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Heart to Heart Talk

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Ruptured Aneurysm

What is an aneurysm?

An aneurysm is an artery that has ballooned out, and the process, which could take years, dilates and renders the wall of the artery thin and fragile making it susceptible to leaks and rupture. The blood pressure inside the artery exerts a tremendous dynamic force against the arterial wall, like water in a dam, and any leak rapidly leads to a rupture, causing massive and often fatal hemorrhage.

Why causes an aneurysm?

Aneurysm results from an inherent weakness of the wall of the artery, which could be genetic, degenerative, or ischemic (poor blood supply to the arterial wall itself), and aggravated over time by factors like untreated or uncontrolled hypertension (high blood pressure) and frequent straining (as in lifting weights or any heavy object).

Which arteries are prone to develop aneurysm?

Aneurysm frequently involves the abdominal aorta (largest artery in the belly, the thoracic aorta (largest artery in the chest as it take off from the heart), femoral (groin) artery, popliteal (back of the knee) artery, cerebral (brain) artery. Aneurysm can develop in practically any artery in the body.

Is aneurysm dangerous?

Yes, if it grows large enough (twice or larger than its normal diameter), increasing the risk of rupture. The other common danger of an aneurysm is thrombus (blood clot) formation within the dilated (ballooned out) artery. A piece of this clot could tear off and travel to the extremity (arm, hand, leg, feet, etc.) or to vital organs, like the brain, lungs, kidney, etc.

Is stroke due to ruptured aneurysm?

A ruptured cerebral (brain) artery aneurysm could definitely result in stroke

when it breaks open, but the more common cause is cerebral ischemia (lack of blood) due to blockage (hardening of the artery) in the carotid (neck) artery that normally supplies blood to the brain, or due to an embolus (blood clot) that originates from a diseased carotid artery that has formed arteriosclerotic plaques. A blood clot or a piece of this plaque in the carotid artery could travel to, and block, the cerebral artery, resulting in stroke.

What are arteriosclerotic plaques?

Arteriosclerosis (arterio means artery and sclerosis means hardening) is what is commonly known as hardening of the artery due to constant and long standing cholesterol build-up in the inner wall of the artery. Whenever we eat fatty foods like red meat (pork, beef, etc) and/or eggs, dairy products, etc., the cholesterol level in our blood serum goes up, making our blood thicker and prone to blood clot formation. As it circulates all over our body, this thick blood is painted on the intima (inner wall) of the arteries and adheres to the wall, and as weeks and months go by, this thick blood becomes clots, which ultimately mature into hardened plaques (similar to dental plaques on our teeth) that are calcified and hard as bone. These plaques grow larger and ultimately fill-up and obstruct the lumen (caliber) of the artery, much like the junk blocking our sewer pipes in the kitchen sink over a period of time.

What are the symptoms of a ruptured aneurysm?

This depends on the location of the artery that ruptures. In the brain, it causes stroke (paralysis, coma) and/or death. In the chest and abdomen, the tear in the artery causes pain, and the massive hemorrhage results in severe blood loss (sudden fall in blood pressure, fainting, sense of an impending doom), and shock, which could be fatal. In the leg or arm, the area where the pulsating lump is will show sudden bulging or enlargement as blood leaks out of the artery, with pain and fall in blood pressure. If the bleeding is severe, shock, and even death, can follow.

How does one know if he/she has an aneurysm?

Cerebral aneurysm is in the brain and obviously not palpable, and so with aneurysm in the chest or abdomen. Those in the extremities (arms or legs) present as an abnormally large pulsating lump that can be felt by the examining hand. Those within the skull, chest or abdomen may be diagnosed by X-rays, Doppler Ultrasound, or angiogram (X-ray following dye injection into the artery suspected to be aneurysmal).

How do we prevent aneurysm formation?

There is really no way to prevent the formation of aneurysm, because its development is mainly due to genetic predisposition. However, if one already has an aneurysm, avoiding strenuous activities, like straining, weight-lifting, pushing or pulling, will minimize the chances of tear or rupture. Once diagnosed, an aneurysm of significant size should be surgically repaired.

Will low fat diet help?

Low fat diet (of fish, vegetables and fruits, and abstinence from red meat and eggs) will greatly help in maintaining healthy arteries and a healthy body as a whole. This will make the arteries stronger and minimize hardening an blockages of the arteries.

What medications aid in lessening the risk of rupture?

There is no medication that will "normalize" an artery that is already aneurysmal. However, among persons who have hypertension (high blood pressure) and confirmed to have an aneurysm, taking medications to control the blood pressure is a prudent way to lessen the risk of rupture.

What is the treatment for aneurysm?

Since an aneurysm is an anatomic or structural pathology, there is no drug that will shrink the ballooned out artery to normal. The standard treatment for almost all aneurysms is surgical repair. The aneurysm is resected ("cut out") and a straight tube graft (artificial artery made of dacron material) is sutured in place to bridge the gap in between. In the brain, surgical clips could be placed on the normal portion of the artery on either side of the aneurysm, to isolate it, preventing blood from entering it. Some micro (smaller) aneurysms in the abdominal organs may be "embolized" (clotted) percutaneously (by catheter inserted thru the groin artery) to isolate them from the circulation.

What does one do to confirm a suspicion?

If one suspects he/she might have an aneurysm, the most prudent thing to do is to seek medical consultation. As stated earlier, an aneurysm could be serious, even fatal, when it leaks or ruptures. It is best to play it safe when it comes to our health. As the saying goes, health is wealth. Let us not lose it before realizing this is indeed true.