

What is Pericarditis?

Pericarditis is an inflammation of the sack surrounding the heart. This condition usually causes an accumulation of fluid around the heart and may be associated with chest pain. Although most cases are usually just a nuisance, Pericarditis can be very serious and life threatening.

The pericardium is a sack that surrounds the heart. It is made of a rather thin but tough layer of tissue. It is supplied with a significant amount of lymphatic drainage. This lymph fluid provides lubrication for the heart as it beats in the chest and minimizes friction from the surrounding tissue. Normally we all have 15 to 50 mls of fluid within the pericardial sac. The pericardium also provides some structural support for the heart to maintain its position with the chest. The pericardium can also prevent excessive stretching of the heart under extreme circumstances.

Pericarditis becomes a problem when inflammation of the pericardium causes an excessive amount of fluid to build up within the pericardial sac. This excess fluid presses against the heart and limits the amount of blood that can be pumped by the heart. If this is severe enough it causes a condition known as **cardiac tamponade**. During cardiac tamponade the cardiac output is decreased and the body does not receive enough blood. This can cause a myocardial infarction and even death. Because there are a lot of nerve endings in the pericardium, when the pericardial surface is inflamed it can be very painful.

Pericarditis is generally easy to diagnose. There is usually a history of a febrile illness 5-10 days prior. There is development of chest pain that is frequently gradual, then can become very severe. The chest pain is worse lying down and better when the patient sits up. The patient will be very tired. On physical exam when we listen to the heart there is a characteristic "rub" that can be heard. If the amount of fluid accumulated in the sac is significant there are blood pressure changes called "Pulsus **Paradox**". The heart rate is generally higher than normal. There are characteristic changes on the EKG. A chest X-Ray will show an enlarged heart. The best way to determine the amount of fluid around the heart or "effusion" is by performing an echocardiogram. With this test the heart and the surrounding tissues are actually visualized. Blood work can sometimes be helpful.

The most common cause of Pericarditis is a viral infection. The most common viruses associated with Pericarditis are the echoviruses, Coxsackie virus, chicken pox, influenza Herpes and hepatitis viruses. Pericarditis can also be caused by bacteria. This is usually more serious and life threatening. These bacteria include Staph Aureus, H. Influenza., Streptococcus and rarely Tuberculosis. Sometimes thyroid, autoimmune disease and kidney disease can cause pericardial effusion. Sometime this occurs after open-heart surgery.

The treatment for viral Pericarditis is usually rest, anti-inflammatory medication such as Motrin, Toradol or Naprosyn. It will usually resolve in two to three weeks. Bacterial infections require weeks of IV antibiotics. Lasix may be used if there is a significant amount of fluid. If we are concerned that there is a bacterial Pericarditis or if the amount of fluid is compromising the circulation then it is necessary to draw some of the fluid out with a needle and catheter. This procedure is known as a **pericardiocentesis**. It is occasionally necessary to surgically create a window into the lung cavity to ensure drainage of the fluid. Rarely, as the pericardium heals it will scar the surface of the heart and cause constriction of the heart movement. In these cases the pericardium needs to be removed from the heart surface.

If you have any questions, please ask one of the doctors.