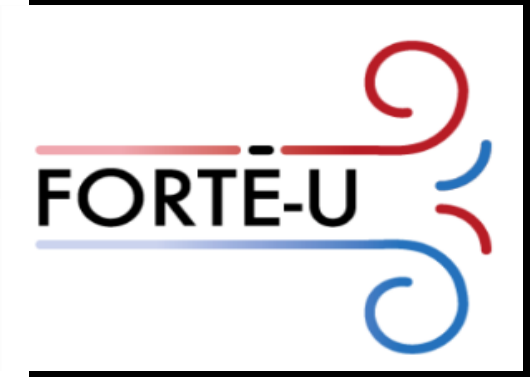


Forum pour la Recherche Thrombo-Embolique aux Urgences

ACUTE LIMB ISCHEMIA

Maxime Elens

Definition

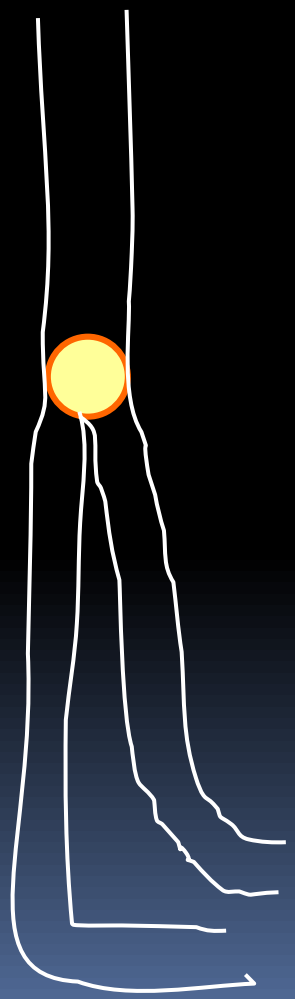
- **Sudden** decrease of arterial limb perfusion causing threat to limb viability

Aetiology

- Acute arterial embolism of a relatively healthy arterial tree
- Acute arterial thrombosis of a previously diseased arterial tree/stent/bypass
- Acute traumatic ischemia (puncture, canula, knee luxation,…)
- Phlegmasia Alba (DVT)

Physiopathology

Acute Embolic Ischemia



An embolus suddenly occludes a relatively healthy arterial tree

It usually arrest at arterial bifurcation

Aortic bifurcation

Iliac bifurcation

Femoral bifurcation

Popliteal trifurcation

Acute Thrombotic Ischemia

<u>Atherosclerosis</u> causes progressive narrowing of the arterial tree

Stimulates development of collaterals

Low flow/rough surface/plaque disruption will favor acute thrombosis

It is important to differentiate embolic from thrombotic ischemia

Because the managment is different

Anamnese

- Pain!!
- « I don’t feel my leg anymore »
- « My leg is sleeping »

- Clear timing of the onset of symptoms?
  Hours

Clinical Features Suggestive of acute Embolism

- Sudden onset of symptoms
  - Absence of previous claudication
  - Normal pulse in the other limb
  - Known embolic source (AF)

Clinical Features Suggestive of acute Thrombosis

- More progressif onset of symptoms
  - previous claudication
  - History of vascular interventions
    - Bypass, stent
  - Abnormal pulse in the other limb

Clinical Evaluation of Acute Ischemia *(Clinical Picture)*

Signs of acute ischemia

5 Ps

Pain: *symptom*

Pain: Diffuse foot & leg

Pain may diminish:

if collaterals open improving circulation

if ischemia progresses causing ischemic sensory loss

Clinical Evaluation of Acute Ischemia *(Clinical Picture)*

Signs of acute ischemia

5 Ps

Pain: *symptom*

+

Pale

Pulseless

Paresthesia

Paralysis

mottling & cyanosis

Inspection

COLOR:

Early: pale

Later: cyanosed → mottling

An area of Pallor cyanosis surrounded by mottling

Empty veins: *compare the Rt. (ischemic) & Lt. (normal)*

Clinical Evaluation of Acute Ischemia *(Clinical Picture)*

Signs of acute ischemia

5Ps

Pain: *symptom*

+

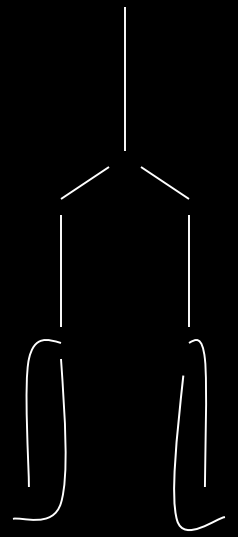
Pale

Pulseless

Paresthesia

Paralysis

Palpation



Palpate/doppler pulses (bilateral)

Temperature: the limb is cold with a level of temperature change

Slow capillary refilling of the skin after finger pressure

Clinical Evaluation of Acute Ischemia *(Clinical Picture)*

Signs of acute ischemia

5Ps

- **Pain**: *symptom*
- +
- **Pale**
- **Pulseless**
- **Paresthesia**
- **Paralysis**

Palpation

Loss of <u>sensory</u> function

Numbness will progress to anesthesia

Clinical Evaluation of Acute Ischemia *(Clinical Picture)*

Signs of acute ischemia

5Ps

Pain: *symptom*

+

Pale

Pulseless

Paresthesia

Paralysis

Palpation

Loss of <u>motor</u> function:

Indicates ***advanced*** limb threatening ischemia

Late *<u>irreversible and deep</u>* ischemia: **Muscle rigidity (ankle)**

Long delay -> complications!!!

- Renal insufficiency
- Compartiment Syndrome
- Neuro-ischemia
  - Chronic paresthesia/ paralysis FOOD DROP
  - Chronic pain
  - Chronic dyesthesia

Long delay -> complications!!!

- Renal insufficiency
- Compartiment Syndrome
- Neuro-ischemia
  - Chronic paresthesia ... is FOOD DROP
  - Chronic pain
  - Chroni... esia

Very hard to treath

Investigations of ALI

- Don’t lose time (AMI, CVA)
- Time is tissue
- FIRST: clinical picture
  - Acute limb ischemia
    - “technical investigation” (time consuming)
    - Call the vascular surgeon

Investigations of ALI

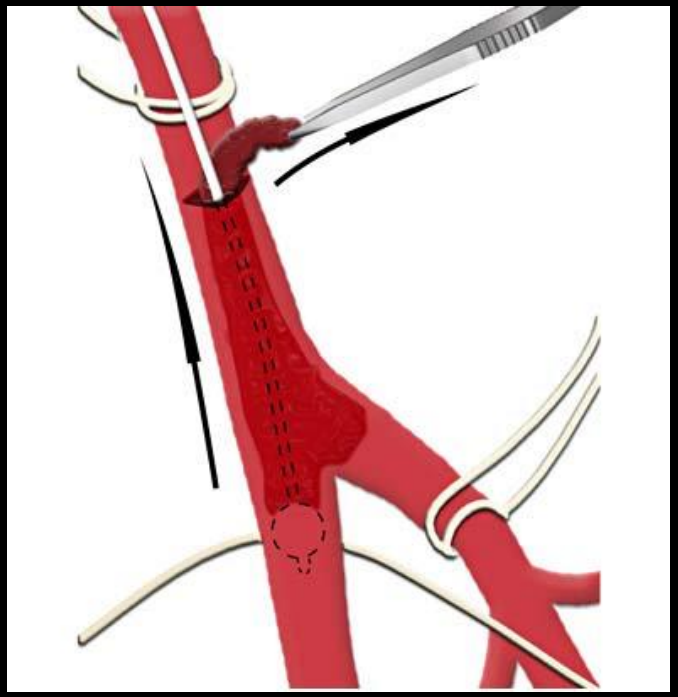
- (Echo-Doppler)
- Angio CT in order to treat
  - Localizes the obstruction
  - Visualize: width of the art. tree
    - run-off

BE FAST

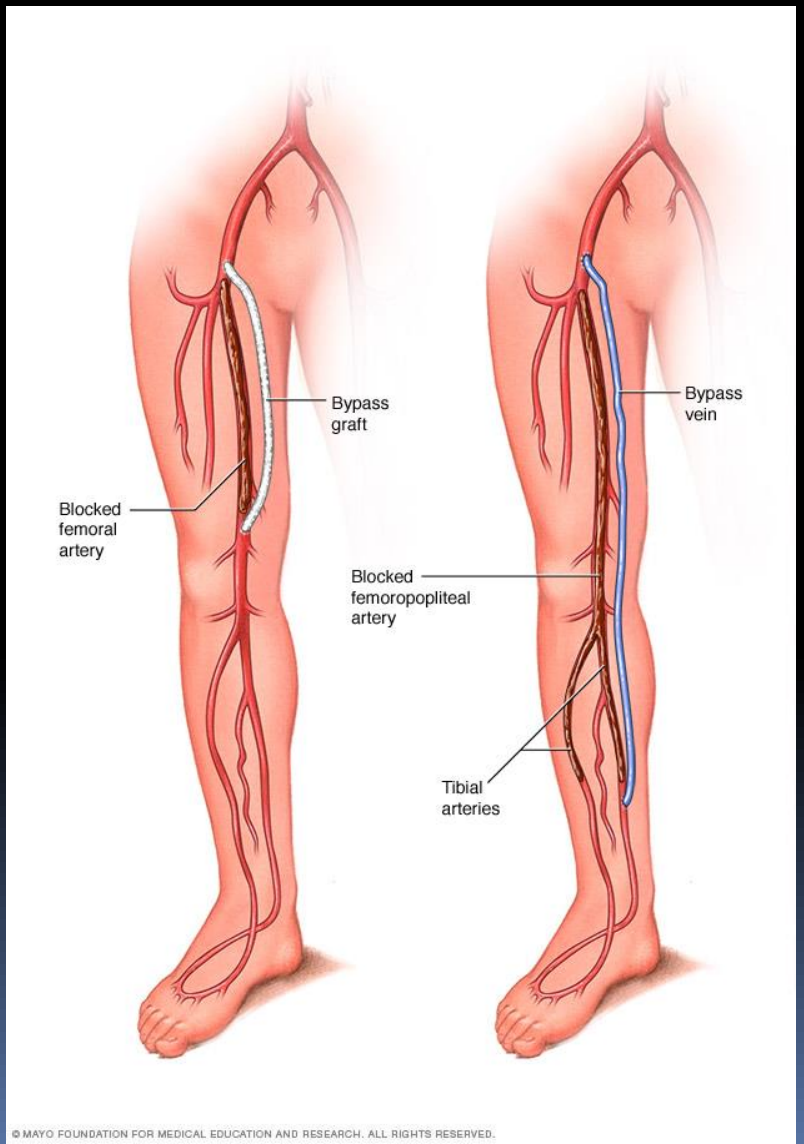
Treatment: surgery

- Revascularization
  - Catheter embolectomy (Fogarty)
  - Bypass
  - Combination with endovascular: PTA(S)
  - CAVE: releases of oxygen free radicals
    cellular injury and severe edema
    compartment syndrome
    Fasciotomy
- Amputation (if irreversible)

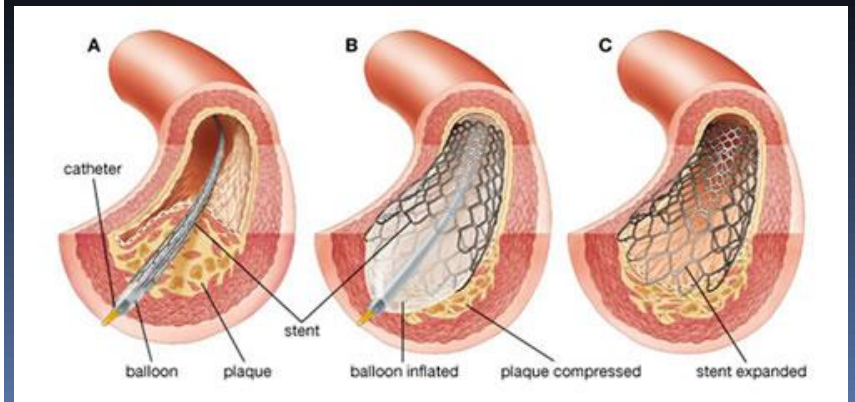
Catheter embolectomy (Fogarty)



Bypass



Combination with endovascular: PTA(S)



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Treatment in chronic setting: medical

- Anti-coagulation with LMWH: to avoid clot propagation
- Appropriate analgesia
- Simple measures to improve existing perfusion:
  - Keep the foot in anti Trend
  - Avoid pressure over the heal
  - Avoid extremes of temperature *(cold induces vasospasm, heat raises the metabolic rate)*
  - Maximum tissue oxygenation *(oxygen inhalation)*
  - Correct hypotension

Acute limb ischemia

- Clinical diagnosis
- Time lap since onset of symptoms
- Be fast