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ARTERIAL EMBOLISM

An arterial embolism is a blood clot or piece of atherosclerotic plaque in an artery that is traveling through the arterial system. The embolism can cause a sudden interruption of blood flow to an organ or body part if it clogs the bloodflow's access to the particular organ or body part. The embolism breaks off of its original location and travels through the arterial system to another location in the body. The embolism can deprive surrounding tissues of blood flow and oxygen (ischemia), which can damage or destroy the tissues.

What causes arterial embolism?

Any factor that causes the formation of blood clots can increase the risk of arterial embolism. These include: injury or damage to an artery wall, hematologic (blood component) conditions associated with increased clotting (such as increased platelet count) and other disorders.

Atherosclerotic plaque can break free and become an arterial embolus, so individuals with atherosclerosis (clogging of arteries with plaque) are at increased risk.

Atrial fibrillation can increase risk, because the blood flow through the atria can be slow enough to trigger clots to form.

Arterial emboli may involve the extremities, especially the legs and feet. Some may involve the brain or heart, causing stroke or heart attack. Less common sites include the kidneys, intestines and other areas.

What are the symptoms of arterial embolization?

Symptoms can occur gradually or suddenly, and they include:

For EMBOLIZATION IN AN EXTREMITY:

- muscle pain in the extremity
- numbness and tingling in the extremity
- pale color of arm or leg
- decreased or absent pulse in the extremity
- decreased extremity temperature, the extremity feels cold to touch
- lack of movement of the extremity
- weakness of the extremity

- muscle spasm in the extremity

Later symptoms:

- skin erosion (ulcer)
- skin necrosis (skin is dark and damaged)
- skin falling off (sloughing)

EMBOLI IN AN INTERNAL ORGAN

- symptoms of ischemia (lack of oxygen)
- usually pain and/or temporary decreased function
- symptoms of infarction (tissue death)
- usually pain and/or loss of function of all or part of the organ

How is arterial embolism diagnosed?

Pulse to the affected extremity may be decreased or absent. Physical signs of tissue death can indicate embolism.

Certain imaging procedures are used to detect arterial embolization. They include:

- arteriography/angiography of the affected extremity or organ
- renal arteriography
- pulmonary angiography
- extremity arteriography
- ultrasound of the affected extremity or organ
- plethysmography
- a duplex Doppler/ultrasound exam of extremity
- echocardiography (occasionally)

This disease may also alter the results of the following tests:

- platelet aggregation test
- isotope study
- fibrin degradation products
- factor VIII assay
- euglobulin lysis time
- cystography, retrograde
- cranial MRI

How is arterial embolism treated?

Arterial embolism must usually be treated immediately. Treatment involves addressing the symptoms of embolization as well as prevention of the source of emboli.

Medications are used to break up clots and improve blood flow. These include "thrombolytic medications" (like streptokinase) which break up clots, and

anticoagulant medications or antiplatelet medications (like Coumadin or aspirin) which "thin" the blood and prevent formation of new clots.

Surgery may be appropriate for some people. This may include open surgical removal of the clot (embolectomy) or balloon catheter clot removal (preferred, if feasible). Surgical replacement or bypass of the blood vessel is occasionally required.

How can I prevent arterial embolization?

To prevent arterial embolization, you must prevent the source of the embolus (either blood clots or atherosclerotic plaque). Medications like Coumadin are used to "thin" the blood to reduce the risk of clot formation. Preventing atherosclerosis usually involves lifestyle and diet changes, and medications.