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Heart to Heart

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Pulmonary Embolism

What is a pulmonary embolus?

Embolus means traveling blood clot. Pulmonary embolus is blood clot that travels to the pulmonary (lung) arteries. The embolus results in the obstruction of the lung arteries depriving the lungs of blood supply. The disease is called Pulmonary Embolism (popularly known as PE in medical circles), where blood clots coming from the veins in legs and/or the pelvis embolize (travel in the blood stream) to the lungs through the pulmonary arteries.

Is the condition dangerous?

Very, in severe cases. It could even be life-threatening. What happens is the pulmonary artery becomes filled with blood clots and eventually blocked off. This will prevent much of the blood from going to the lungs to be oxygenated. As a result, the person's blood oxygen level drops dramatically (hypoxia), a condition that could lead to severe shortness of breath, massive chest pains, shock and cardiac arrest.

Are there mild forms of PE?

Yes, when the blood clots lodged in the pulmonary artery are small ones and not significantly blocking the blood flow to the lungs. Mild, sub-clinical PE, those without symptoms where persons are not even aware they have blood clots in the lungs, occurs much more commonly than we realize. Many times, the discovery of PE is made during autopsy. Normally, the lungs automatically lyse (dissolve) blood clots, but if the clots are very large and overwhelming, the enzymes will not be able to dissolve the clots and the dangerous situation described earlier will come into play.

Why do clots form in the legs and pelvis?

The most common reason is the presence of varicose veins in the legs and in the pelvic veins, where blood pools and stagnate. This slowed circulation and stagnation promotes thrombosis (clot formation). If the clots are not firmly attached to the walls of the veins, normal body movement could send these clots flowing with the stream of blood, all the way to the pulmonary artery and to the lungs.

What promotes blood clots?

The major factors that encourage clot formation includes, dehydration (poor fluid intake), smoking, inactivity, birth control (estrogen) pills, standing for a long period of time and varicose veins (both of which cause blood pooling in the leg veins). All these factors have a common denominator: they make the blood thicker, and more prone to clot.

What are the diagnostic tests for PE?

PE is not easy to diagnose in most instances, unless massive. The tests range from serum enzyme studies, EKG, chest X-ray, lung scan, xenon-133 lung ventilation scan, and pulmonary arteriography.

What is the prognosis for PE?

Those with markedly compromised cardiopulmonary function (pre-existing bad heart and lung diseases) have a greater than 25% chance of dying from a severe pulmonary embolism. Those who are otherwise healthy would succumb to PE only IF the obstruction in the pulmonary artery is greater than 50%. If the PE is so severe that death is inevitable, it usually happens within one to two hours.

How can one prevent PE?

To prevent or minimize pulmonary embolism, one has to avoid all those factors that promote blood clot formation. Doing daily exercises, not smoking, drinking at least 8 glasses of water a day, elevating the legs and wearing support stockings for varicose veins, avoiding prolonged sitting and moving around and exercising the legs often (as in long air flights). Medical consultation is paramount, especially among those with varicose veins or those who have had frequent thrombophlebitis (painful inflammation of the leg veins, with clots). Where indicated, blood thinners (aspirin or the more potent ones) may be prescribed by the physician. Pulmonary embolism, like most illnesses, is best prevented.