



Vascular Trauma

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The term "vascular trauma" refers to injury to a blood vessel—an artery, which carries blood to an extremity or an organ, or a vein, which returns blood to the heart. Vascular Surgeons categorize these injuries by the type of trauma that caused them: blunt or penetrating injury.

- A blunt injury can occur when a blood vessel is crushed or stretched.
- A penetrating injury can occur when a blood vessel is punctured, torn or severed.
- Either type of vascular trauma can cause the blood vessel to clot (thrombosis) and interrupt blood flow to an organ or extremity, or cause bleeding which can lead to life-threatening hemorrhage.

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Symptoms

DISLOCATED JOINTS&NBSP;

If your knee dislocates, your popliteal artery (the vessel just behind the knee) is likely to be injured, too. Trauma to the popliteal artery often causes injury to the calf muscle and the repair process is lengthy.

FRACTURED BONES&NBSP;

If you fracture your upper arm bone (humerus) just above the elbow (supracondylar humerus fracture), you may also have injured the blood vessel that crosses the elbow joint (brachial artery).

BLEEDING FROM A WOUND

Causes

Many accidents and activities can lead to vascular trauma, including:

- Home accidents.
- Bicycle and motorized vehicle accidents while driving or riding.
- Job-related accidents.
- Athletic injuries.
- Falls.
- Domestic violence.
- Combat injuries.
- Violent crime.

Diagnosis

A vascular injury can sometimes be diagnosed by physical examination alone. In the case of multiple injuries, deciding which of the problems needs to be dealt with most urgently is jointly made by medical specialists. These specialists often include trauma surgeons, orthopedic surgeons, and neurosurgeons among others.

TESTS MAY BE NEEDED&NBSP;

Many vascular injuries can be subtle. Diagnostic imaging may be required to understand the nature and scope of the injury, and how best to treat it. Duplex ultrasound scanning, CT scanning, or angiography are options.

Treatments

SURGICAL REPAIR of a blood vessel often requires a surgical bypass .

- This procedure uses a prosthetic (artificial) graft or a natural graft formed from a portion of a vein obtained from another location in your body, usually from your thigh or calf.
- If the injured vessel is a vein, it may be repaired with a graft, but sometimes can simply be tied off (ligated).

ENDOVASCULAR TREATMENT, less invasive than open surgery, may be an option for some vascular injuries.

- Through balloon stenting, some injured vessels can be widened to restore blood flow.
- During the same procedure, if needed, a stent graft can be placed to provide internal support to help keep the vessel open.

FASCIOTOMY, a surgical procedure to repair muscle damage may be required.

- In some injuries, until blood vessels are repaired, muscles can suffer damaged due to impaired circulation. For example, when an extremity is injured, like the lower-leg, muscle damage can result in significant swelling. In severe cases, swollen muscles can be constrained by the fascia (the thick layer of tissue beneath the skin). The resulting loss of blood circulation to the muscles, nerves, and skin can lead to nerve and muscle damage and limb loss.
- If this happens, the fascia must be opened surgically, by incision, so that the muscle swelling can occur unimpaired manner without undue pressure on the small vessels and nerves.
- If the swelling is very pronounced, the skin must be left open, usually for several days. Once the swelling resolves, the incision can be closed. Occasionally, the swelling is so severe or so prolonged that a skin graft is needed to achieve wound closure.

Staying Healthy

Avoiding traumatic injuries may not always be possible. To reduce your risk:

- Wear seat belts while driving or riding in a motorized vehicle.
- Do not drive while intoxicated, or ride with an intoxicated driver.
- Take care when working with knives and tools.
- Use cautions when operating or standing near machinery.
- Guard against slips and falls, especially on stairs, ladders, or uneven or slippery surfaces.
- Avoid volatile situations and environments.

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