



CHRONIC LIMB ISCHAEMIA

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DEFINITION

- PERIPHERAL ARTERIAL OCCLUSIVE DISEASE (PAOD/PAD/PVD) REFERS TO THE OBSTRUCTION OR DETORINATION OF ATERIES OTHER THAN THOSE SUPPLYING THE HEART AND WITHIN THE BRAIN



- IMPAIRMENT OF CIRCULATION

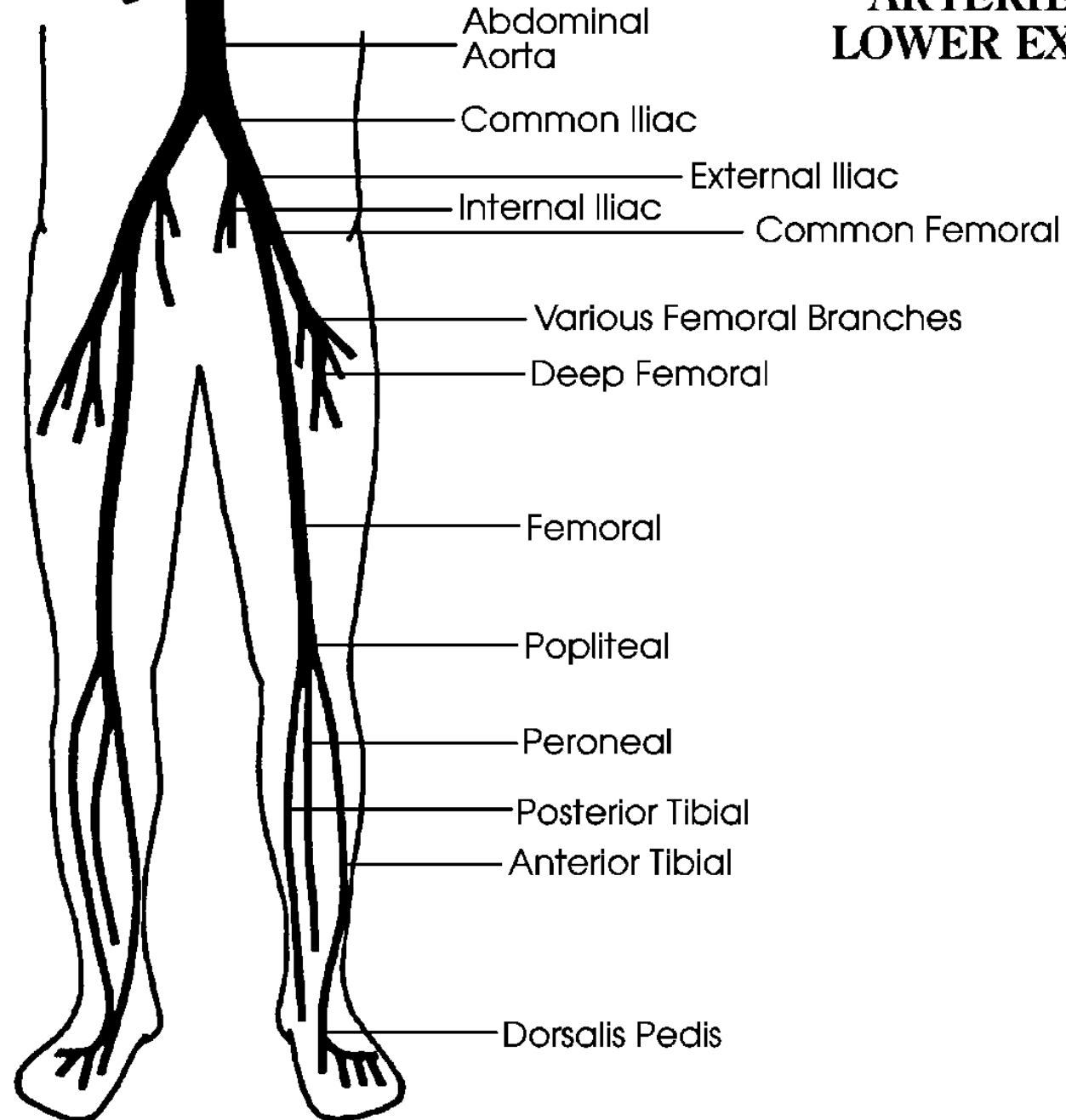
- QUALITY OF LIFE/COST OF TREATMENT



AETIOLOGY

- BLACK (HISPANIC) / MALE
- INCREASING AGE
- SMOKING
- HYPERTENSION
- DYSLIPIDEMIA
- HYPERCOAGUBLE STATES
- RENAL INSUFFICIENCY
- DM

ARTERIES OF THE LOWER EXTREMITIES



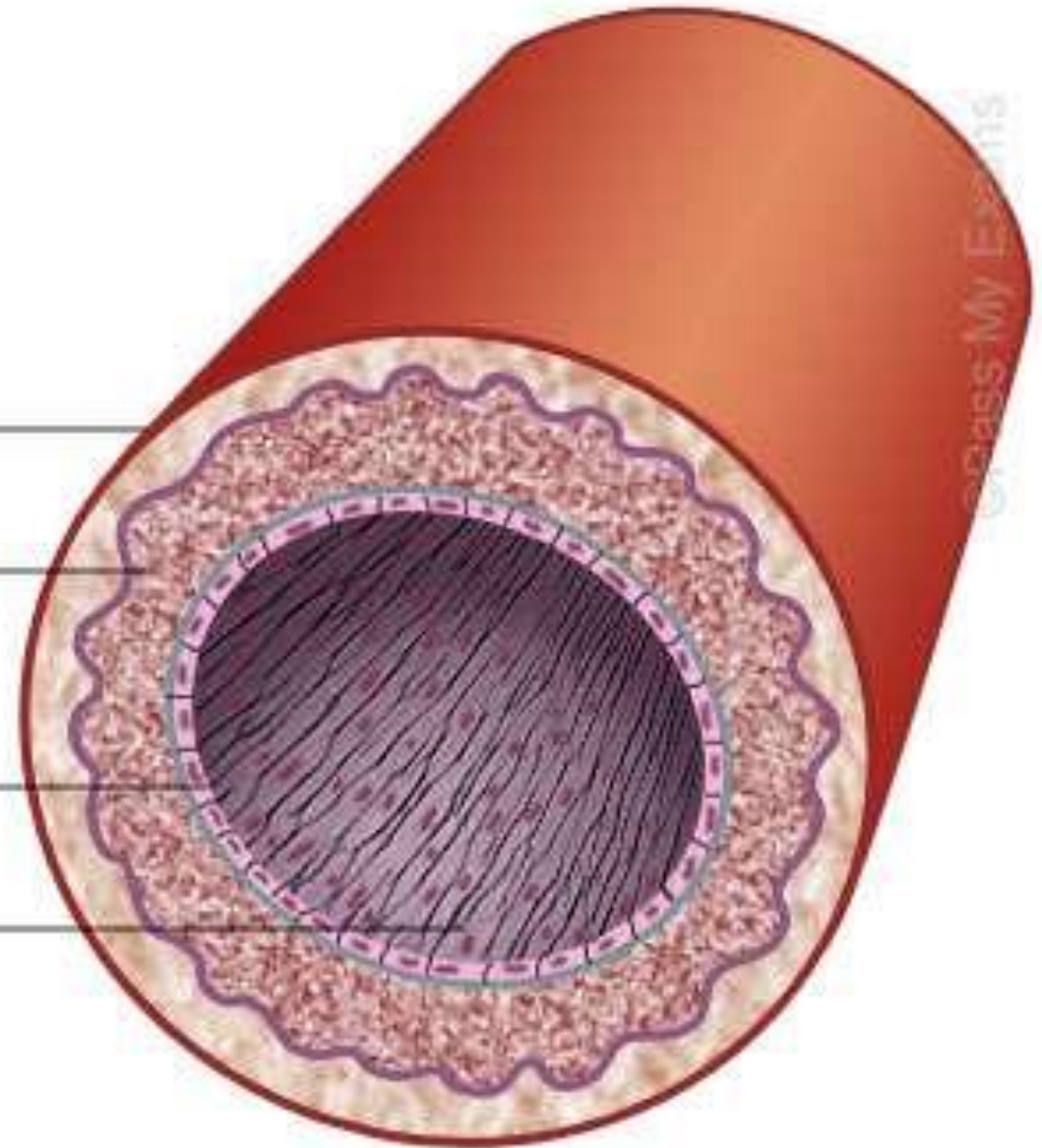
Cross-Section

Thick Outer Wall

Thick inner layer
of muscle and elastic fibres

Endothelium

Narrow central Lumen
through which blood flows



CHRONIC ISCHAEMIA

- NO SUDDEN OBSTRUCTION
- GRADUAL NARROWING OF LUMEN
- ENOUGH TIME FOR COLLATERALS TO DEVELOP
- MORE TOLERANT TO PROLONGED ISCHEMIA



CAUSES

- ATHEROSCLEROSIS
- TAO (BUERGER'S DISEASE)
- VASCULITIS SYNDROMES
- ENTRAPMENT SYNDROME
- CYSTIC ADVENTITIAL DISEASE
- ENDOFIBROSIS IF ILIAC ARTERY

ATHEROSCLEROSIS = ATHERO + SCLEROIS



STAGES OF ATHEROSCLEROSIS

Healthy
artery



Build-up
begins



Plaque
forms




Plaque
ruptures;
blood clot
forms





ISCHEMIA MAY BE DUE TO

- NARROWING OF THE LUMEN
 - RUPTURE OF THE PLAQUE
 - EMBOLIZATION
- 

BUERGERS DISEASE



CLINICAL MANIFESTATIONS

- PAIN (**INTERMITTENT CLAUDICATION**)
- “CLAUDIO”= I LIMP
CRAMP LIKE PAIN
BROUGHT ON BY EXERCISE
NOT PRESENT ON WALKING THE FIRST STEP RELIEVED BY STANDING STILL
SLIGHT VARIATION EACH DAY
- DUE TO ACCUMULATION OF **SUBSTANCE P**
- GROUP OF MUSCLES DISTAL TO THE SITE OF OBSTRUCTION

**CLAUDICATION DISTANCE :
DISTANCE AT WHICH THE PAIN FIRST APPEARS**



Fontaine

Stage	Clinical
I	Asymptomatic
IIa	Mild claudication
IIb	Moderate to severe claudication
III	Ischemic rest pain
IV	Ulceration or gangrene

Aorto-iliac obstruction	<ul style="list-style-type: none">• Claudication in both buttocks, thighs and calf• Absent femoral, popliteal and DP pulses• Impotence (Leriche's syndrome)
Iliac obstruction	<ul style="list-style-type: none">• Unilateral claudication in thigh and calf• Unilateral absence of femoral and distal pulses
Femoropopliteal obstruction	<ul style="list-style-type: none">• Unilateral claudication in the calf• Absent distal pulses
Distal obstruction	<ul style="list-style-type: none">• Ankle pulses absent• Claudication in calf and foot

DEFERENTIAL DIAGNOSIS -**NEUROGENIC PAIN**

- **NERVE ROOT COMPRESSION** (EG: HERNIATED DISC)

- SHARP LACINATING PAIN

- HISTORY OF BACK PROBLEMS

- **SPINAL STENOSIS**

HISTORY OF BACK PROBLEMS

MOTOR WEAKNESS MORE PROMINENT ONSET BY STANDING ALSO

RELIVED BY CHANGE IN POSITION

MUSCULOSKELETAL PAIN

- **ARTHRITIC**/ INFLAMMATORY ACHING PAIN
- VARIABLE PAIN
- NOT RELIEVED AS QUICKLY
- **BAKER'S CYST SWELLING**, TENDERNESS REST PAIN
SUBSIDES SLOWLY
NOT INTERMITTENT

VENOUS CLAUDICATION

- BURSTING TYPE OF PAIN RELIEF SPEEDED BY ELEVATION
- H/O DVT SIGNS OF VENOUS CONGESTION
- BURSTING PAIN
- HEAVILY MUSCLED LEGS RELIEF SPEEDED BY ELEVATION

CRITICAL LIMB ISCHAMIA (CLI)


- PERSISTENTLY RECURRING ISCHEMIC REST PAIN
- REQUIRING REGULAR, ADEQUATE ANALGESIA
- FOR >2 WEEKS OR
- ULCERATION OR GANGRENE OF FOOT OR TOES
- ANKLE PRESSURE <50MMHG OR TOE PRESSURE <30MMHG

CRITICAL LIMB ISCHEMIA REST PAIN





PRIMARY TREATMENT

- MEDICAL THERAPY- 25%
 - SURGICAL REVASCULARIZATION- 50%
 - PRIMARY AMPUTATION- 25%
- 

ONE YEAR LATER

- DEAD- 25%
- LIVE-AMPUTATED- 30%
- CONTINUING CLI- 20%
- RESOLVED- 25%



CLINICAL ASSESSMENT

- HISTORY
- EXAMINATION



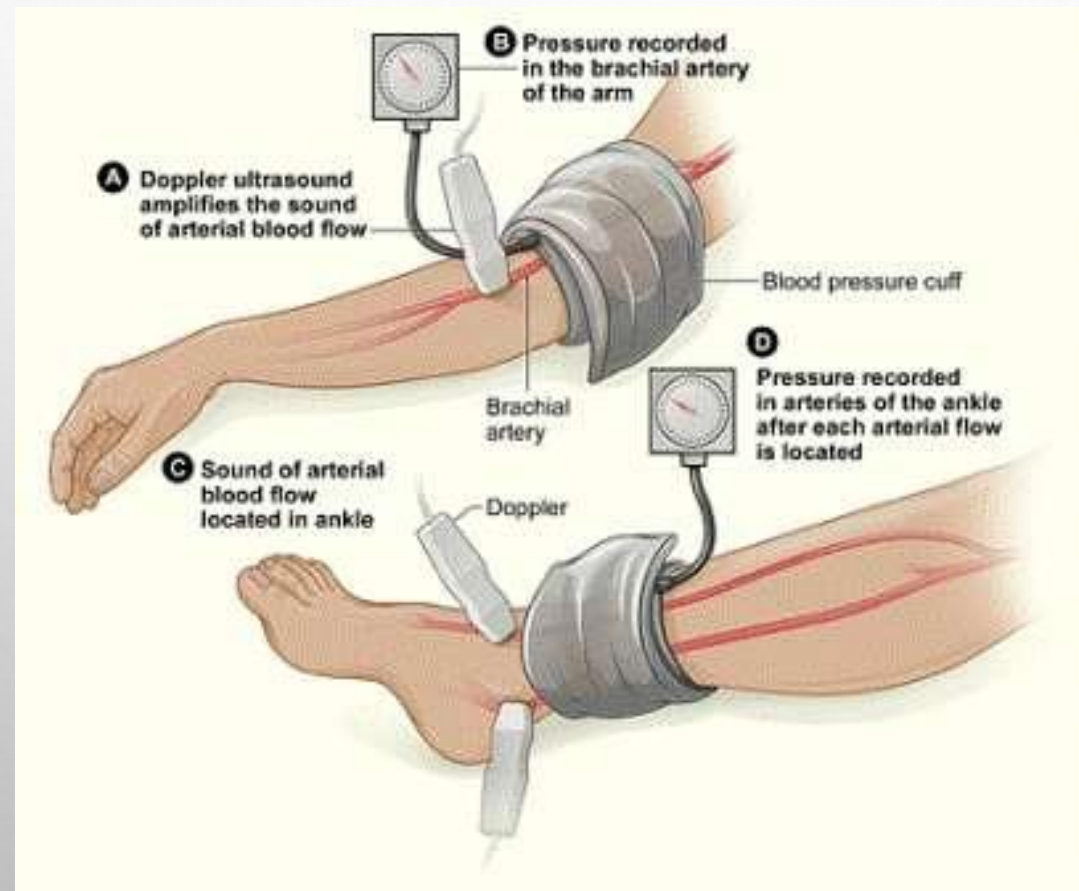


DRY VS WET GANGRENE

Dry gangrene	Wet gangrene
Dry, shriveled, mummified	Oedematous, putrified and discoloured
Occurs due to slow and gradual loss of blood supply	Occurs due to sudden loss of blood supply
Clear line of demarcation is present	Vague/ No line of demarcation
No proximal extension	Proximal extension
Limited amputation	High amputation



INVESTIGATIONS-ABPI

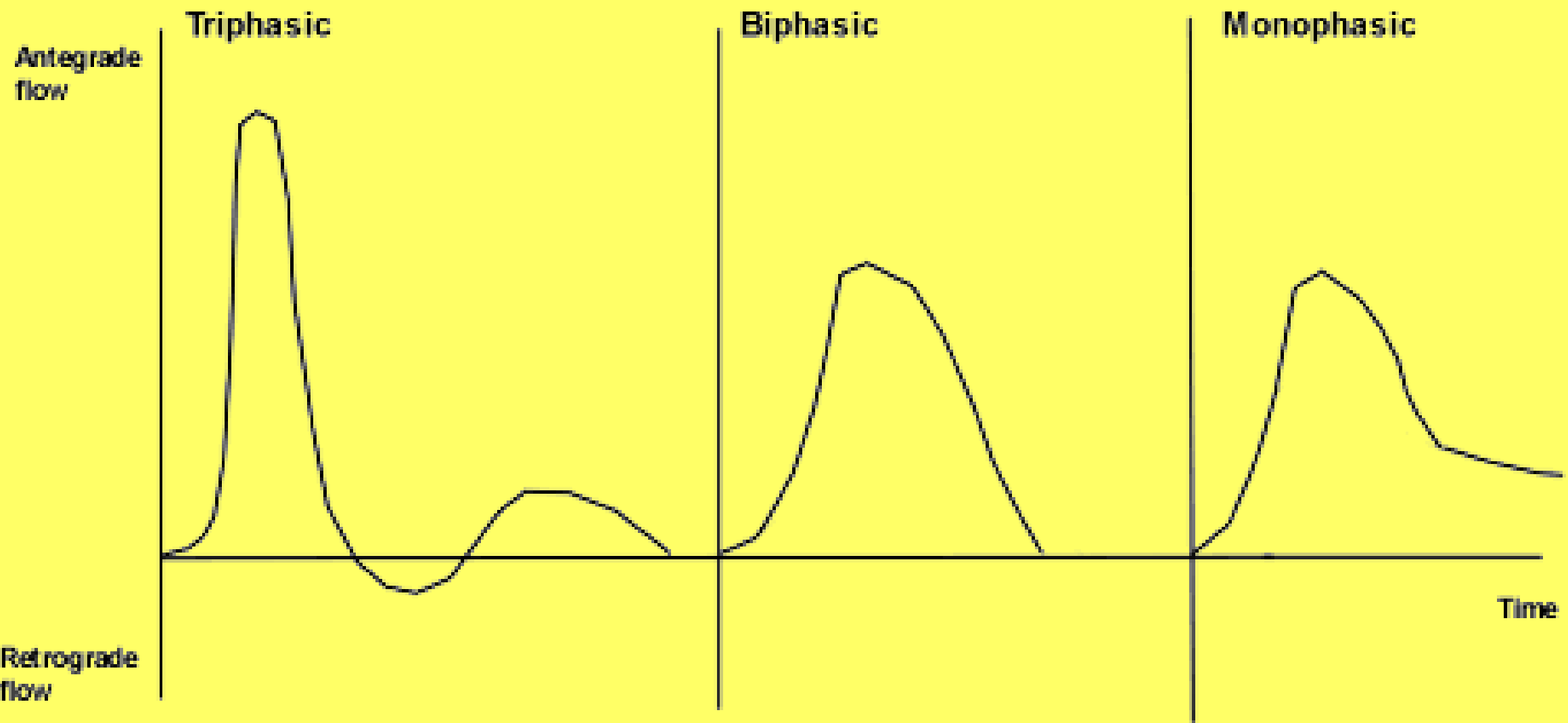


ABPI

- NORMAL- 1-1.2 ABNORMAL >1.4
- MARGINAL 0.9-1
- CLAUDICATION- 0.9-0.4
- CLI- <0.4

DOPPLER





DUPLEX SCAN



ANGIOGRAM

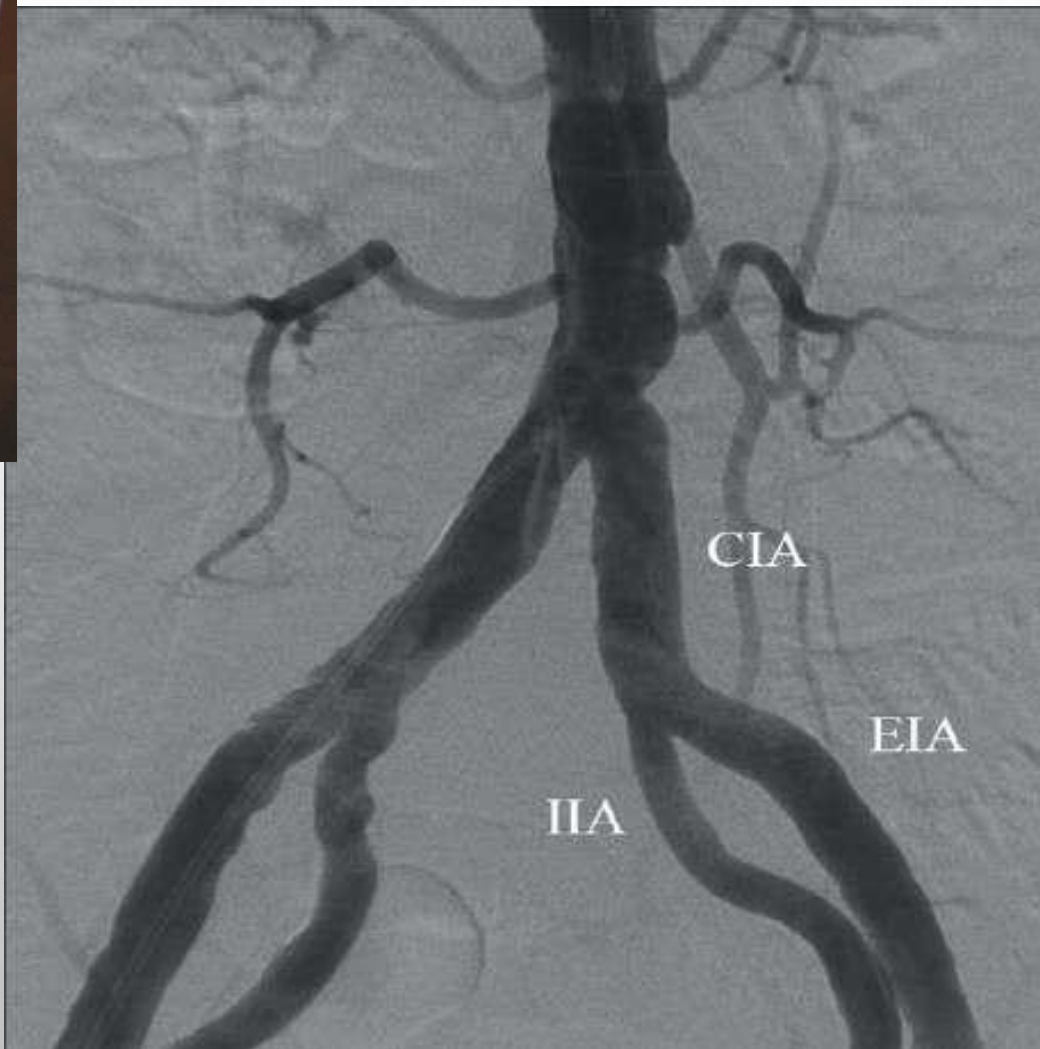
- DSA
- CTA
- MRA

CTA/MRA





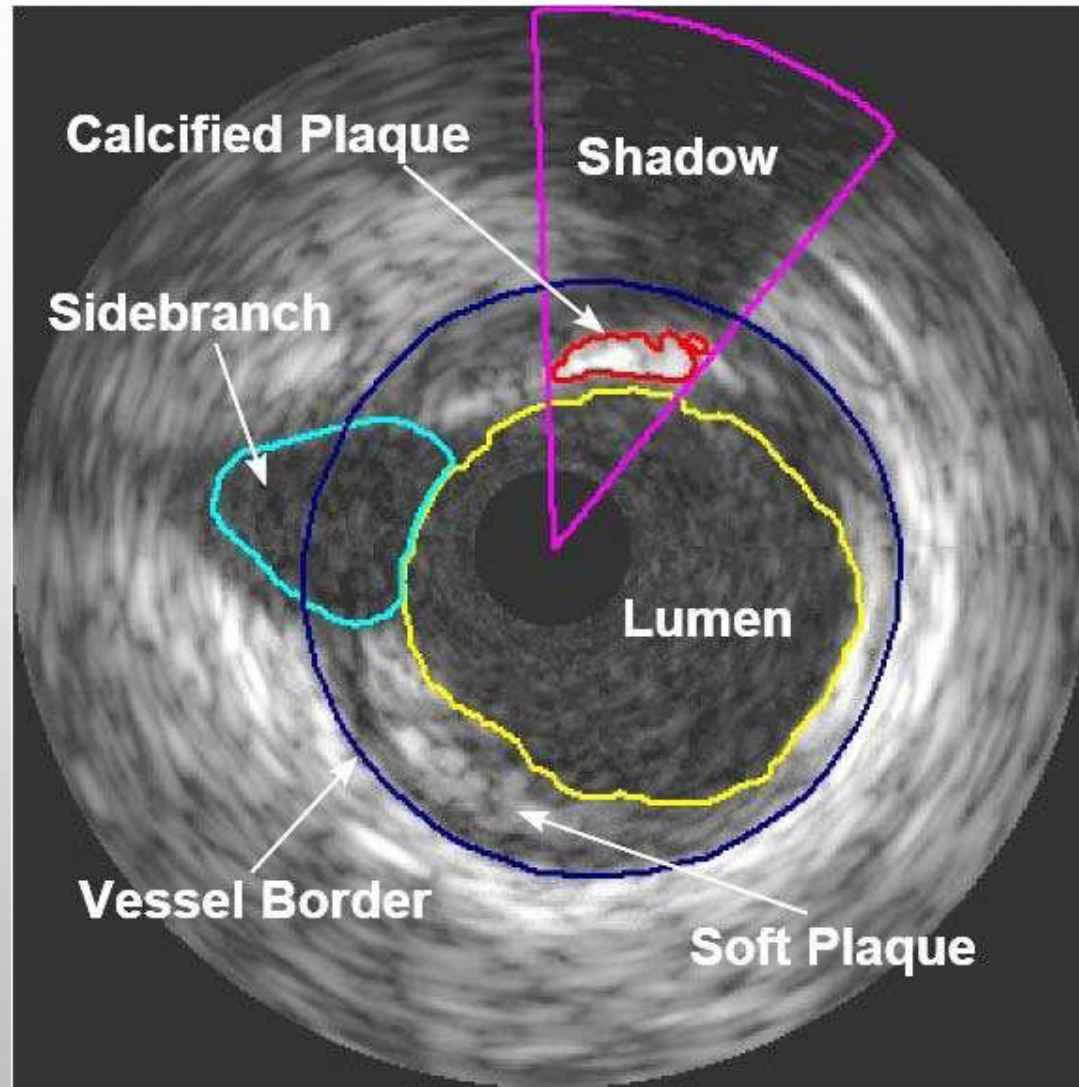
DSA



MRA



INTRAVASCULAR ULTRASOUND- IVUS






OTHER INVESTIGATIONS

- ECG
 - ECHO
 - RENAL FUNCTIONS
 - LIVER FUNCTIONS
 - BLOOD COUNTS
- 



CONSERVATIVE MANAGEMENT

- STOP SMOKING
 - KEEP WALKING
 - REDUCE WEIGHT (OBESE INDIVIDUALS)
 - EXERCISE
 - DIABETES AND HYPERTENSION
 - CARE OF FEET
- 

DRUGS


- ANALGESICS
- VASODIALTORS
 - **CILOSTAZOL** (PHOSPHODIESTERASE INHIBITORS)
 - **PENTOXYPHYLLINE** (PHOSPHODIESTERASE INHIBITORS)
- PLATELET AGGREGATION INHIBITORS
 - **ASPIRIN/ CLOPIDOGREL**
 - **PROSTACYCLINE**

SYMPATHECTOMY

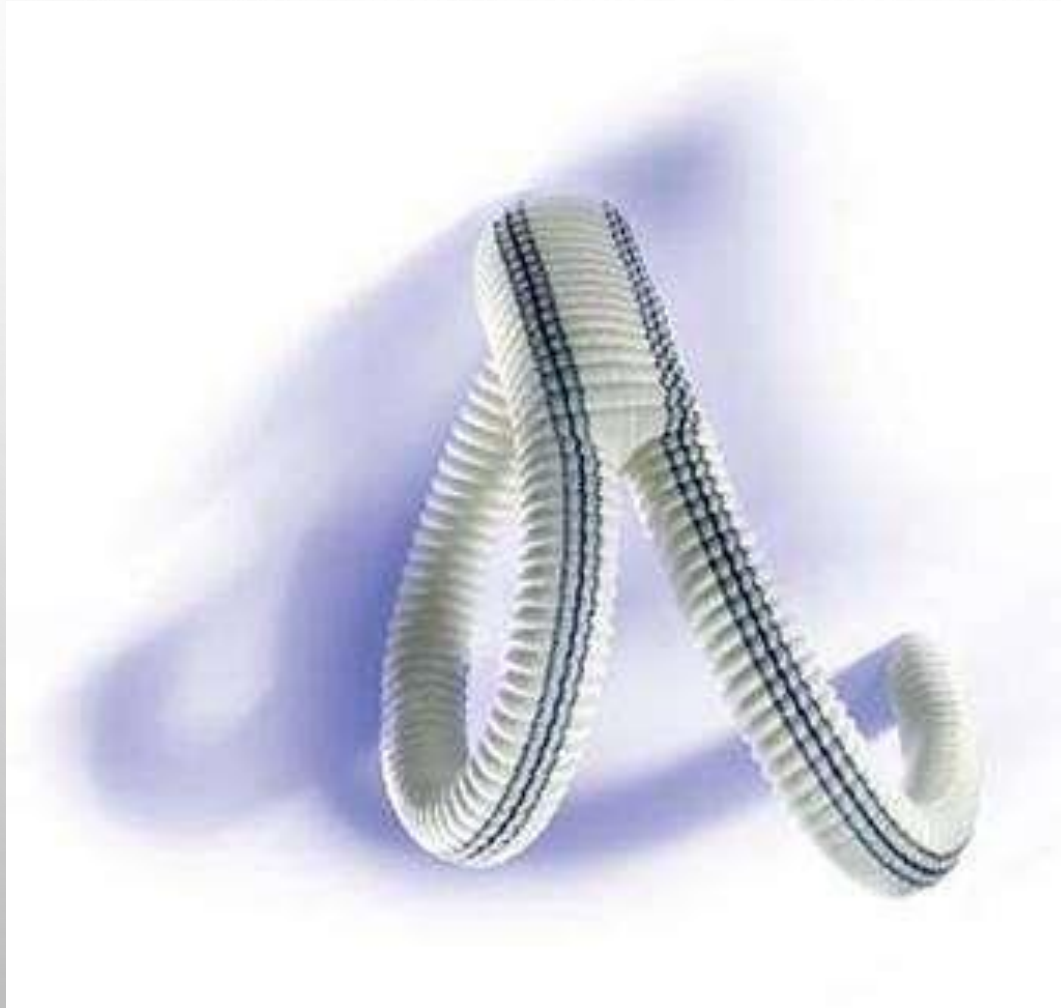
- CHEMICAL
- MECHANICAL/SURGICAL

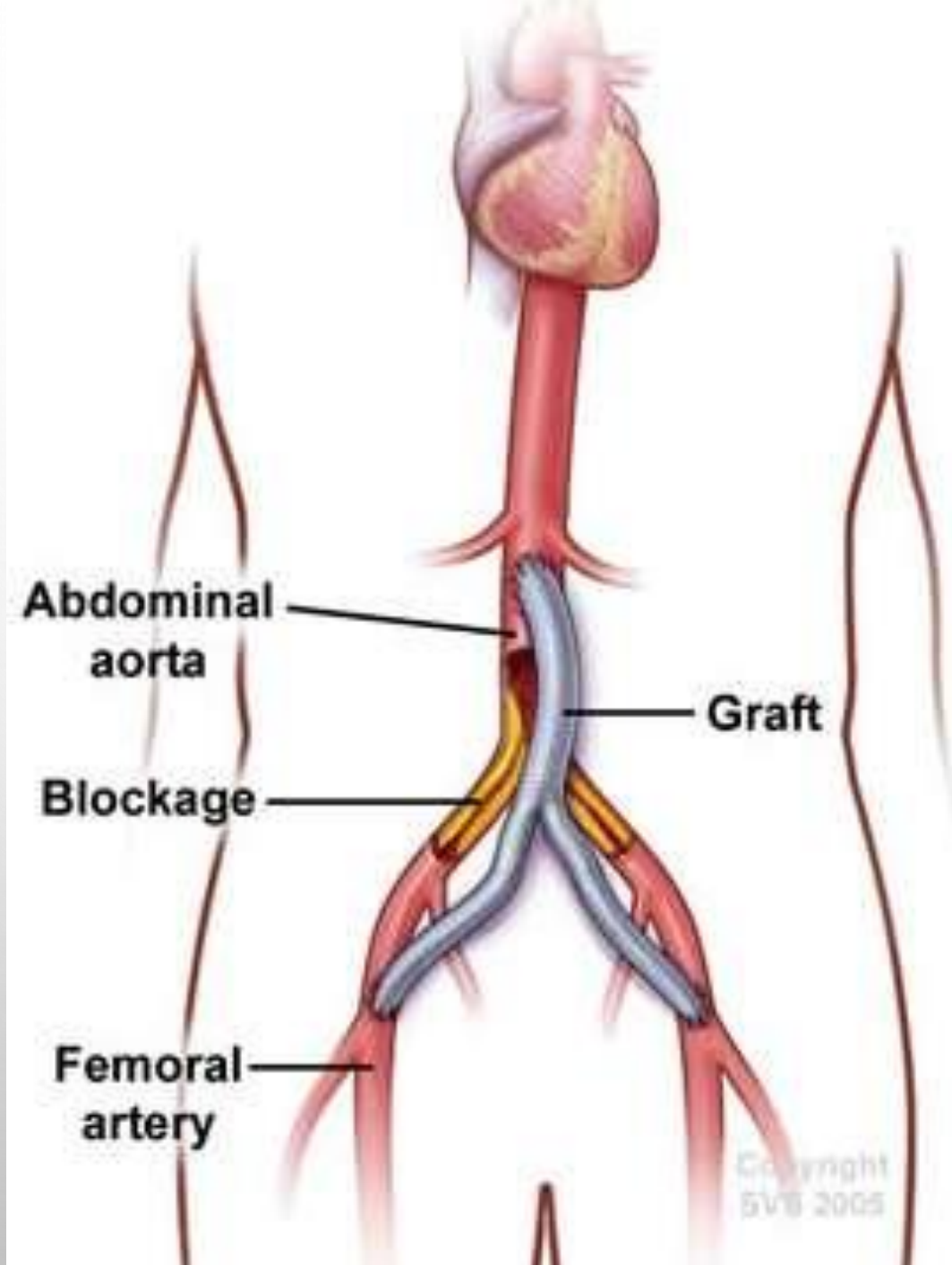


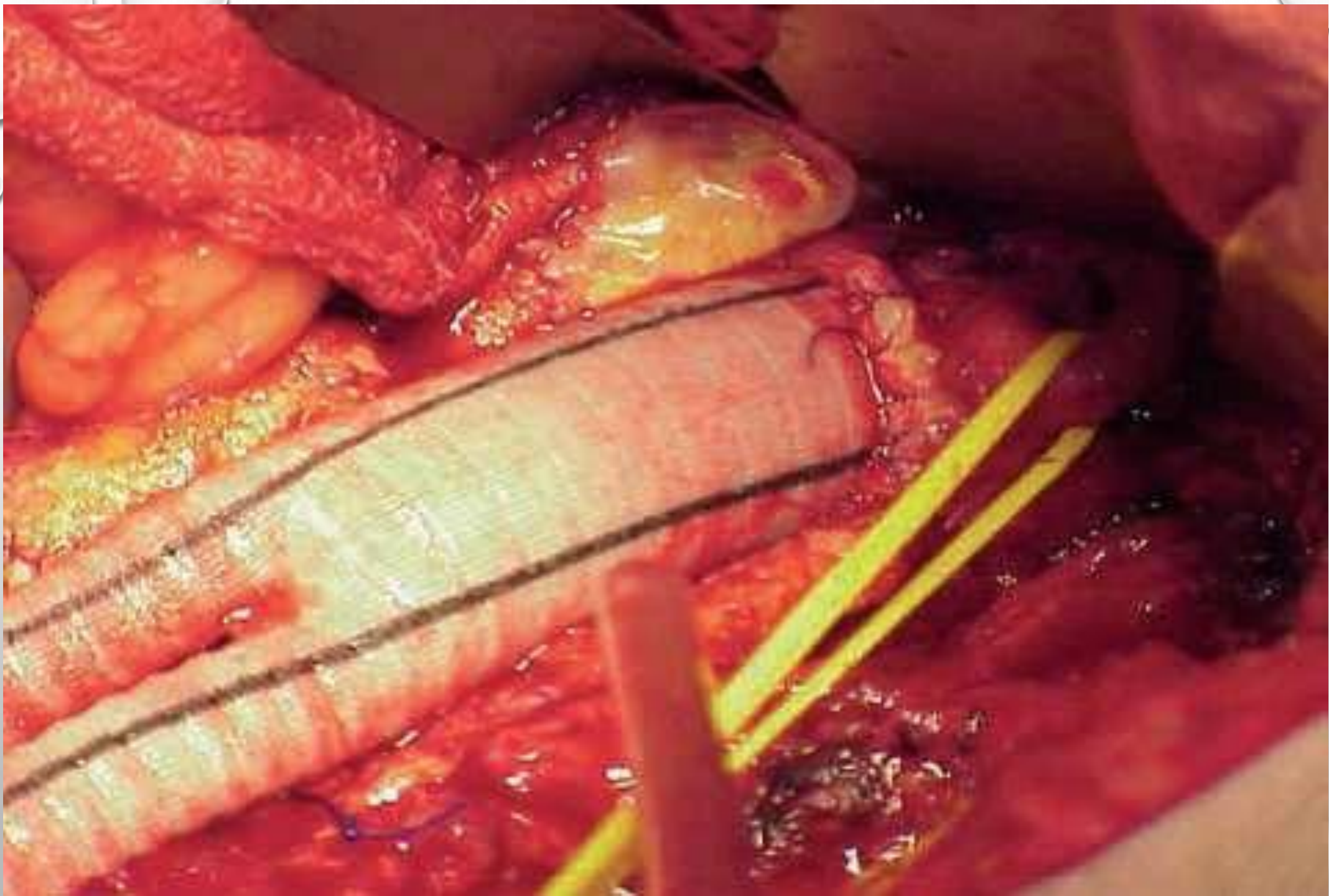
REVASCULARIZATION

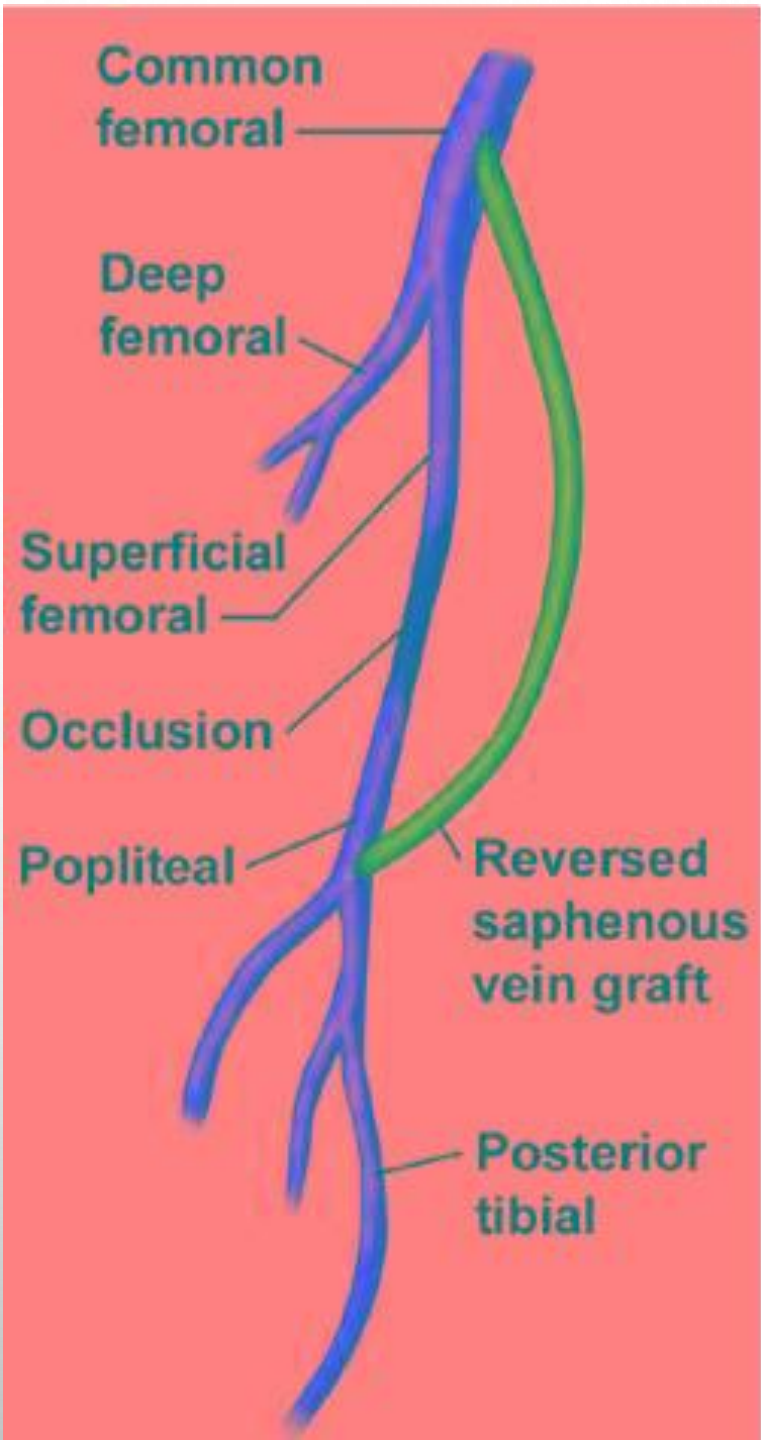
- OPEN SURGERY- BYPASS
 - ENDO-VASCULAR
 - AMPUTATION
- 

OPEN SURGICAL MANAGEMENT

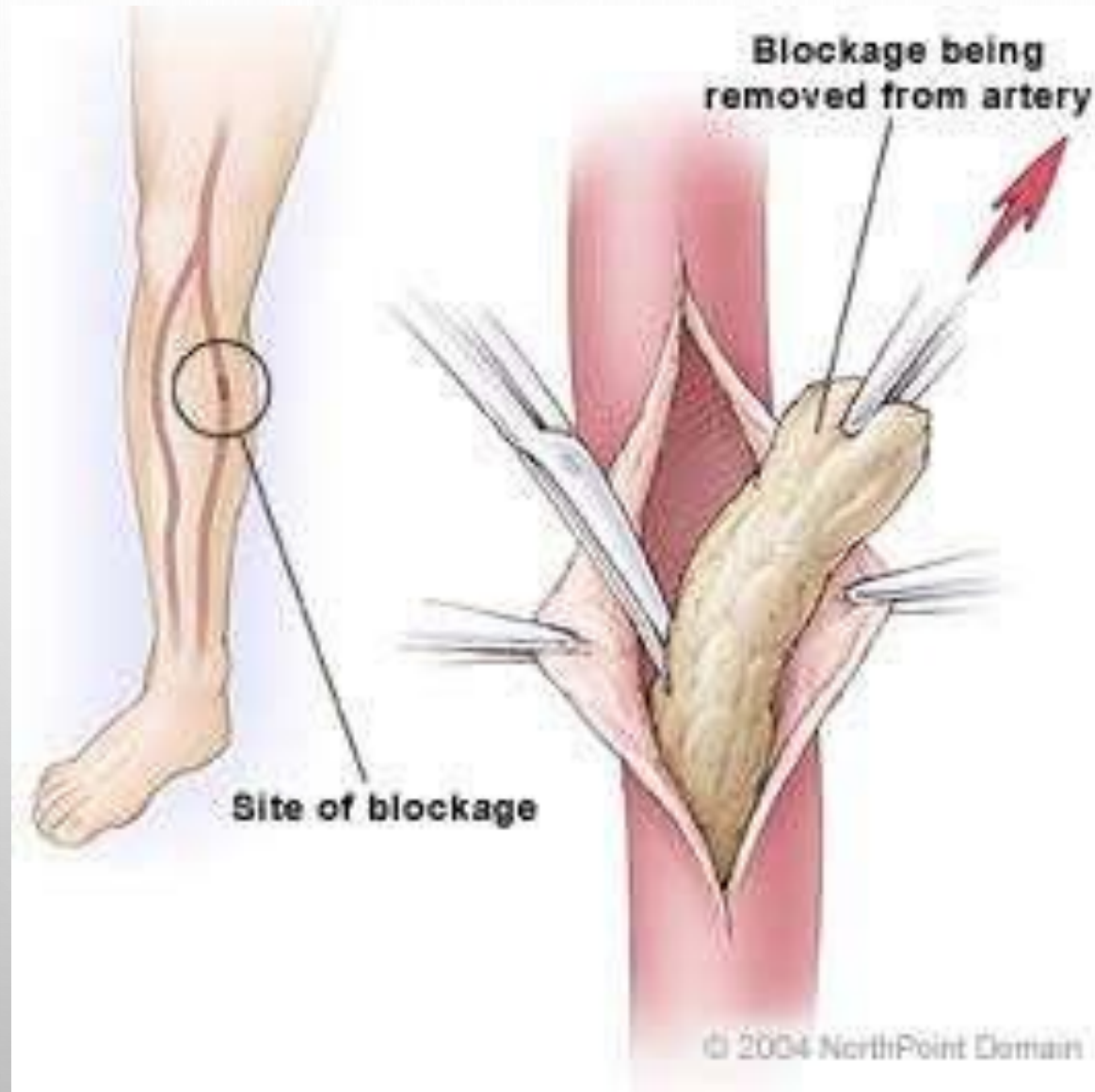


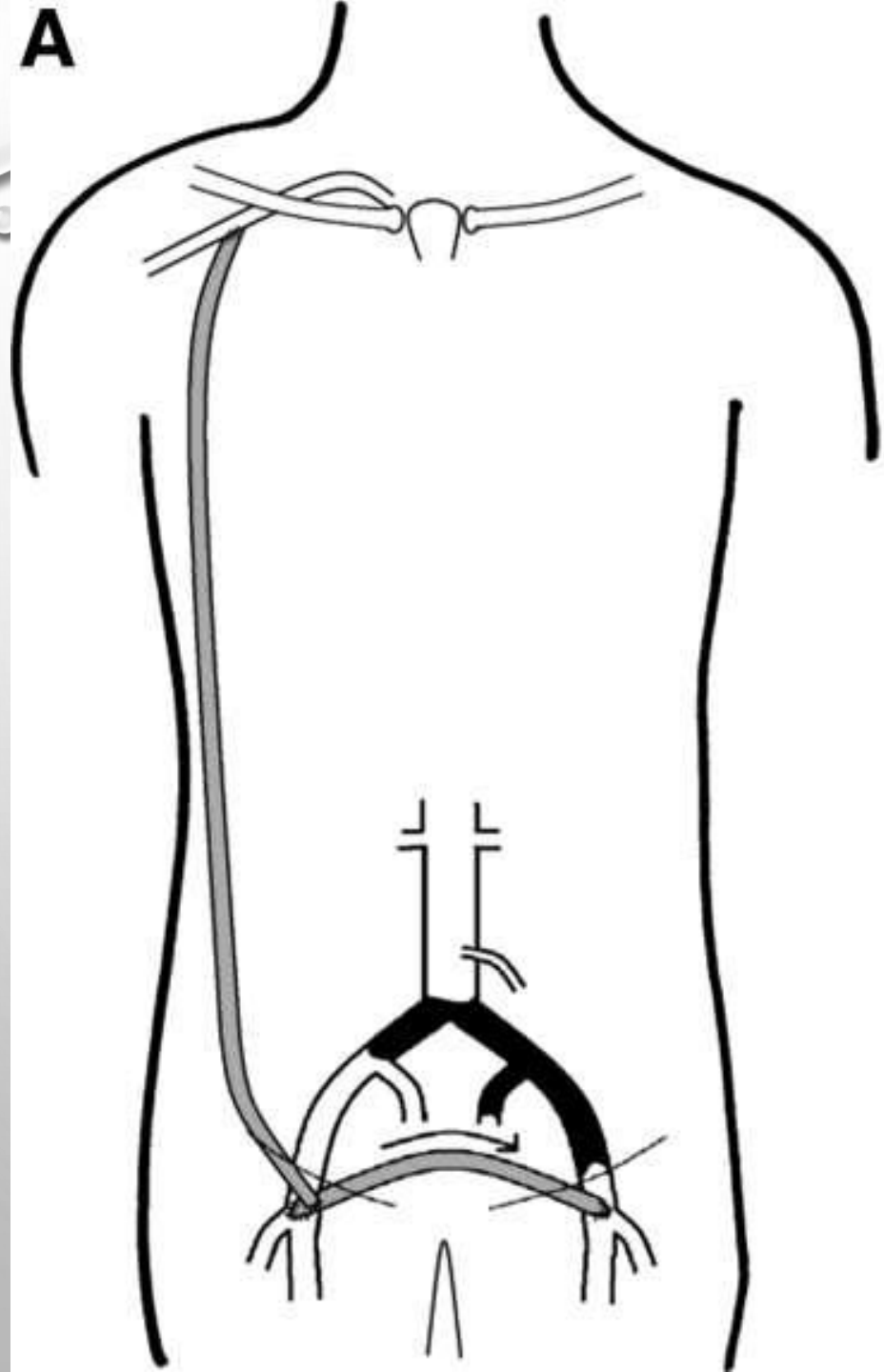
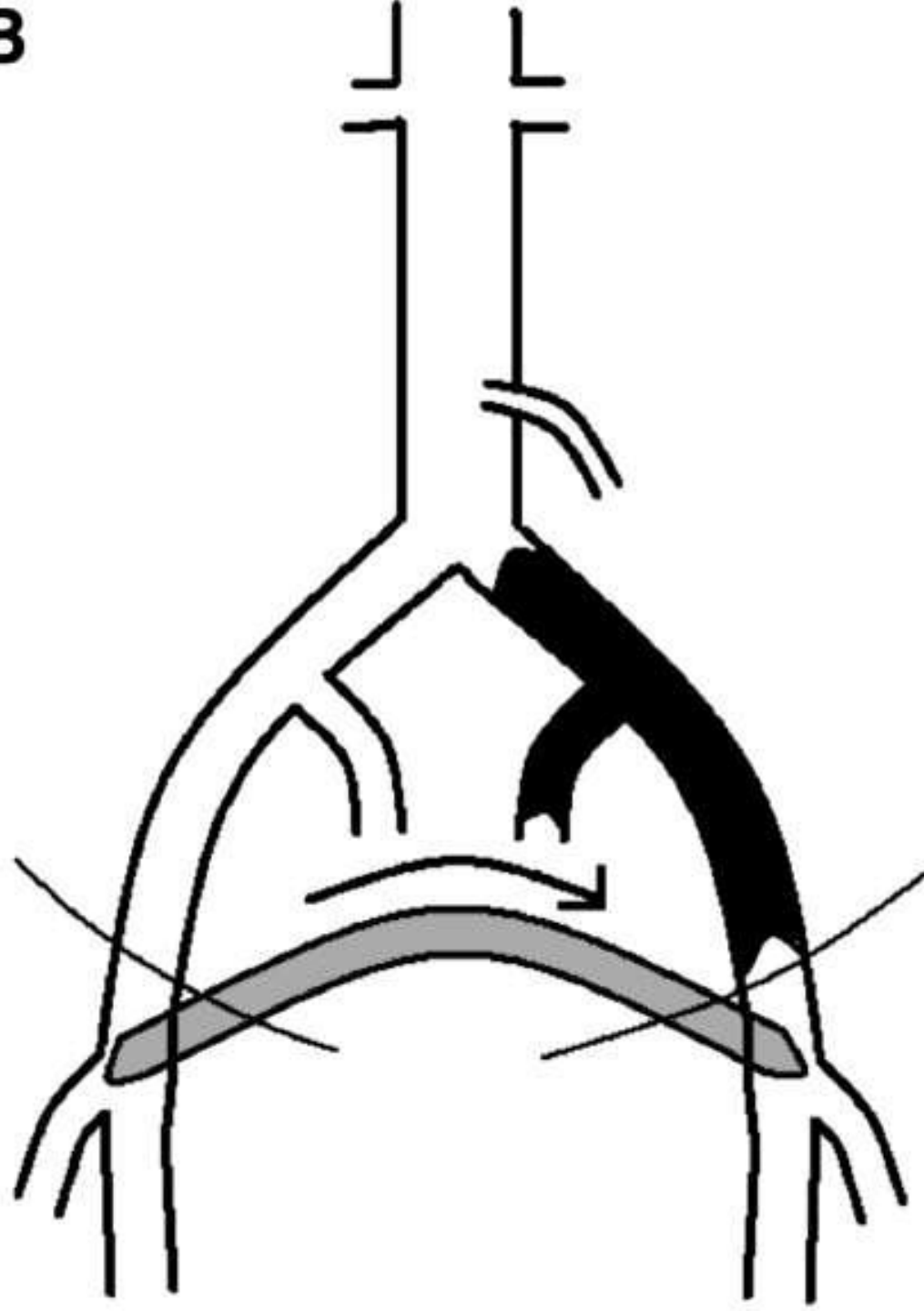




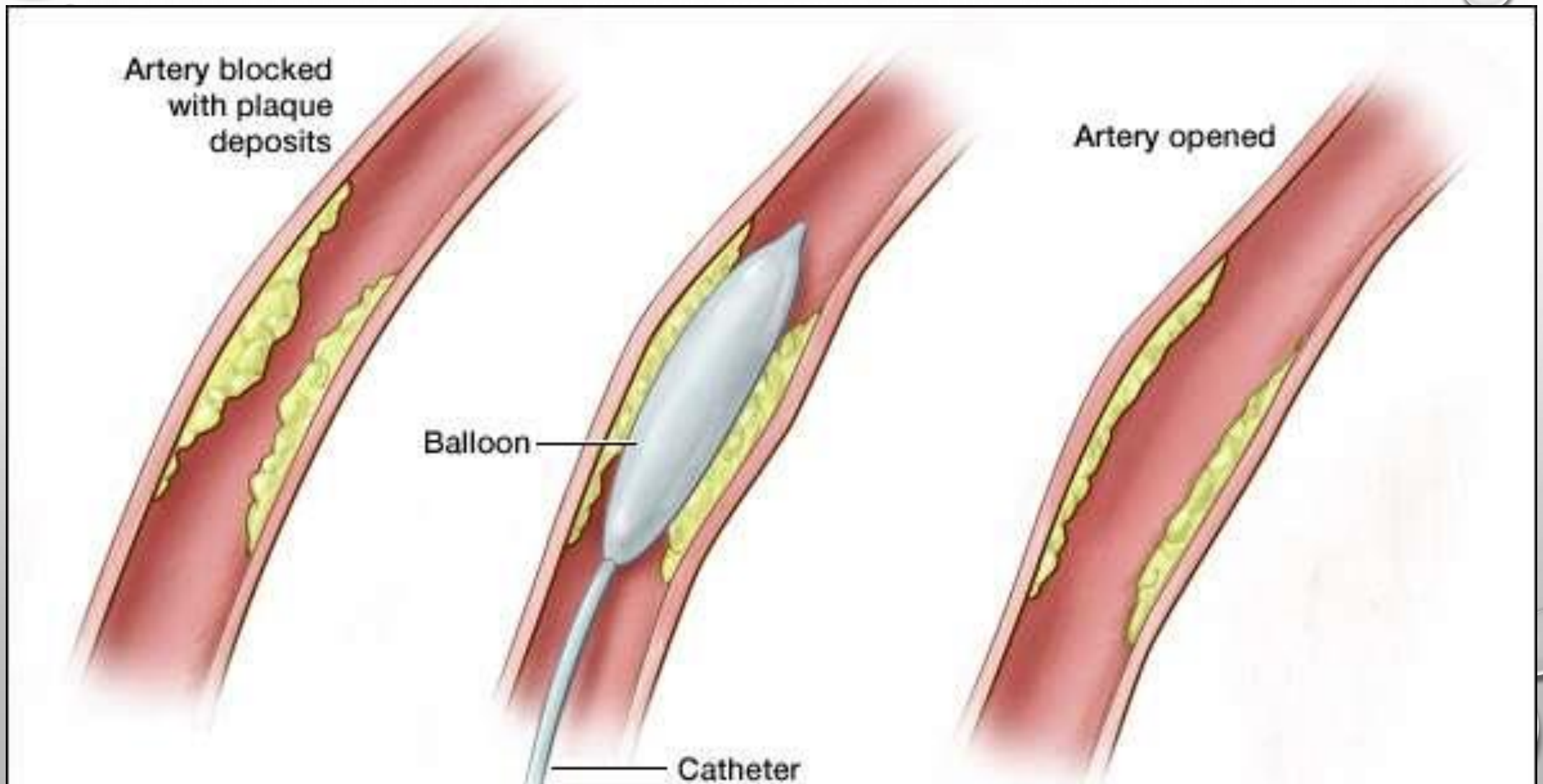


ENDARTERECTOMY

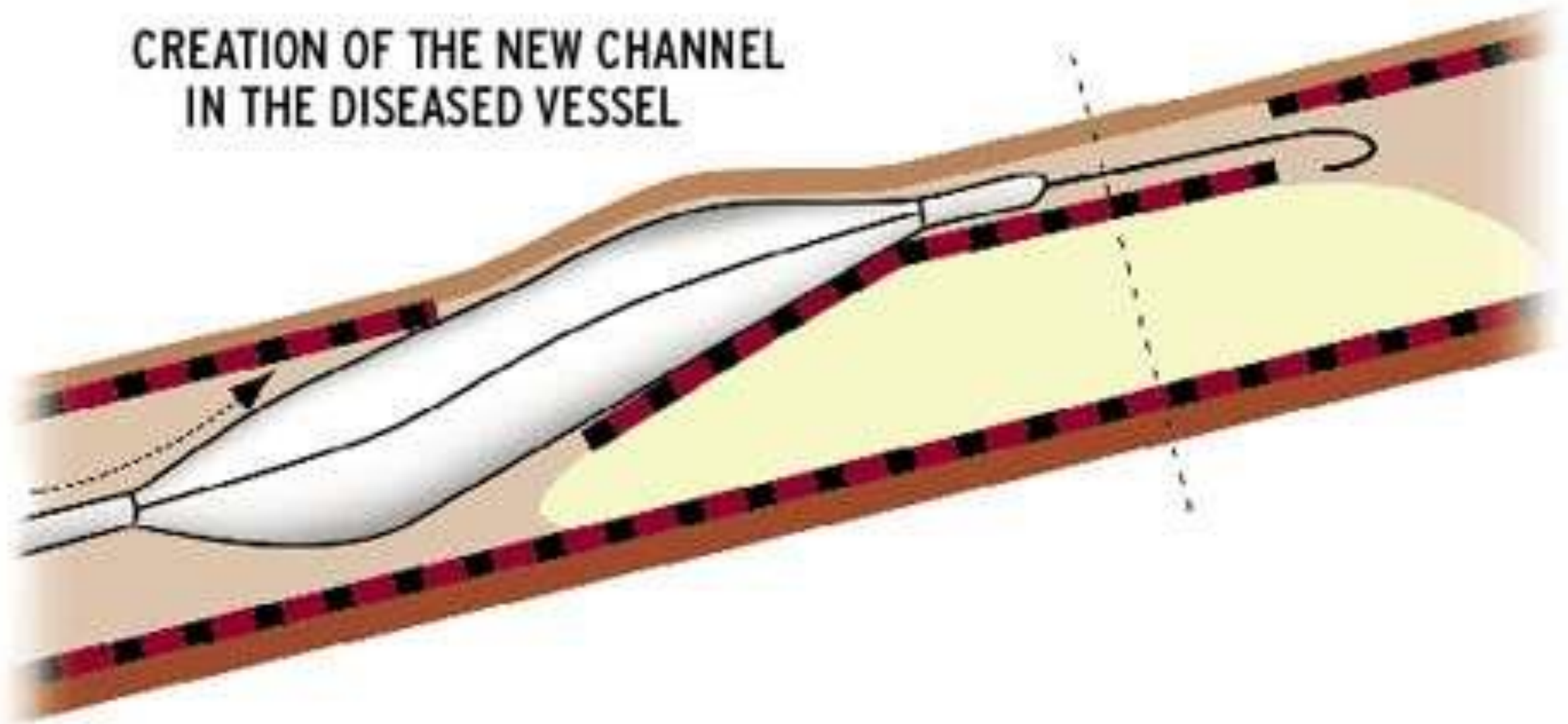


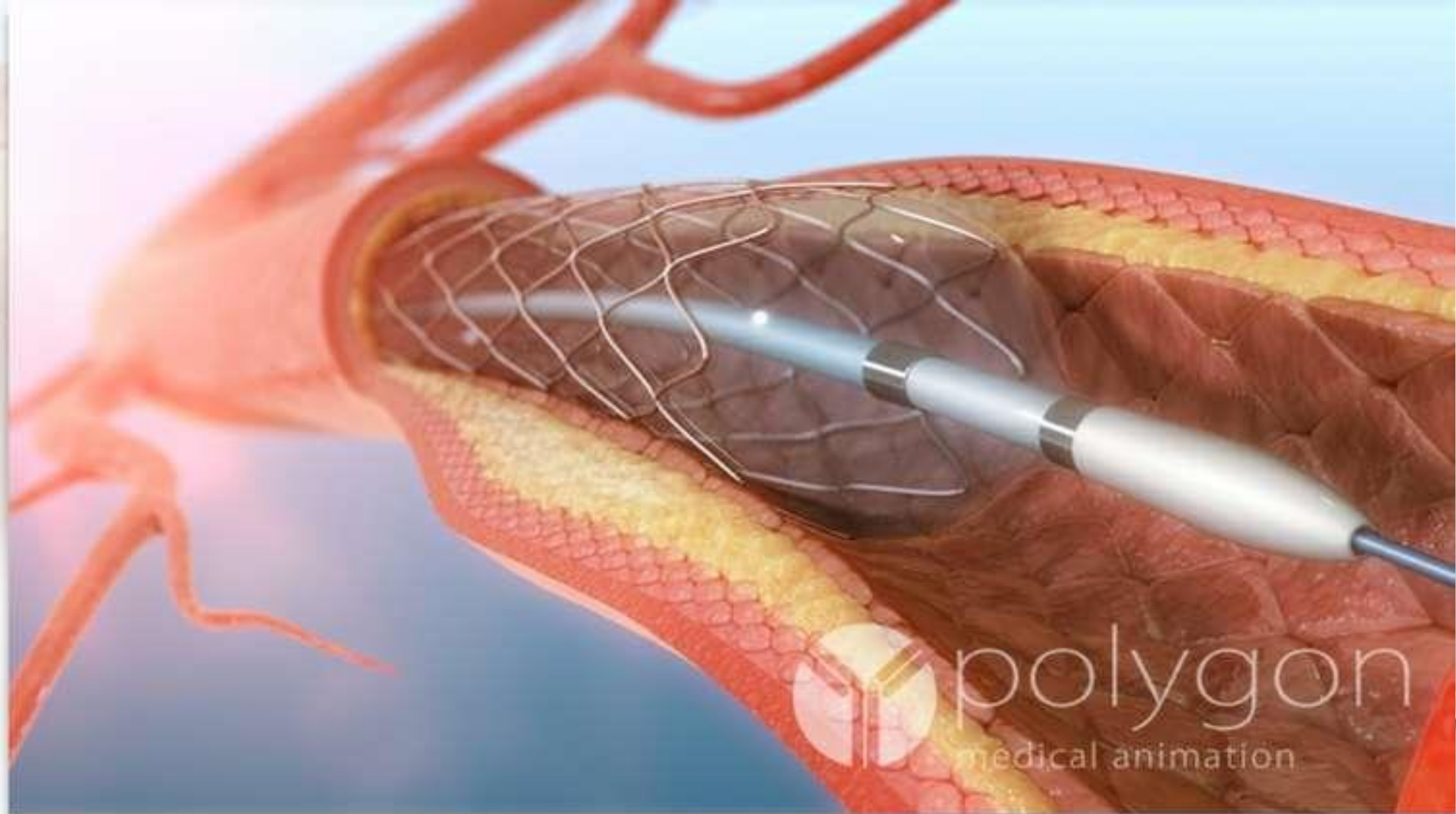
A**B**

BALLOON ANGIOPLASTY



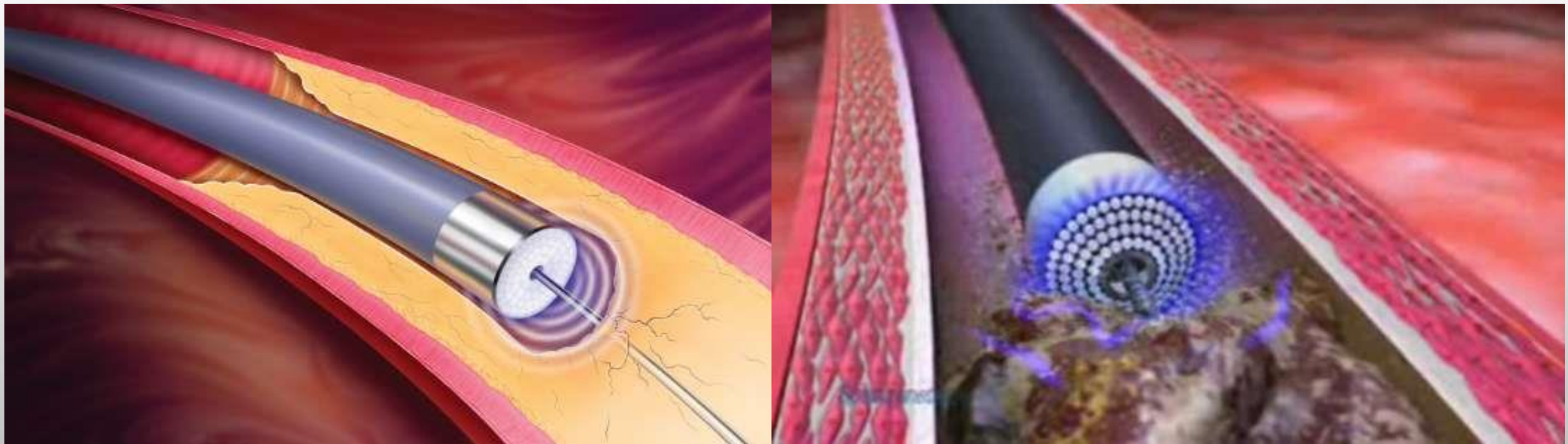
**CREATION OF THE NEW CHANNEL
IN THE DISEASED VESSEL**





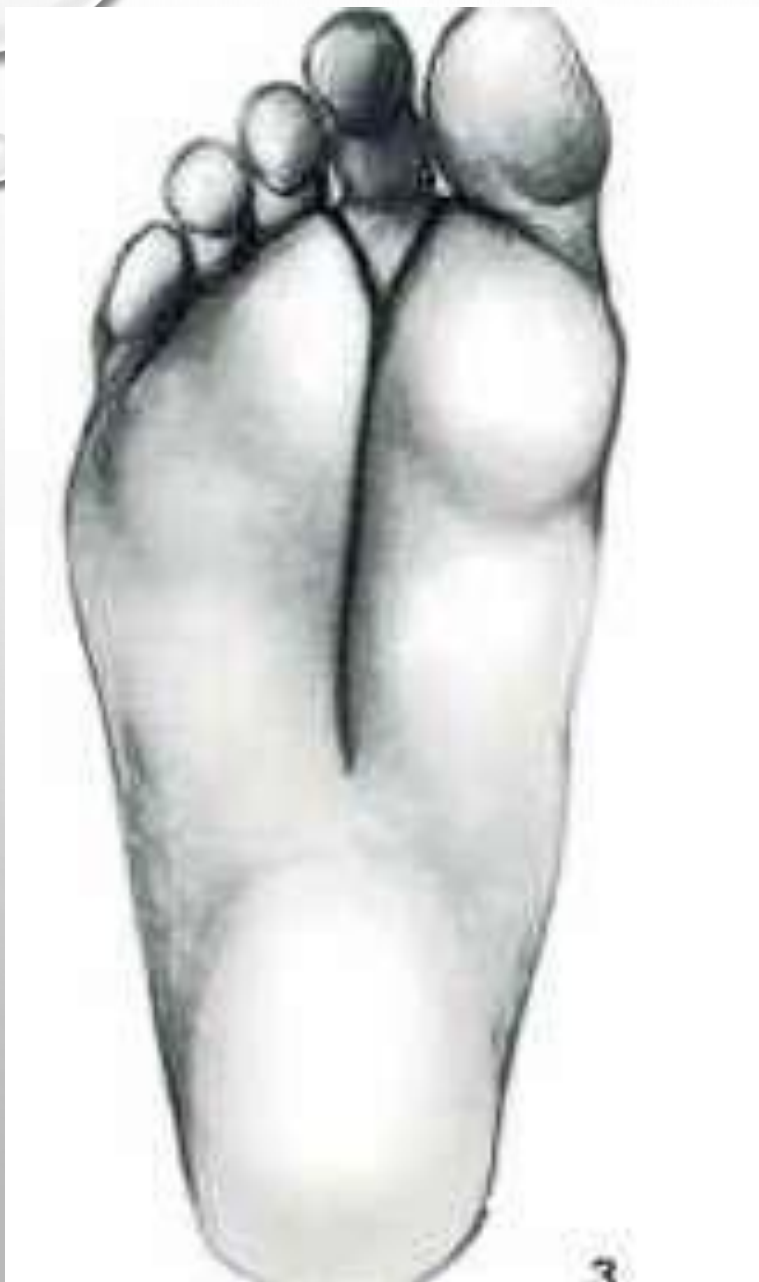
polygon
medical animation

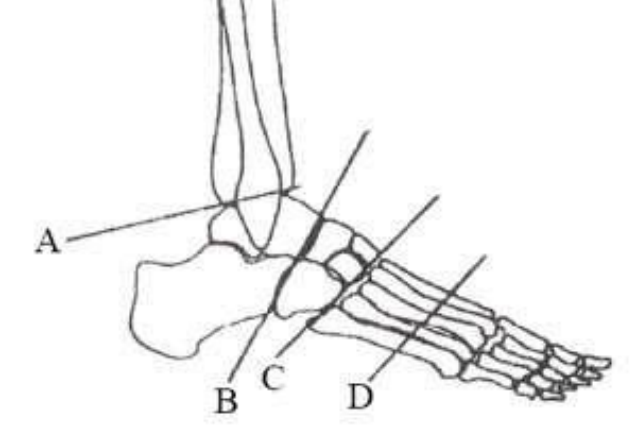
ATHRECTOMY



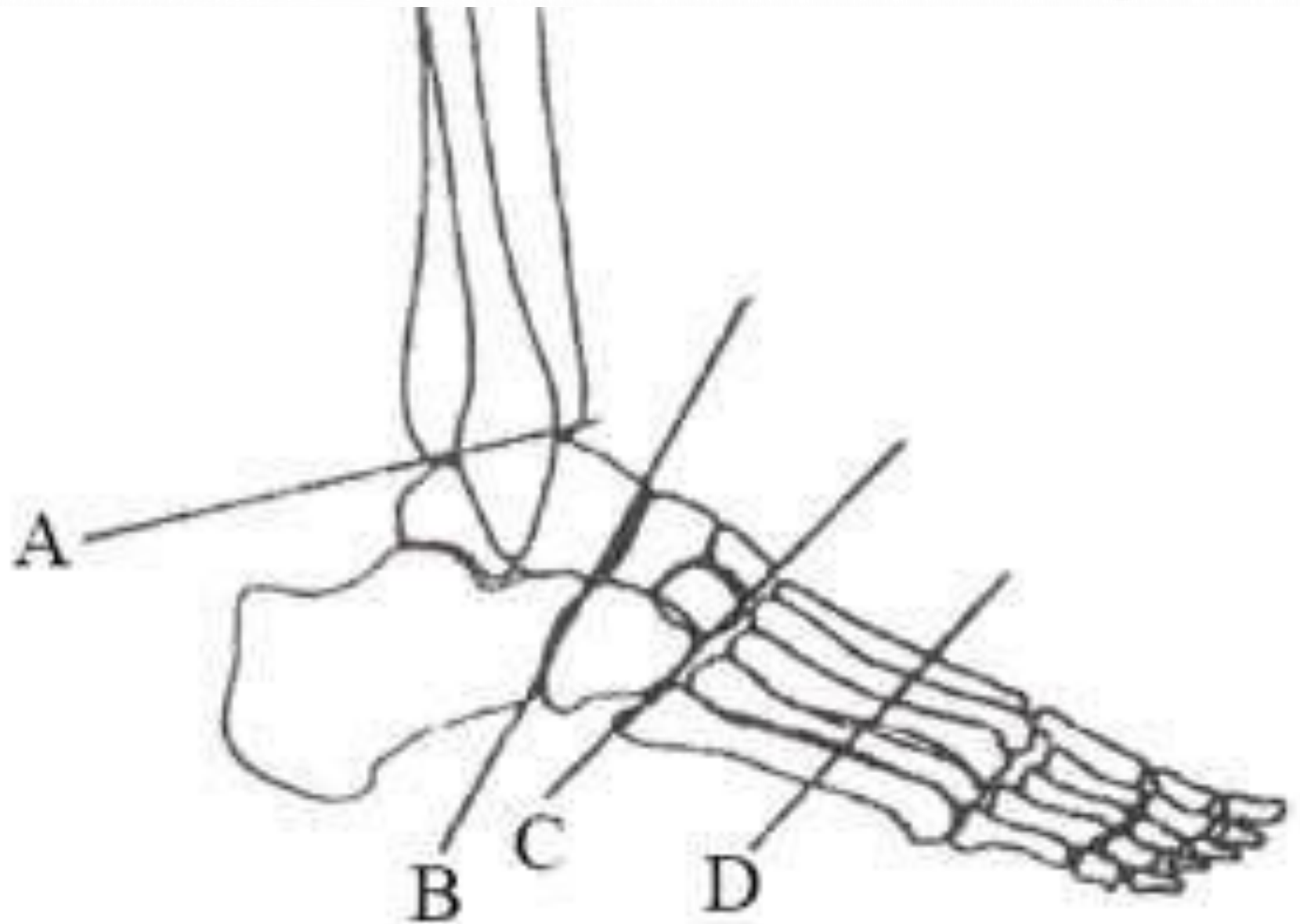
AMPUTATION

- BKA
- AKA
- RAY AMPUTATION
- TRANSMETATARSAL AMPUTATION
- SYME'S
- CHOPART'S
- LISFRANC'S





- A. SYME'S
- B. CHOPART'S
- C. LISFRANC'S
- D. TRANSMETATARSAL



The image features a light gray background with a subtle radial gradient. In the top-left and bottom-right corners, there are clusters of realistic water droplets of various sizes, some with highlights and shadows, giving them a three-dimensional appearance. In the center of the image, the words "THANK YOU" are written in a large, bold, black, sans-serif font.

THANK YOU