PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY IN PREGNANCY TECHNIQUES AND TIPS

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MITRAL STENOSIS IS A FIXED OBSTRUCTION OF THE MITRAL VALVE

PTMC IS THE PREFERRED MODALITY OF TREATMENT FOR MS

HOWEVER IN CONTRAST TO OTHER CLINICAL SCENARIOS PTMC IN PREGNANCY IS DIFFERENT ESPECIALLY SINCE RISK TO TWO LIVES ARE INVOLVED, OF THE MOTHER AND THE FOETUS

MS IS THE COMMONEST CAUSE OF ACQUIRED HEART DISEASE IN PREGNANCY

PREGNANCY WITH ITS ASSOCIATED PHYSIOLOGICAL CHANGES IN TOTAL BLOOD VOLUME, CARDIAC OUTPUT AND HEART RATE AGGRAVATES DYSPNOEA OF MS

THESE CHANGES ARE MAXIMAL IN SECOND TRIMESTER AND ARE POORLY TOLERATED BEYOND SECOND TRIMESTER AND CAN EVEN LEAD TO FRANK PULMONARY OEDEMA

MS IS RESPONSIBLE FOR A VARIABLE MATERNAL MORTALITY OF 0 – 32%

IT IS ALSO ASSOCIATED WITH FETAL MORBIDITY AND MORTALITY

RATE OF FETAL GROWTH RESTRICTION AND PRETERM BIRTH RISES WITH SEVERITY OF MS
WITH THIS BEING 14% IN MILD MS
AND 28% IN MODERATE MS
AND 33% IN SEVERE MS

ALL PATIENTS WITH MODERATE OR SEVERE MITRAL STENOSIS, EVEN IF ASYMPTOMATIC SHOULD BE COUNSELLED AGAINST PREGNANCY

IDEALLY PERFORM PTMC PRE-PREGNANCY

MILD MS: EVALUATE EVERY TRIMESTER AND BEFORE DELIVERY

IF PATIENT IS SYMPTOMATIC OR HAS PAH WTH PASP > 50 mm Hg:
INITIATE B1 SELECTIVE BB
USE DIURETICS IF SYMPS PERSISIT (BUT AVOID HIGH DOSES)
RESTRICT ACTIVITIES

PTMC IS TO BE CONSIDERED IN WOMEN WHO ARE CLASS III – IV NYHA AND/OR
PASP > 50 mm Hg DESPITE OPTIMAL MEDICAL THERAPY

PTMC IS IDEALLY PERFORMED IN SECOND TRIMESTER ONCE ORGANOGENESIS IS COMPLETED

CMV IS AN ALTERNATIVE WHEN PTMC SKILL NOT AVAILABLE

OPEN HEART SURGERY RESERVED FOR CASES IN WHICH ALL MEASURES FAIL AND MOTHERS LIFE IS AT RISK. OHS HAS A MORTALITY RISK OF 1.8 – 33%

VAGINAL DELIVERY TO BE CONSIDERED IN PATIENTS WITH MILD MS AND IN MODERATE OR SEVERE MS IN NYHA CLASS I- II WITHOUT PAH

CAESAREAN SECTION TO BE CONSIDERED IN PATIENTS WITH MODERATE OR SEVERE MS WHO ARE IN CLASS III/IV NYHA OR HAS PAH DESPITE MEDICAL THERAPY IN WHOM PTMC CANNOT BE PERFORMED OR HAS FAILED

PROCEDURAL SUCCESS:

REDUCTION OF MV GRADIENT LESS THAN 50% OF PRE-PTMC LEVELS

MVA ≥ TO 1.5 sq cm

WITH NO SIGNIFICANT MR (SEVERE MR: 4%)

PTMC IN PREGNANCY

PROCEDURE: SIMILAR TO NON-PREG WITH ATTENTION TO CERTAIN NUANCES

ISSUES IN PTMC IN PREGNANCY:

1. RADIATION: ABDOMINAL LEAD SHIELDING TO BE ENSURED TO LIMIT FETAL RADIATION EXPOSURE KEEP RADIATION DOSE AS LOW AS POSSIBLE BY KEEPING FLUORO TIME AS MINIMAL AS POSSIBLE
2. GRAVID UTERUS COMPRESSING IVC
3. HEART PUSHED UP AND MORE HORIZONTAL SO PUNCTURE SITE IS DIFFERENT
4. CAUTION WITH DRUGS, GA
5. TOE CAN BE DISCOMFORTING AND TOE GUIDED PTMC IS STILL NOT RISK FREE

MOST IMPORTANTLY:

TO BE PERFORMED BY EXPERIENCED OPERATORS

THE AIM
IS ONLY TO RELIEVE THE MITRAL STENOSIS AND FACILITATE CONTINUATION OF PREGNANCY AND NORMAL DELIVERY
AND TO AVOID ACUTE SEVERE MR NEEDING EMERGENCY SURGERY
AND NOT TO TARGET THE BEST RESULT

SO USUAL STRATEGY IS TO UNDERSIZE THE BALLOON BY 2 mm
SERIAL DILATATIONS ARE NOT PERFORMED TO MINIMIZE FLUORO TIME

PATIENT 1

24 YEAR OLD LADY

FROM PERIPHERAL VILLAGE

32 WEEKS GESTATION

CLASS III NYHA SYMPTOMS

HR: 90/ min BP: 110/70 mm Hg

MV PG: 40 mm Hg MG: 20 mm Hg

MVA < 1.0 sq cm No MR

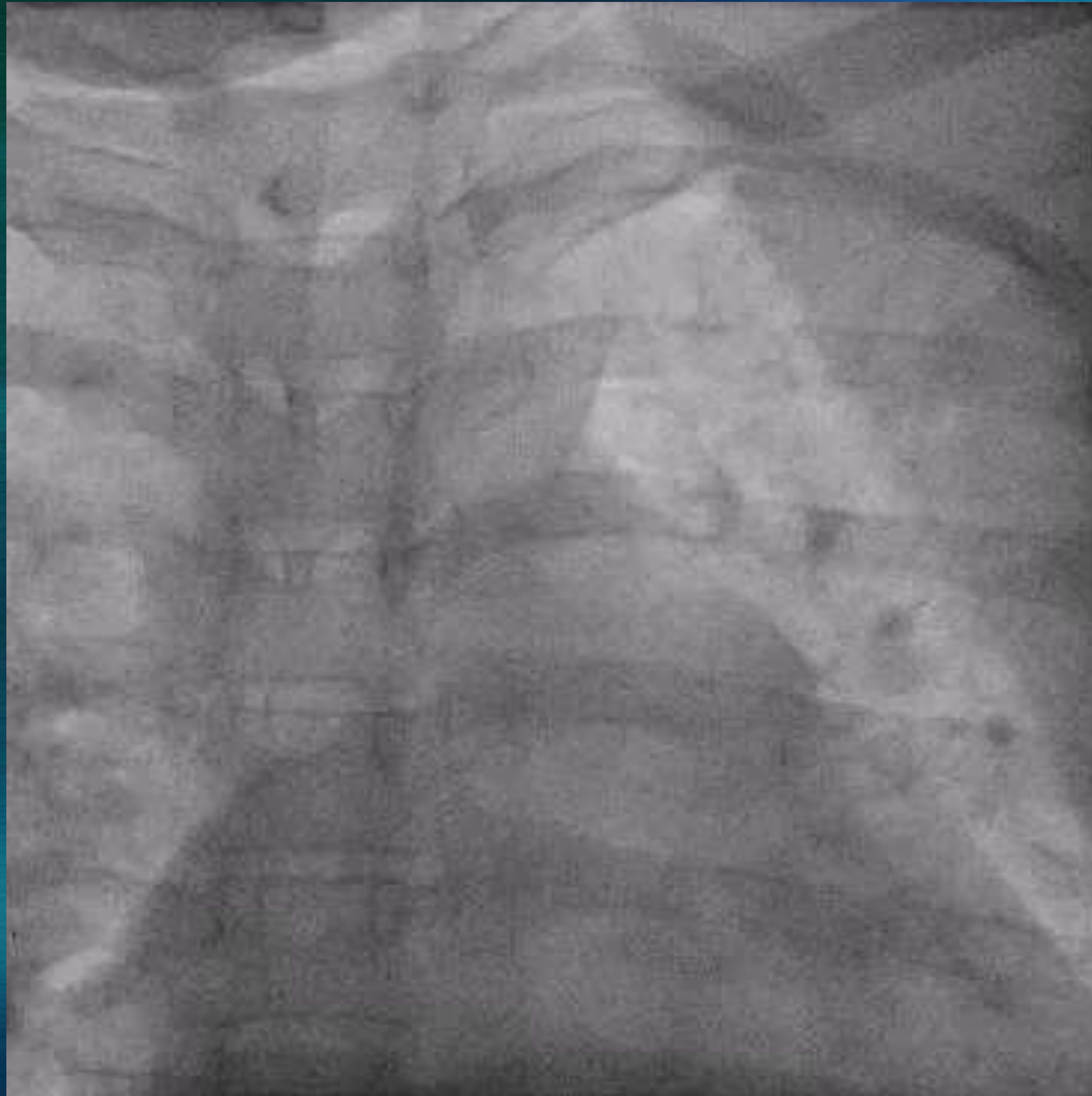
PASP: 75 mm Hg; EF: 65%

PTMC DONE: 18 FEB 2015

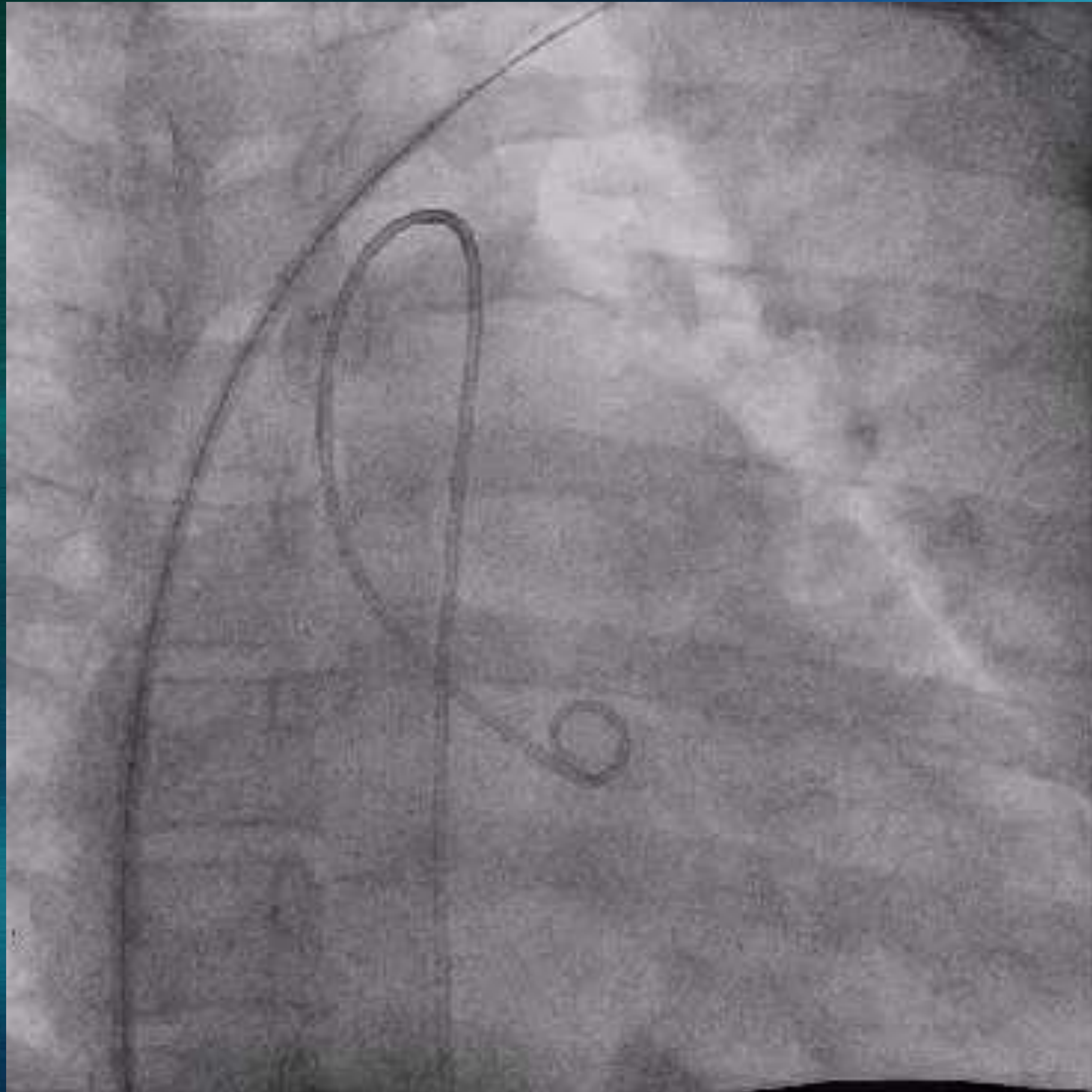
HEIGHT 157 cm BALLOON: 24 mm

LEAD COVER OF THE PREGNANT ABDOMEN

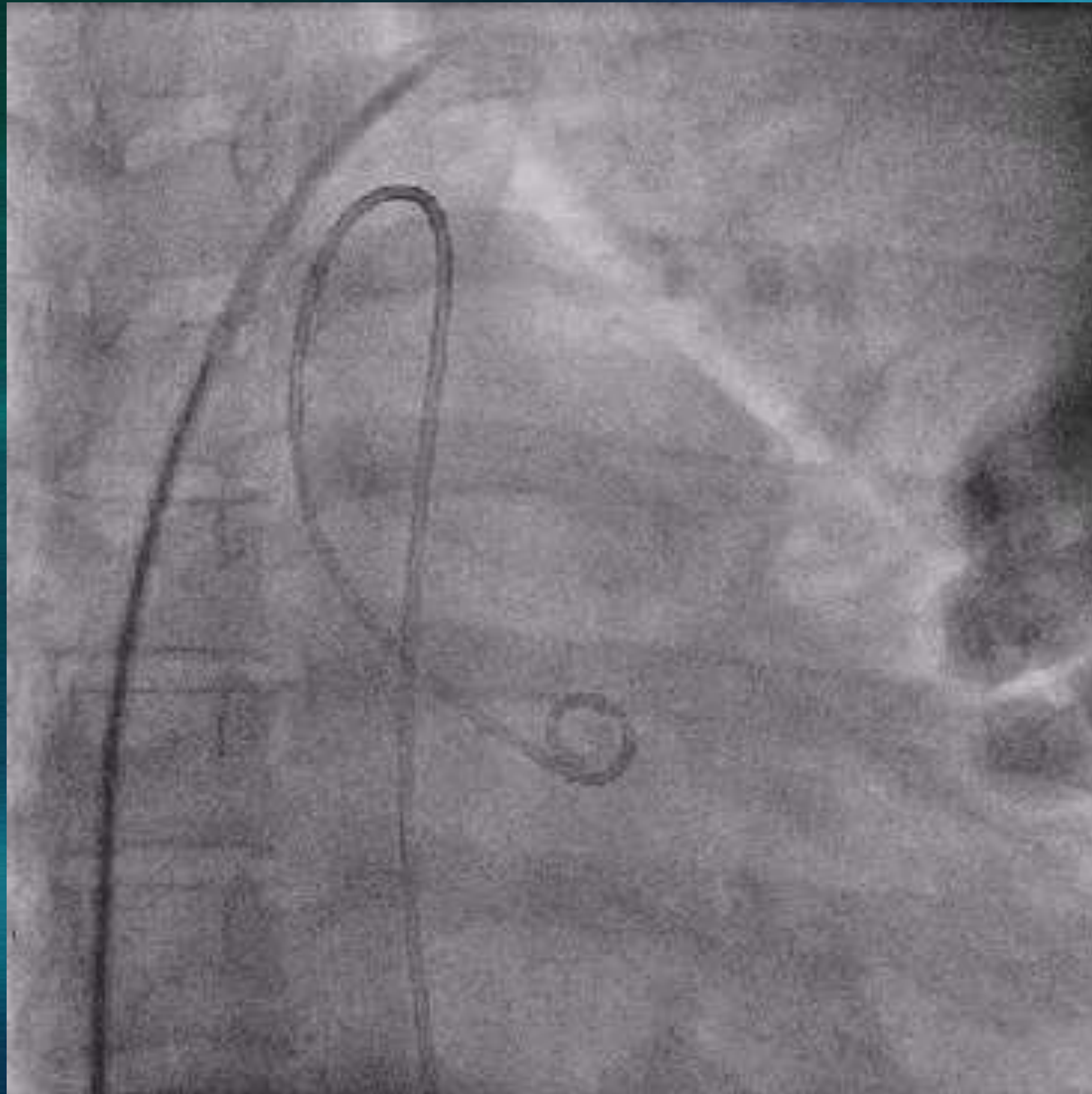
0.035 WIRE INTO LEFT SUBCLAVIAN

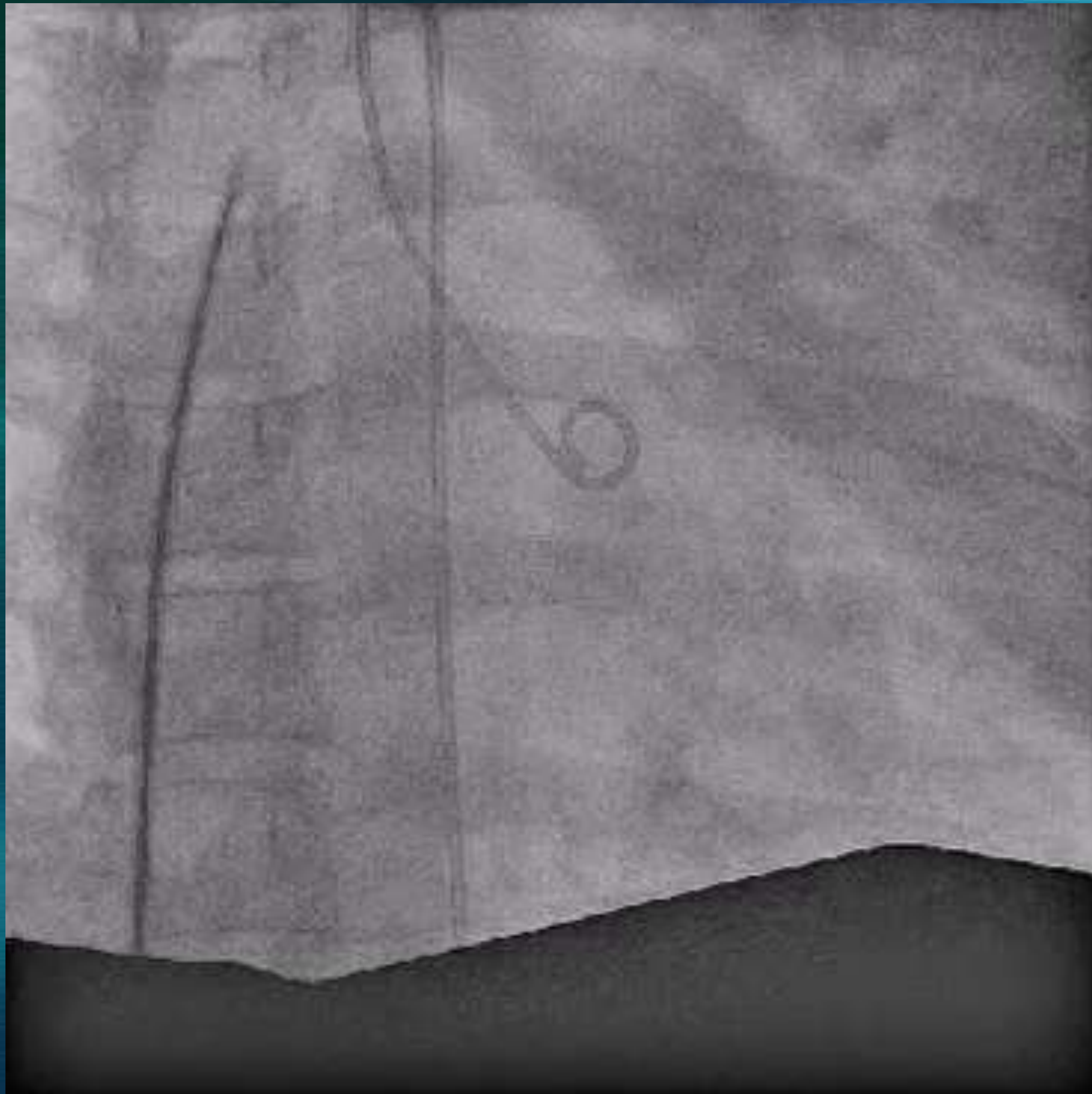


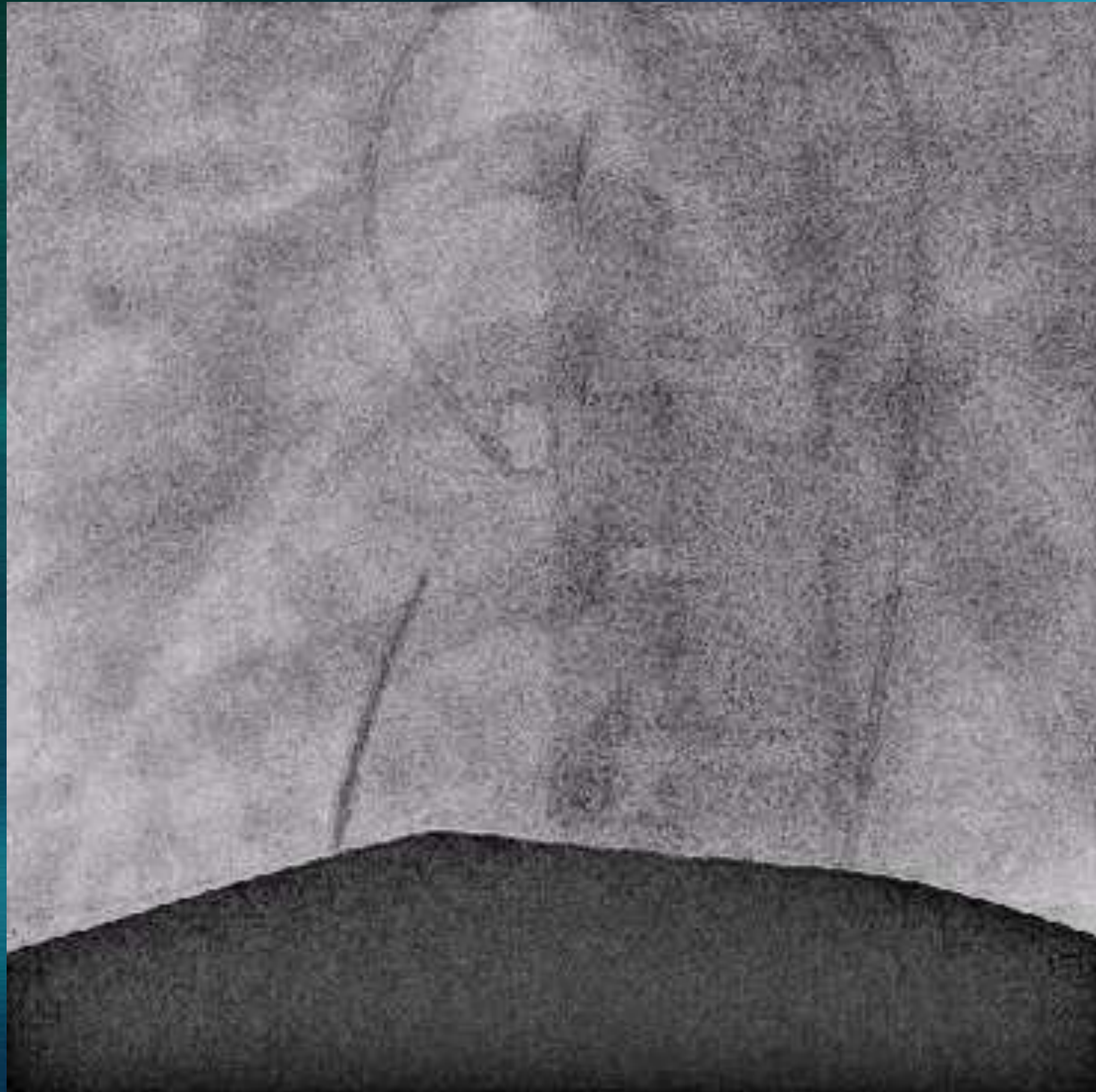
PIGTAIL INTO THE AORTA & MULLINS SHEATH WITH DILATOR INTO SUBCLAVIAN VEIN



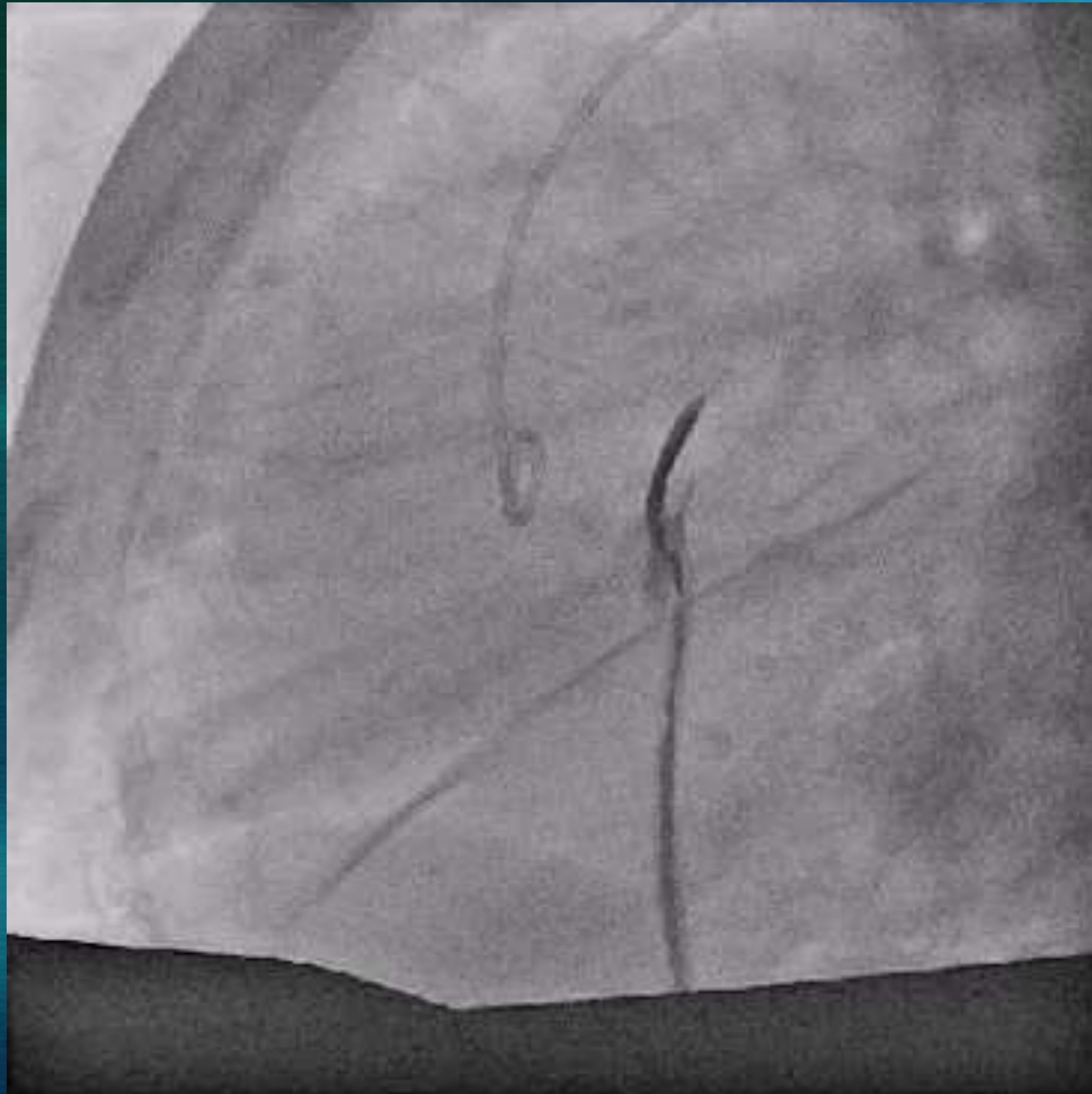
BROCKENBOROUGH NEEDLE INTO MULLIN'S SHEATH



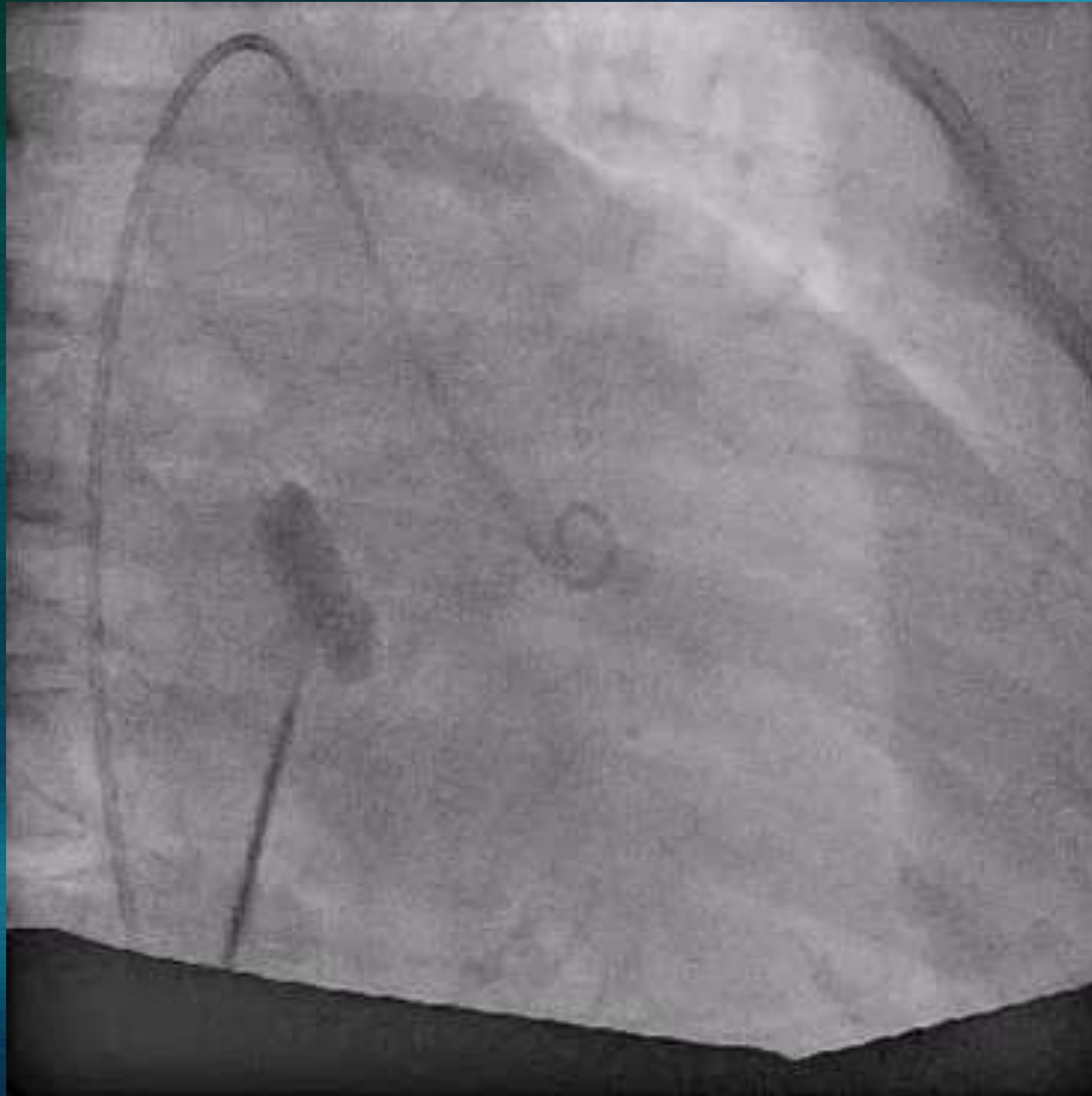




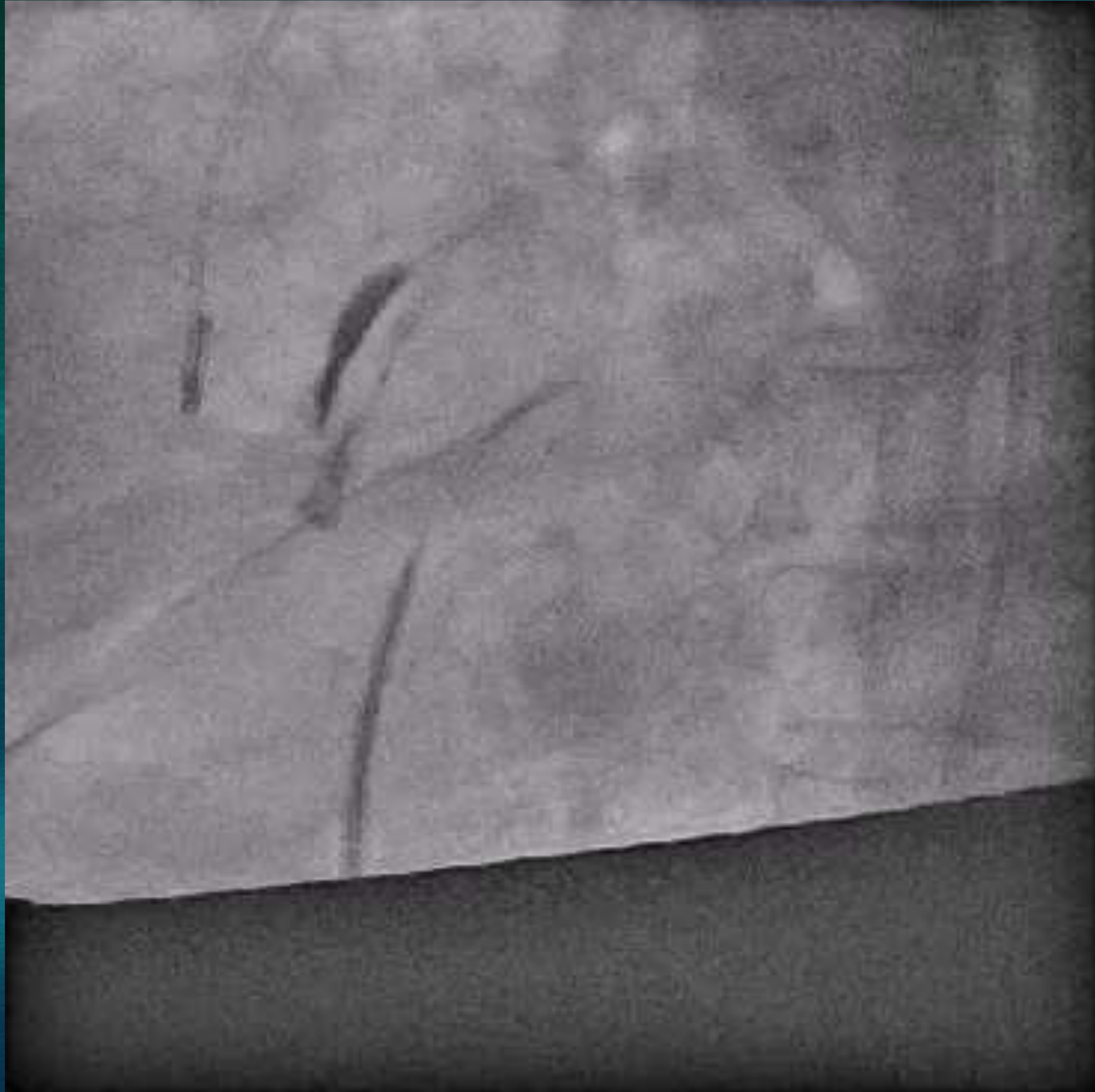
THICK SEPTUM:DISSECTION OF HIGH SEPTUM



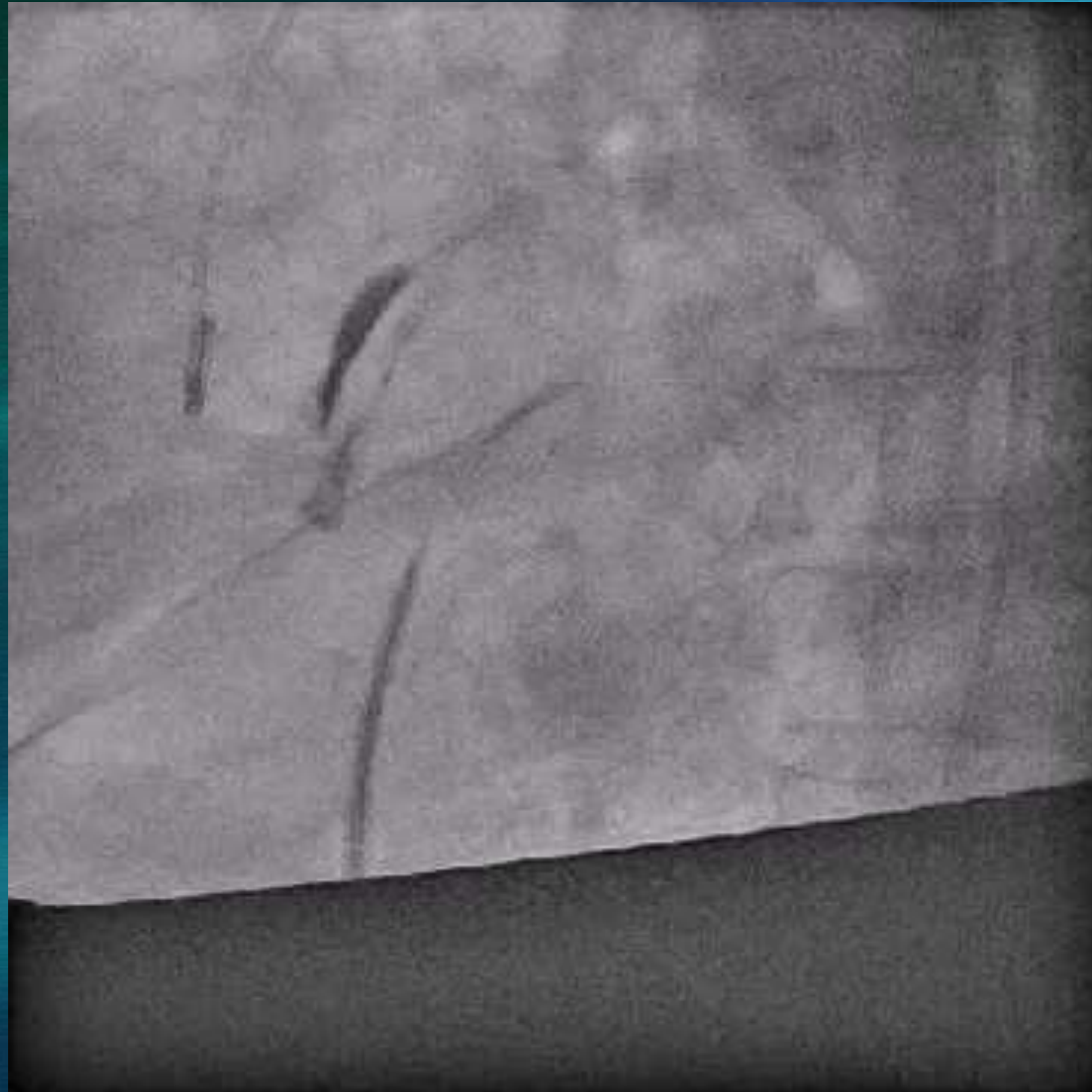
CONFIRMING NEEDLE POSITION IN RAO VIEW



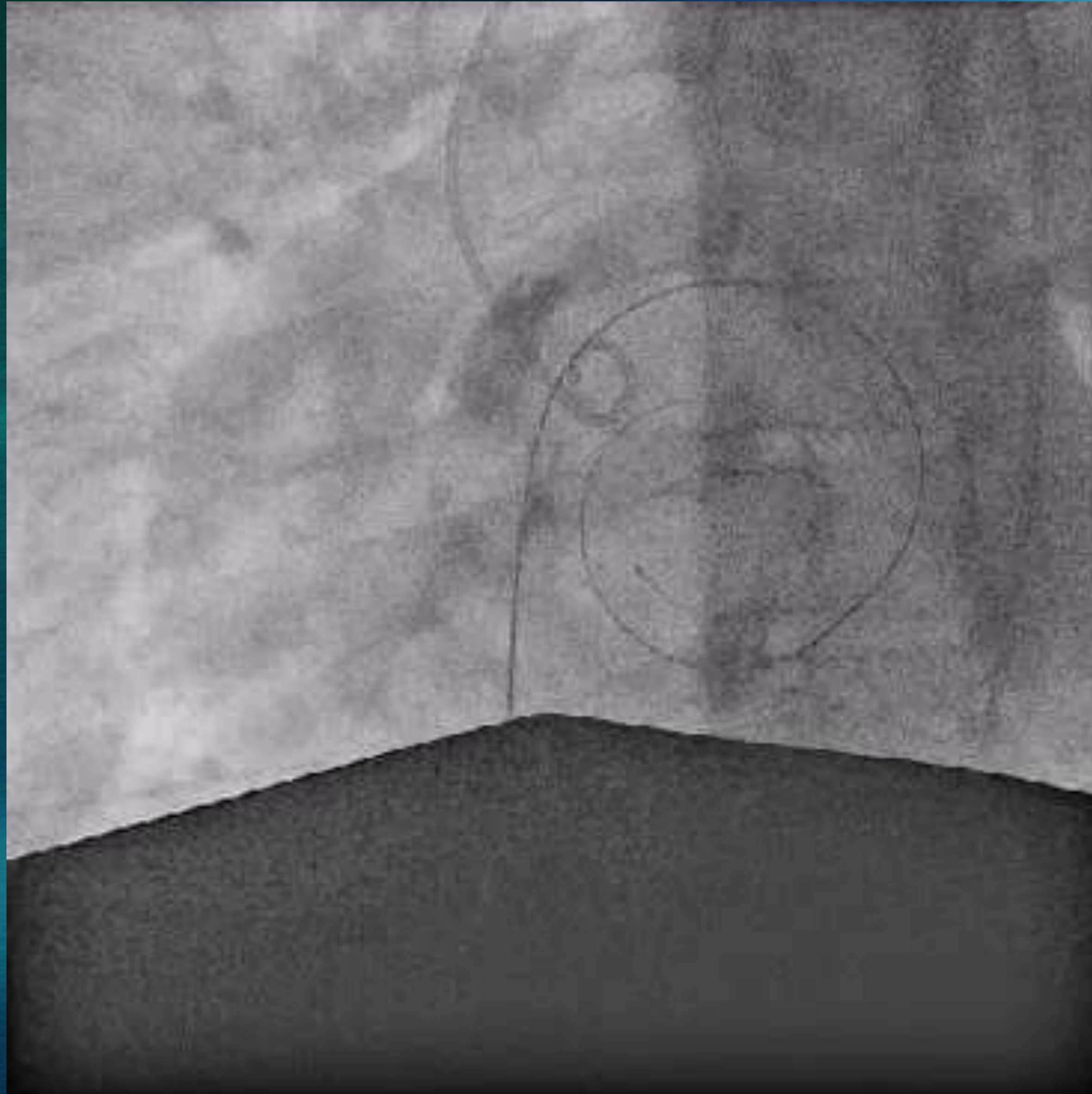
LATERAL VIEW



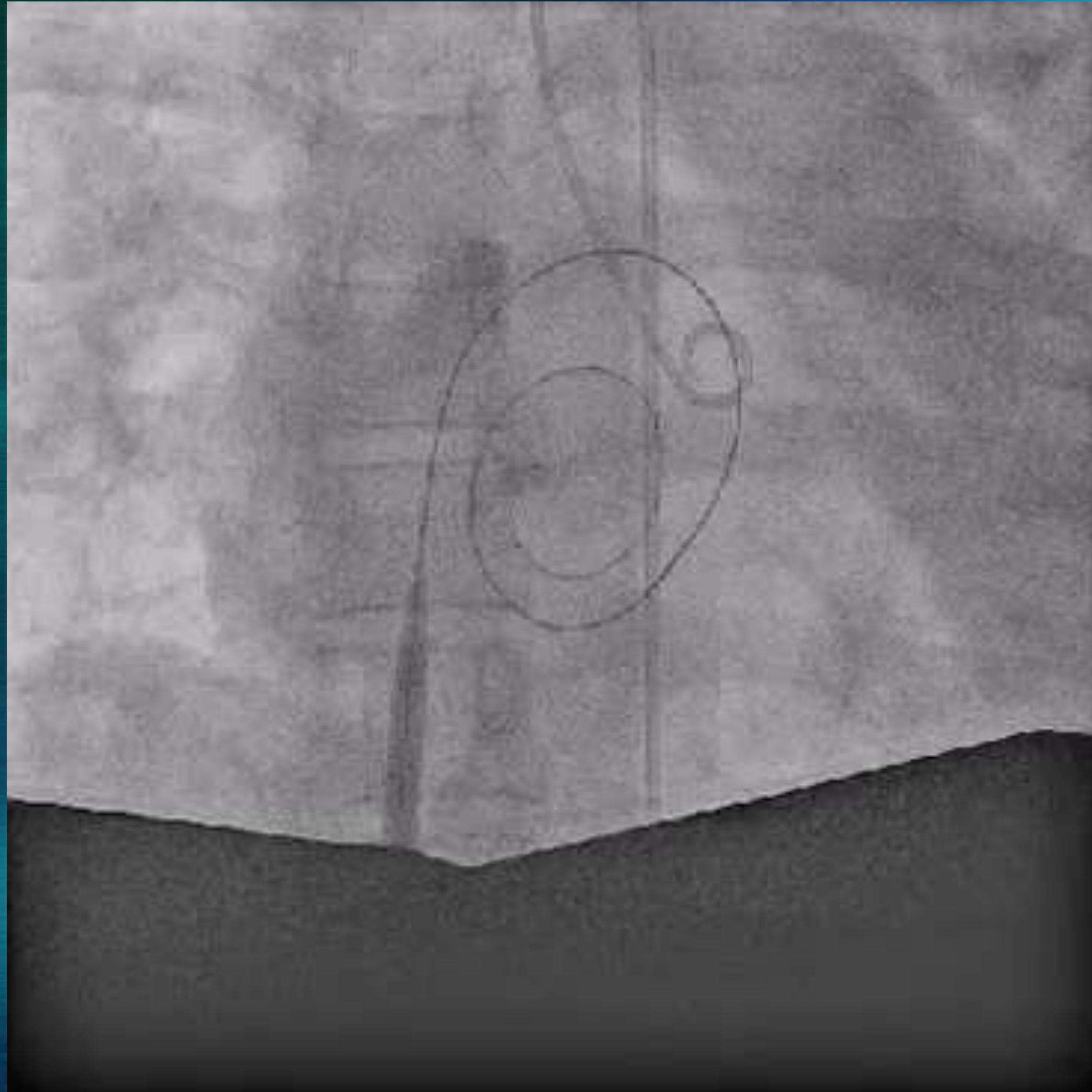
PUNCTURE MADE IN LATERAL VIEW



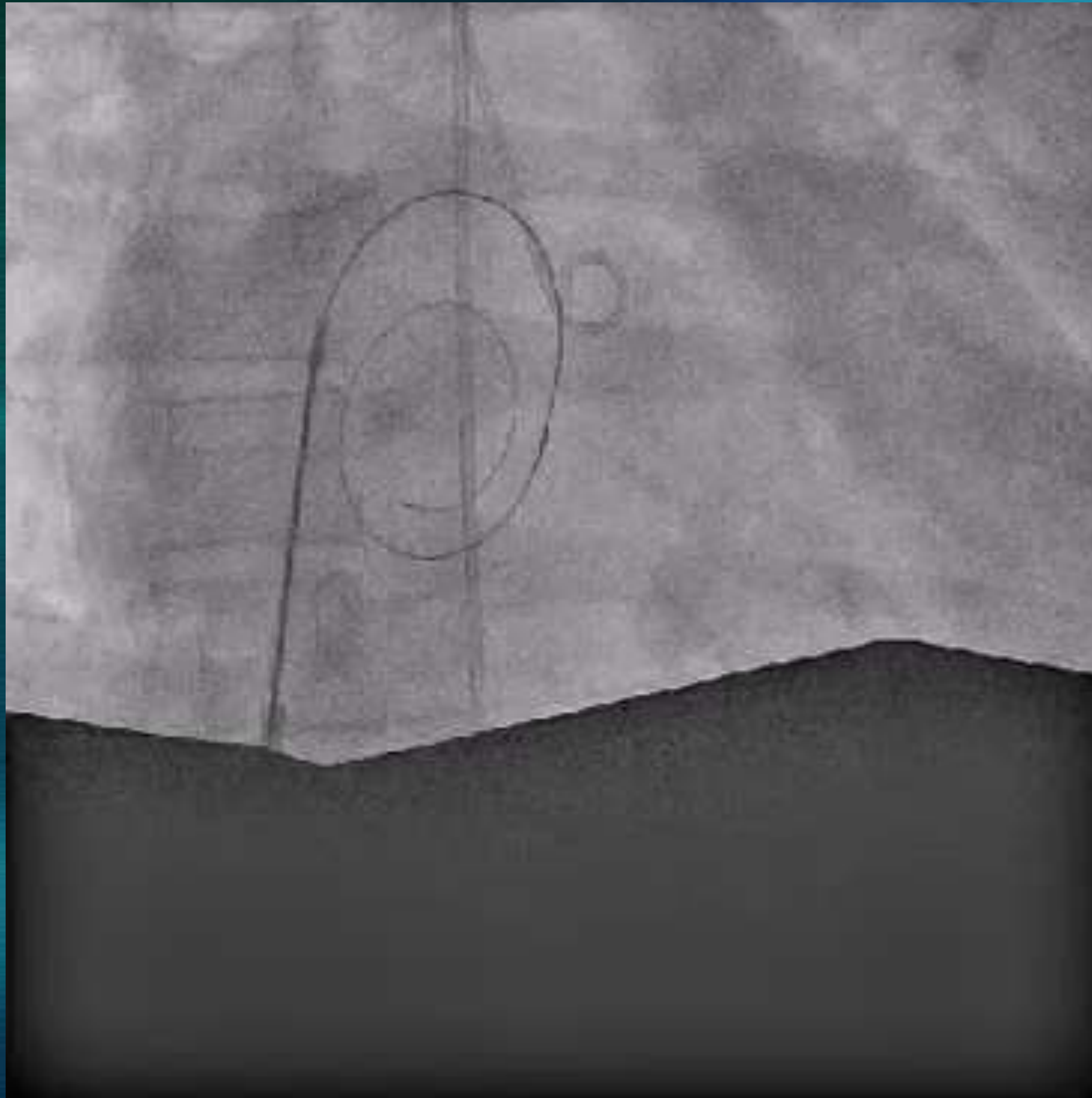
LA WIRE ADVANCED



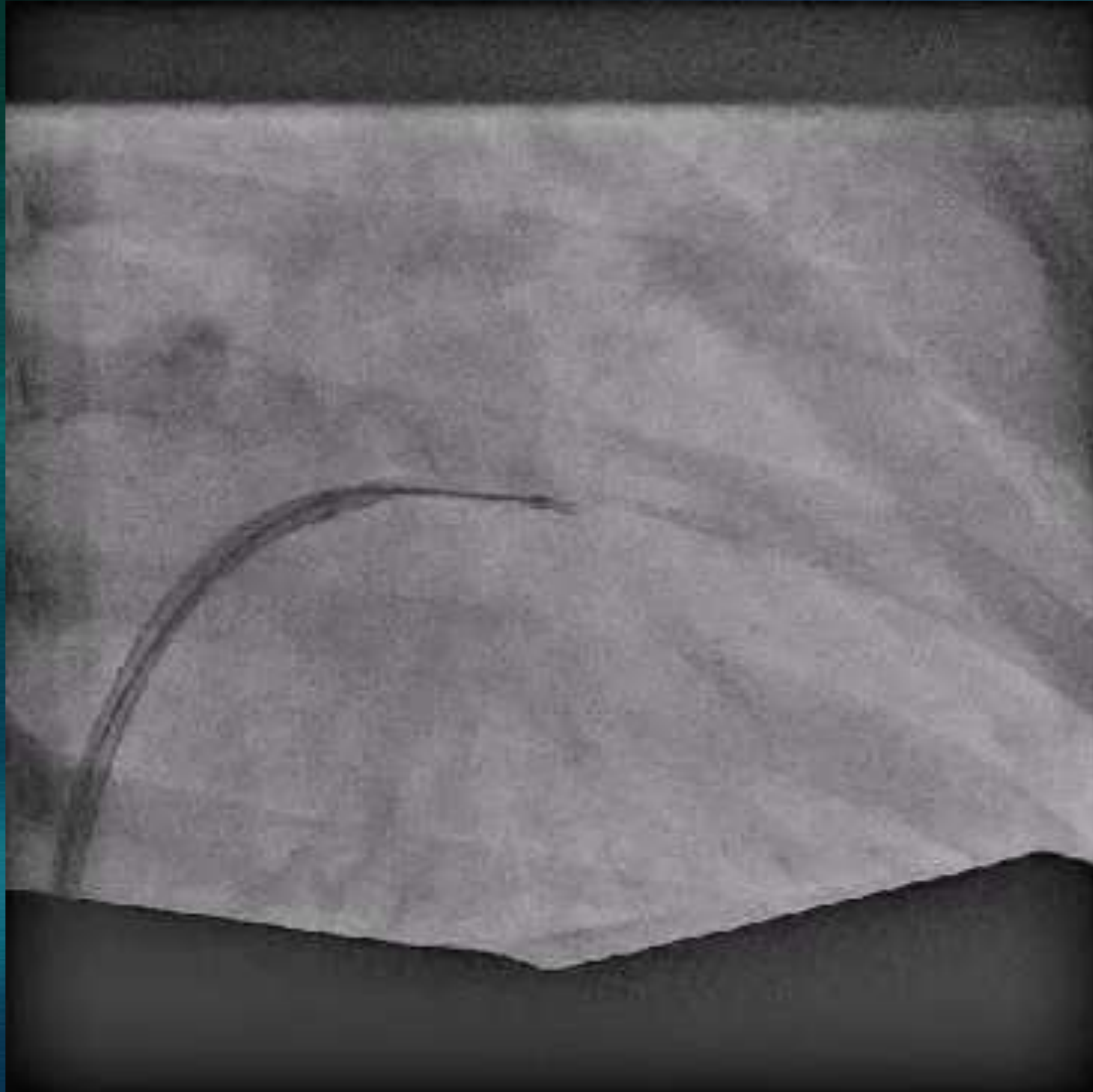
SEPTAL DILATATION



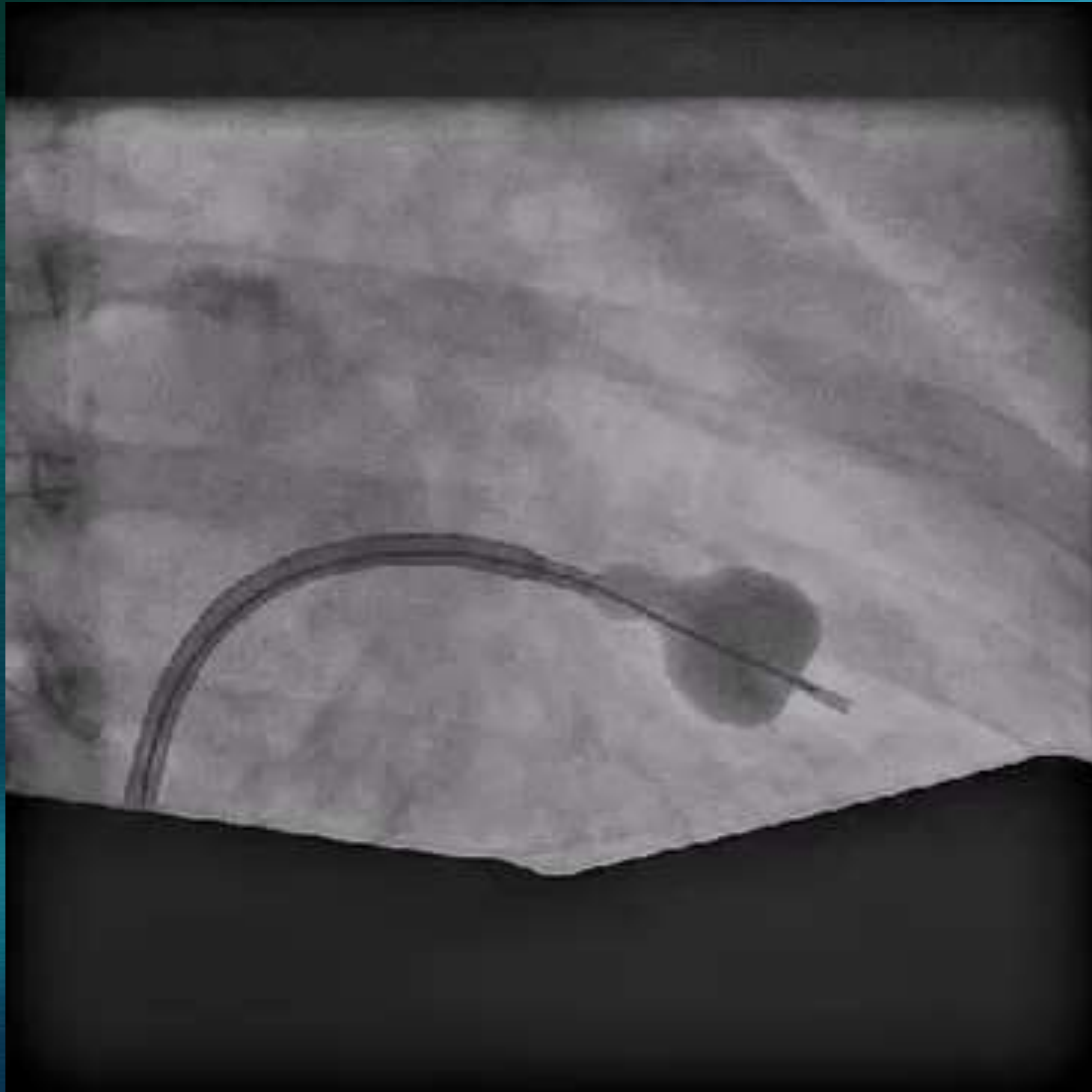
ADVANCING THE BALLOON

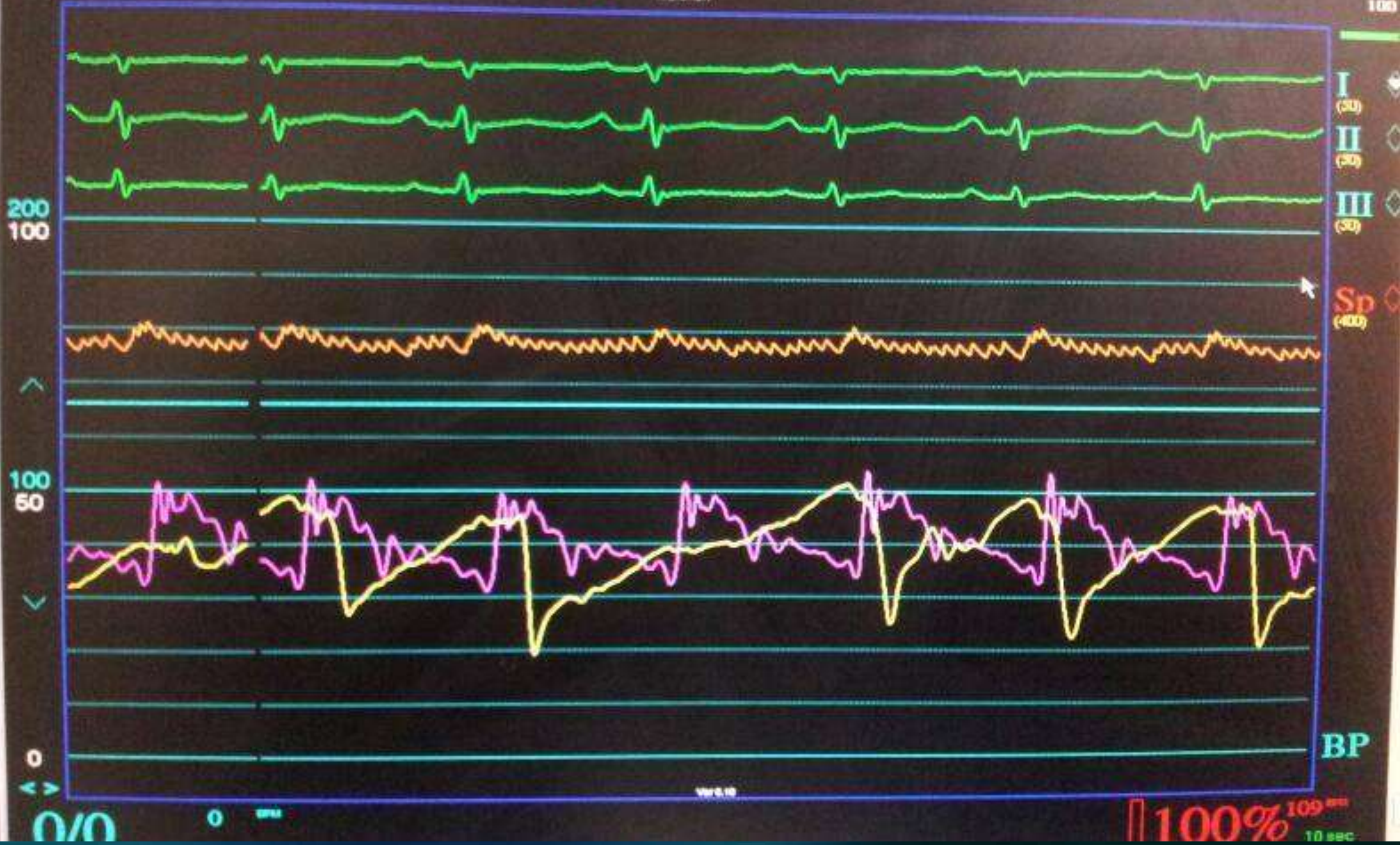


CROSSING THE MITRAL VALVE



DILATATION




JANSI RANI, 24/F : 403065
AO 108/64 (82)
111
MONITOR
LV 51/22, 45
200
100
I
II
III
Sp
100
50
0
BP
0/0
0
100%
109
10 sec

MVA: 1.7 – 2.0 sq cm

No MR

SYMPTOMS: CLASS I NYHA

THE TEAM

DISCHARGED NEXT DAY
DEIVERED PER VAGINA: A MONTH LATER

2 YEARS LATER

PATIENT 2

20 YEARS OLD LADY
PRESENTED TO ME AT 36 WEEKS 4 DAYS GESTATION
WITH NYHA CLASS III PAST 1 MONTH
SYMPTOMS WERE INCREASED ON PRESENTATION 11 SEP 2013
EDD: 31 SEP 2013

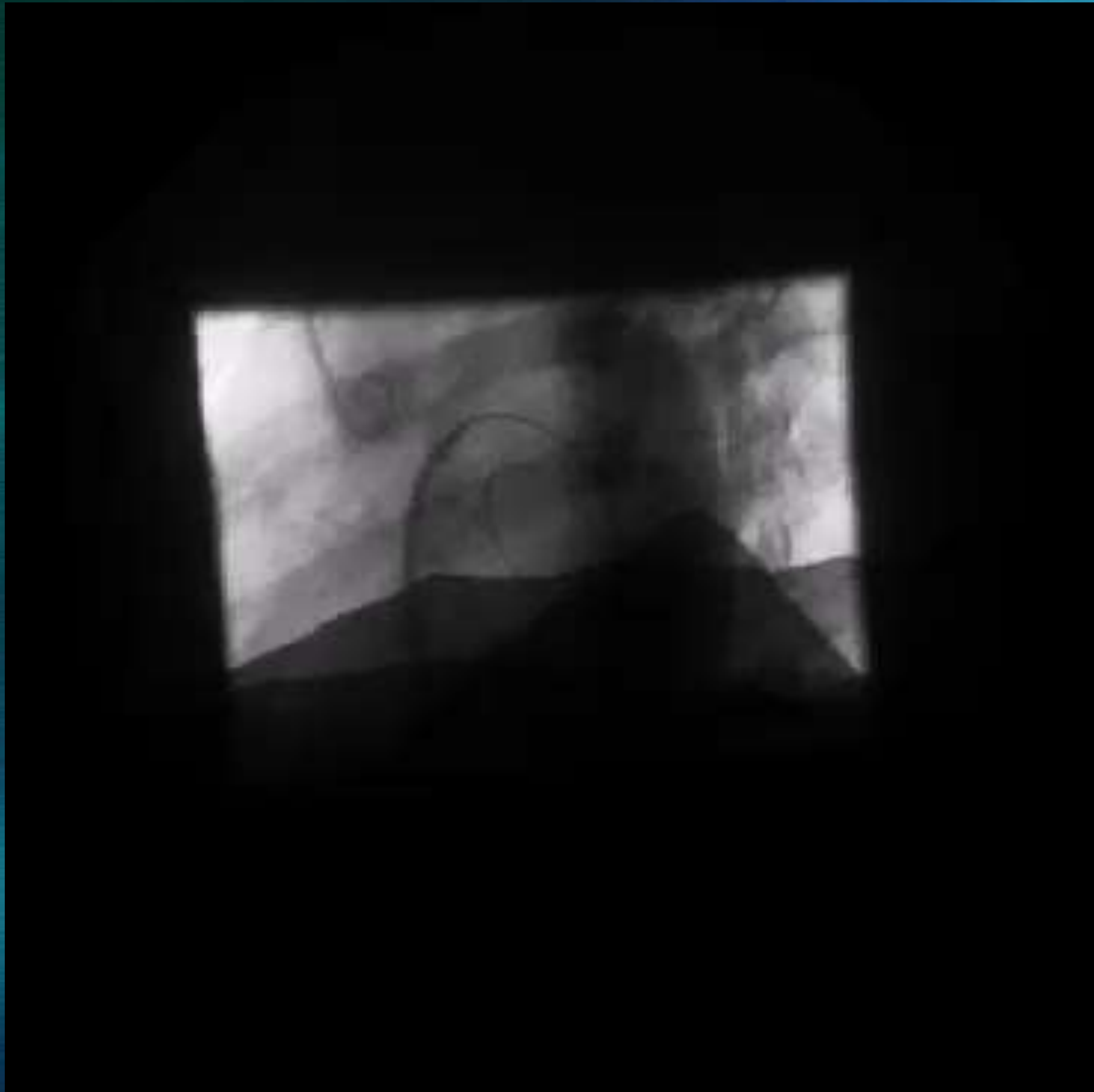
MV PG: 32 mm Hg MG: 20 mm Hg
MVA: 0.9 - 1.0 sq cm
DILATED LA
RVSP: 60 mm Hg
EF: 55%

STARTED ON BETA-BLOCKER
SEND TO OBSTETRICIAN WITH ADVICE OF PTMC

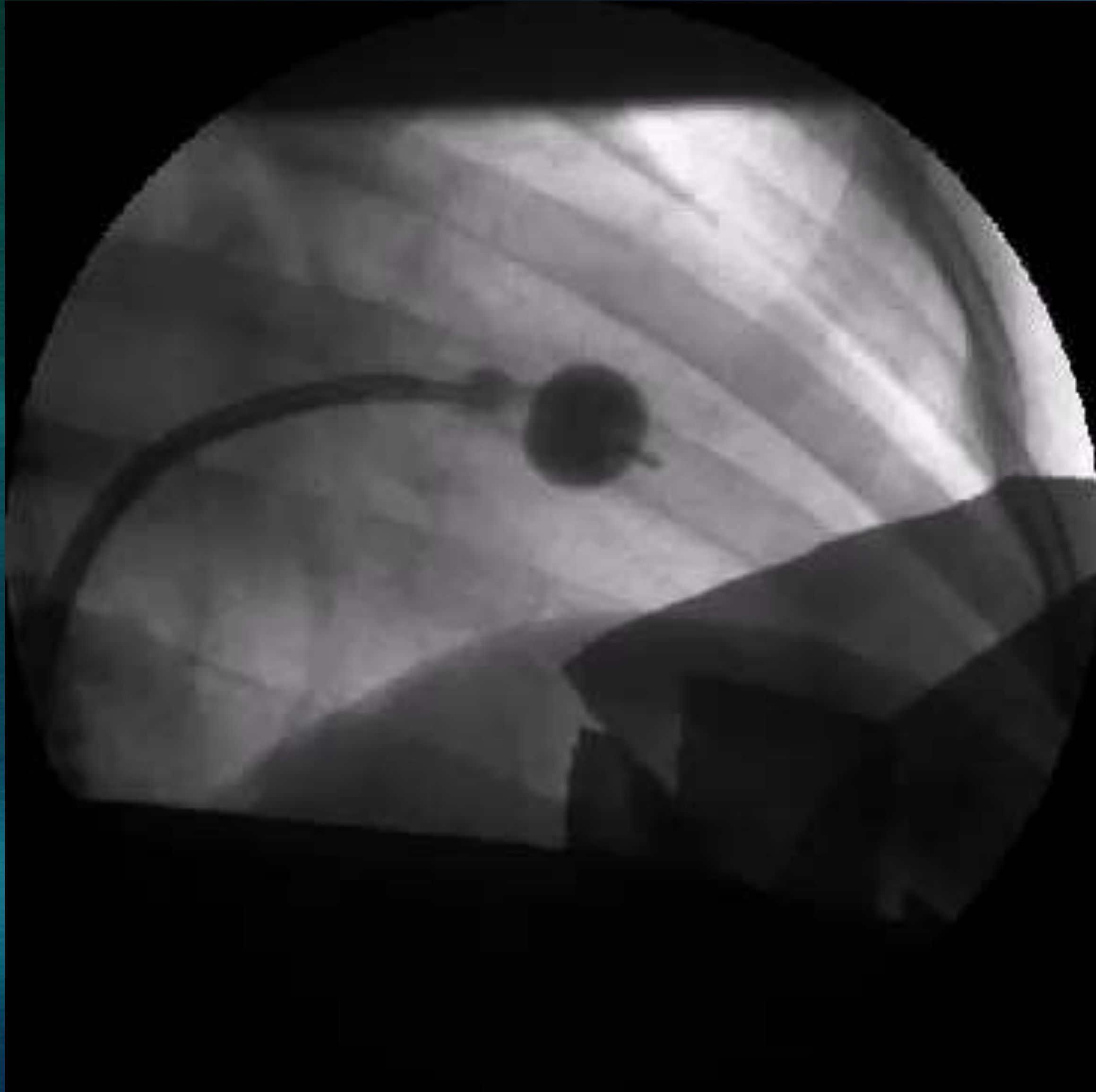
SEND TO ME AT BEGINNING OF LABOUR PAIN ON 20 SEP 2013 LATE EVENING

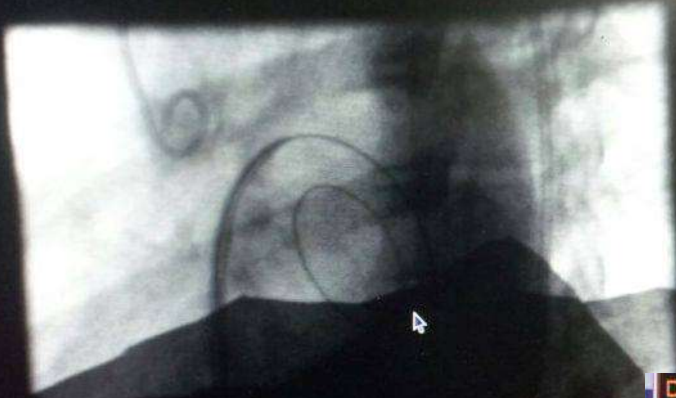
PTMC: IMMEDIATELY 20 SEP 2013

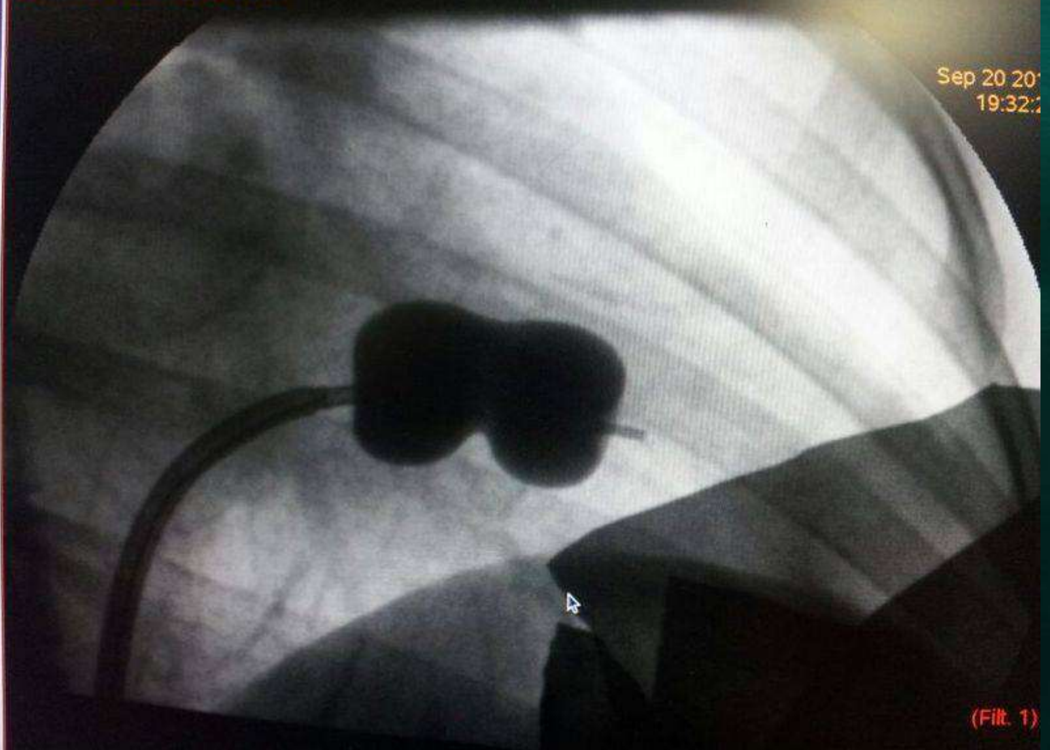
LEAD COVERAGE OF THE PREGNANT ABDOMEN



153 cm HEIGHT 24 mm BALLOON 23




DR.BINOY JOHN/DR.DBN
19:27


DR.BINOY JOHN/DR.DBN
99246/20
(Filt. 1)

POST PTMC:

NYHA CLASS I
MVA: 2.1 sq cm
MV PG: 10 mm Hg MG: 4 mm Hg
DILATED LA
RVSP: 60 mm Hg

DELIVERED PER VAGINA 7 HOURS LATER

1 MONTH AFTER NORMAL VAGINAL DELIVERY

POINTS TO REMEMBER

SEVERE MITRAL STENOSIS IS ASSOCIATED WITH SIGNIFICANT MORBIDITY AND MORTALITY RISK TO THE MOTHER AND GROWING FOETUS

PTMC IS THE PROCEDURE OF CHOICE IN PREGNANT WOMEN NEEDING PROCEDURAL INTERVENTION

TO BE DONE WHEN CLASS III OR IV NYHA SYMPTOMS ARE PRESENT IN SPITE OF OPTIMAL MEDICAL THERAPY

OR IF THERE IS SEVERE MITRAL STENOSIS ASSOCIATED WITH PAH > 50 mm Hg

TARGET IS TO UNDERDILATE AND OBTAIN A SAFE RESULT TO ALLOW SAFE CONTINUATION OF PREGNANCY AND AVOIDING AN ACUTE MR NEEDING EMERGENCY SURGERY

DUE TO THE RISK INVOLVED TO MOTHER AND FOETUS PTMC IS BEST PERFORMED ONLY BY THOSE WITH GOOD EXPERIENCE IN COMPLEX PTMC

KAMSAHAMNITA