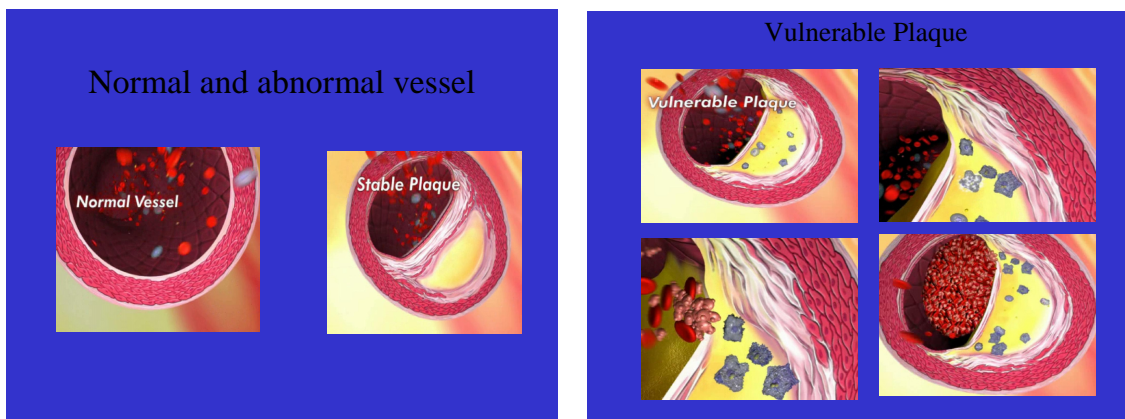


Coronary Artery Disease and Sudden Death

Coronary artery disease is the second commonest cause of death in Hong Kong. Every year, 3000 people die of the disease. The mean age of the people affected is getting younger. The etiology of the disease is due to accumulation of cholesterol in the wall of the artery. Such deposit is called an atherosclerotic plaque. As the plaque increases in size, the vessel expands. When it can expand no longer, the lumen becomes narrowed and stenosis occurs. When the stenosis exceeds 50% of luminal diameter, the affected person develops chest discomfort when oxygen demand of the heart increases. This may occur after meals, during exercise or anger. The membrane separating the cholesterol deposit within the plaque and the lumen of the vessel may rupture suddenly exposing the cholesterol to blood. This results in platelets accumulation and complete occlusion of the vessel. The heart muscle supplied by the vessel dies. Heart attack or acute myocardial infarction occurs.



Various stages of development of plaque

Rupture of plaque

Sudden Death

Acute myocardial infarction may result in sudden death as a result of arrhythmia. In a small number of cases, primary cardiac arrhythmia, i.e. arrhythmia without any demonstrable secondary cause, occurs. In Hong Kong, a survey in 1997 showed that coronary artery disease accounted for 57% of the total sudden death. A significant number of these have no prior symptoms.

Prevention of Sudden Death

Prevention is better than cure. Regular check up to exclude underlying risk factors for coronary artery disease such as hypertension, diabetes and elevated cholesterol will be useful to prevent the disease. The use of implantable cardioverter defibrillator (ICD) is useful to prevent recurrent serious arrhythmia that may result in sudden death.