Lower Extremity Pseudoaneurysm.
Disclosure

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☐ I do not have any potential conflict of interest
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Trauma

- **Low-energy trauma.**
- **High-energy trauma:**
  - Caused by intensive forces during fall from the height, traffic accident, explosion, compression of the body etc.
- **Polytrauma:**
  - The traumatic injury of the several body systems leading to the severe or immediate life-threatening situation due to the decrease or failure of the basal vital functions - ventilation, circulation or consciousness.
Some providers have had the opportunity to gain experience in diagnosing and treating those severely injured from blast or high-velocity missiles. Most injuries have been due **Improvised Explosive Devices (IED)**. With explosions becoming more common in civilian settings, understanding types and effects of blast injury can familiarize the radiologist and result in increased detection of imaging findings for optimal diagnosis, prognosis, and treatment options.
There are several types of explosive ordinance seen in modern combat:

- **IED “Improvised Explosive Device”:** that is home-made from everyday materials. The harmful projectiles include anything from paperclips, screws, pins/nails and spent bullet shells to automobile parts (especially when the car is part of the bomb).

- **VB-IED “Vehicle-Borne Improvised Explosive Device”:** Essentially an IED that is placed in a vehicle.

- **RPG “Rocket Powered Grenade”:** a grenade that is shot from a rocket to explode on impact on human, group, or structure.
There are several types of explosive ordinance seen in modern combat:

- **EFP “Explosive Formed Penetrator”**: a tubular container capped with concave copper plates that project the plate by mechanics of reversal of the concavity to a convexity, providing additional thrust during the explosion.

- **Landmines**: an explosive device concealed under or on the ground and designed to destroy or disable enemy targets, ranging from combatants to vehicles and tanks, as they pass over or near it. Such a device is typically detonated automatically by way of pressure when a target steps on it or drives over it, although other detonation mechanisms are also sometimes used. A landmine may cause damage by direct blast effect, by fragments thrown up by the blast, or by...
There are several types of explosive ordinance seen in modern combat:

- **Mortar** is a device that fires projectiles at low velocities and short ranges. The mortar has traditionally been used as a weapon to propel explosive mortar *bombs* in high-arcing ballistic trajectories.

- **Rockets and warheads missiles.**
There are four types of blast injury depending on proximity, severity, type of explosive, and surrounding environment:

- **Primary**: Blast wave: hollow organs essentially burst due to overpressure.
- **Secondary**: debris and projectiles that have ballistic properties (most common, IED, other blasts).
- **Tertiary**: happens when the patient’s body becomes the flying object and collides with other objects (walls, objects, vehicles..)
- **Quaternary** (or miscellaneous): injury comes from burns from the blast heat or inhalation of gases and smoke released in the explosion.

Many casualties have a combination of these injury types.
Lower Extremity pseudoaneurysms (PSA)
18 year old female involved in mortar grenade injury falling on her house, flying debris and objects cutting and crossing her right proximal thigh and perineum. Rt CFA/SFA pseudoaneurym and AVF
24 year old male involved in combat injury by sniper attack his right thigh with a bullet causing active arterial bleeding.
27 year old male involved in combat injury by flying debris and projectiles in battlefield after a landmine explosion. Lt SFA pseudoaneurysm.
22 year old male blast-injury victim with Rt pop a injury and large peudoaneurysm limiting the knee joint mobility. treated with a Viabahn stent graft.
26 year old male blast-injury victim with Rt pop a injury and large pseudoaneurysm, treated with a Viabahn stent graft.
27 year old male involved in combat injury by flying debris and projectiles in battlefield after a landmine explosion, LT popliteal artery pseudoaneurysm and AVF
72 year old male presented with a chronic growing pulsatile mass in the popliteal fossa.
57 year old female patient post cardiac angiography (PCI) right groin hematoma and pulsatile painful mass treated with US guided compression.
Cases
24 year old male involved in combat injury by snipper attack his right thigh with a bullet causing active arterial bleeding.
Angiography was done and therapeutic intervention was done by a PTFE heparinized Viabahn stentgraft was done successfully.
18 year old female involved in mortar grenade injury falling on her house, flying debris and objects cutting and crossing her right proximal thigh and perineum.
She bleeds a lot and arrived to the local health facility with irrecordable pulse and BP, resuscitated with fluids and given 8 units of blood and plasma and referred to our hospital. Her Hb on arrival was 4..
6 units given and 8 FFP and emergency CTA was done vascular surgeon was planning to interfere with high risk of amputation as patient was unstable and wound was difficult to control and family was seeking better chance foe the young girl..
Patient then was referred to me for opinion by ICU team in the midnight..
I decide to shift her for angio..
21 year old male involved in combat injury by gunshot at the left thigh.
27 year old male involved in combat injury by flying debris and projectiles in battlefield after a landmine explosion
Large area of penetrating FB and laceration more in the left leg with comminuted fractures and skin loss. Blood loss was continuous and CT shows a pseudoaneurysm at the Lt SFA mid-third.
Angiography was done and therapeutic intervention was done by a PTFE heparinized Viabahn stentgraft was done successfully.
THANK YOU
Lower Extremity Pseudoaneurysm.