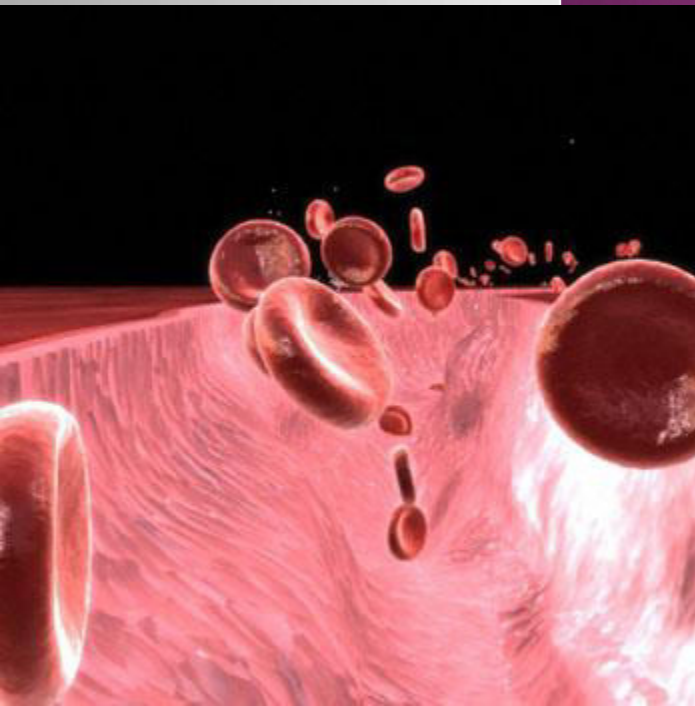




WHEN SHOULD WE CALL IN
CARDIO VASCULAR AND
THORACIC SURGEON (CVTS)
IN TRAUMA ?



C. KODHANDAPANI RAAMAANUJADAASUDU

M.S., M.Ch.,
Chief Consultant CVTS department
Narayana Medical College Hospitals
Nellore

TYPES OF VASCULAR INJURIES (TRAUMATIC)

5 types

1. Intimal injuries
2. Complete wall defects
3. Complete transections
4. Arterio venous fistula
5. Spasm

Types

Complete Occlusive

Transection

Thrombosis

Embolism

Reversible spasm

Non-occlusive

Lacerations

Intimal flaps

Pseudoaneurysm

A/V fistula

Compartment syndrome



Occult Upper Extremity Vascular Injury

- Clavicle fracture/1st rib => subclavian artery
- Anterior shoulder dislocation => axillary artery
- Proximal humerus fracture => axillary artery
- Humeral shaft fracture => brachial artery
- Elbow dislocation => brachial artery

Clinical Features

Hard signs

Absent distal pulses

Signs of distal ischemia

Pain, pallor, paresthesia, paralysis, poikilothermia

Audible bruit or palpable thrill at injury site

Active pulsatile hem

Large expanding hematoma

Pulsatile hematoma

Soft Signs

Small nonexpanding hematoma

Peripheral nerve deficit

History of pulsatile or significant hemorrhage at time of injury

Unexplained hypotension

Bony injury (fracture, dislocation, penetration) or proximity penetrating wound

Differential Diagnosis

Extremity trauma

Peripheral nerve injury

Vascular injury

Tendon injury

Laceration

Fracture

Open fracture

Crush syndrome

Compartment syndrome

Rhabdomyolysis

Diagnosis

Arterial Pressure Index (API)

Doppler-determined arterial sys BP in injured limb divided by pressure in uninjured limb

<0.90 abnormal

Allows for serial, objective monitoring

Only detects obstructive lesions

unreliable in proximal injuries, popliteal injuries, shotgun wounds, multiple wounds, shock

false negative with deep femoral artery injury

Evaluation Algorithm

Hard (>90% risk of arterial injury; 50% require intervention)

Immediate arterial exploration without further investigation

Soft (30% risk of arterial injury)

API --> if < 0.9 obs/admit for 24h, serial API, consider:

Doppler U/S

CTA

Eval of compartment syndrome

MANAGEMENT

EMERGENCY VASCULAR SURGERY
CONSULT
(GENERAL SURGERY IF VASCULAR
NOT AVAILABLE)

MANAGEMENT

Depends on vascular injury
type

NON OPERATIVE

OPERATIVE MANAGEMENT

Arterial injuries

1. Lateral arteriorraphy
2. patch angioplasty
3. resection & EEA
4. resection & interposition graft
5. Bypass graft
6. Extra anatomic bypass
7. Ligation

OPERATIVE MANAGEMENT

Venous injuries

1. Simple repairs
2. Complex repairs
3. resection & EEA
4. resection & interposition graft
5. Bypass graft
6. PTFE graft
7. Ligation

POST OPERATIVE MANAGEMENT

Duration

COPMPPLICATIONS

Distal gangrene
Volkmanns ischemic contracture
Loss of function
Chronic pain

OPEN FOR DISCUSSION

to be continued