLLOW UP

- In hospital → was on all three antihypertensives. Started complaining of reeling of head on 3rd post procedure day. BP → 110/60mmHg. Hydrochlorothiazide and Amlodipine stopped.
- Discharged on 5th day. On Aspirin. Clopidogrel. Atorvastatin. Telmisartan.



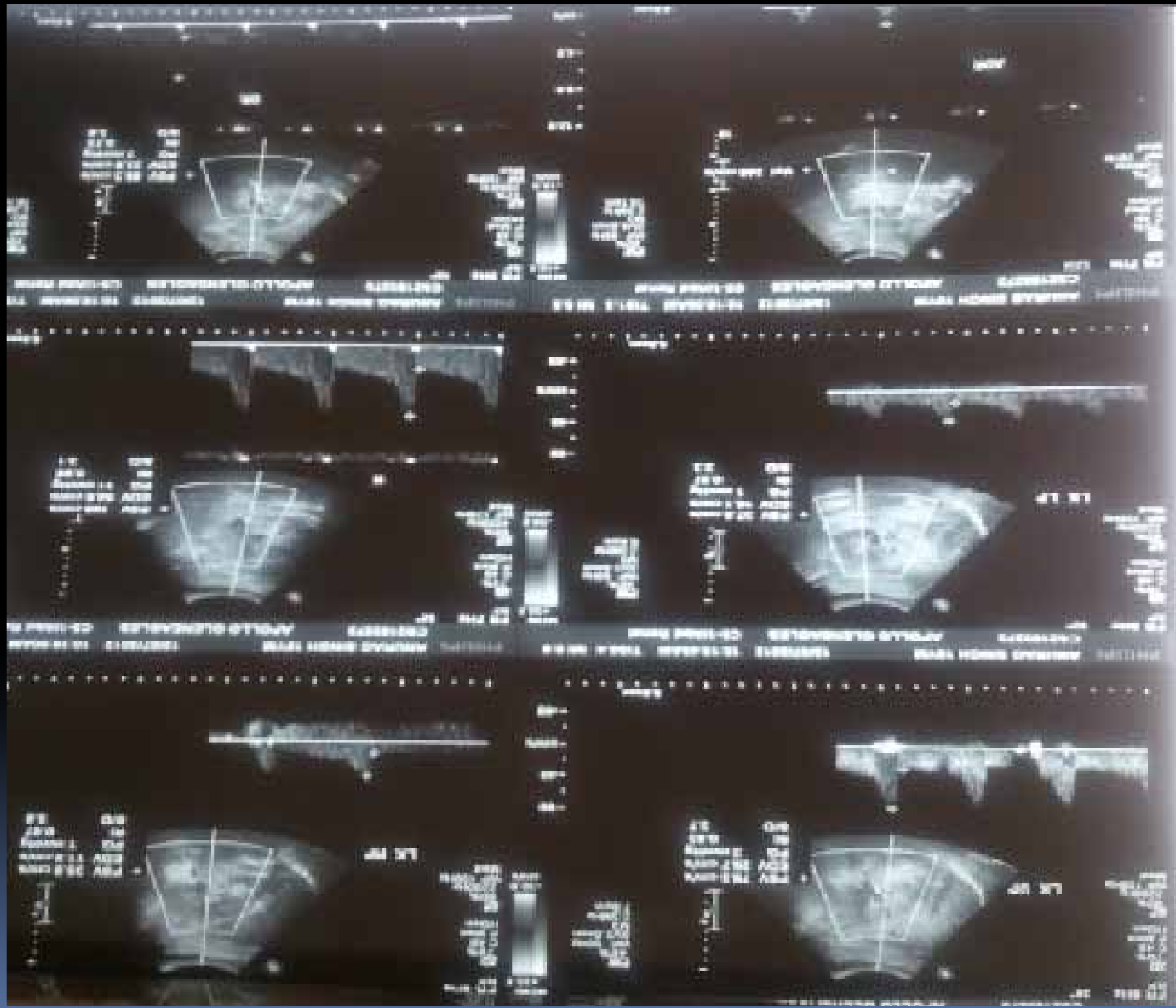
Domicilliary Follow Up

- Symptomatically well.
- BP → 130/70mmHg on 1st follow up after 2weeks.
- Developed a pre-syncope at college after 5weeks. BP → 100/60mmHg.
- All anti-hypertensives stopped.
- Till today not on any anti-hypertensive medication.



Follow up Doppler study

- RK-10.7cm. LK>9.0cm.
- Spectral pattern → normal low resistance and high diastolic flow in both kidneys.
- Resistive Index → <1 in all main and polar arteries.(0.46 to 0.68).





WHAT IS THE AETIOLOGY?

- Developed low grade fever with weight loss for last 3 months.
 - ESR → 68mm (mean)
 - CRP → 56
 - Tenderness over left carotid artery.
- ===== ? Takayasu's Arteritis.
- 