Cardiac Catheterization

Coronary artery disease and ischemic heart disease are terms that refer to the atherosclerotic narrowing of the arteries that supply the heart muscle with blood. Because this disease is a leading cause of death in the United States, coronary artery disease is perhaps the most important impairment seen in underwriting. Effective risk selection requires a good understanding of coronary anatomy and cardiac function, the atherosclerotic process, and the important prognostic factors. *Cardiac catheterization* is the best method for determining the location and extent of atherosclerotic disease. It provides a description of the location and extent of arterial narrowing within each major artery. Obstructive disease may occur in the proximal (close to the origin) portion of an artery, in the mid-section, or in the end (distal). Because of the branching nature of arteries, a lesion in the proximal portion of a major coronary artery affects more heart muscle than one that occurs in the mid-section or beyond, or in one of the branches.

Blood supply to the heart originates at the base of the aorta with two vessels: the left main coronary artery and the right coronary artery (*RCA*). The left main coronary artery is relatively short; it divides into two main coronary arteries: the left anterior descending (*LAD*) and the left circumflex (*CFX*). There tends to be a direct correlation between the severity of coronary artery disease and ventricular function. If coronary blood flow is deficient, ischemia occurs and the affected heart muscle will not contract normally.

The left ventricle has primary importance because it pumps blood to the whole body. Its blood comes mainly from the LAD. Heart catheterization describes atherosclerotic disease in the LAD and examines how effectively the left ventricle contracts. Left ventricular function is an important factor in the prognosis of coronary artery disease. Following a myocardial infarction (heart attack), the heart muscle is fibrotic and loses contractile ability. Individuals with diminished left ventricular function have a poorer prognosis than those with good function who are better able to handle future ischemic events. Left ventricular function is commonly expressed in three ways:

(1) *EJECTION FRACTION* (*EF*) is the best measure of left ventricular function. When the left ventricular walls contract, blood is ejected into the aorta and throughout the body. The amount of blood that is ejected is called the Ejection Fraction and 55% or greater is normal. EF below 50% usually indicates some degree of left ventricular dysfunction. The lower the percentage, the worse the function and prognosis. EF below 40% is unfavorable.

(2) *THE WALL MOTION* of the left ventricle can be observed during ventricular contraction. Areas of ischemia and infarction may not contract appropriately. If an area moves to a lesser extent than expected, it is called hypokinetic. When there is no motion, it is described as akinetic. If a portion of the left ventricular wall bulges outward during contraction, it is called dyskinetic. Sometimes the entire wall of the left ventricle moves sluggishly. This is called *generalized,* diffuse, or global hypokinesis. It is not uncommon to have several areas of the left ventricular wall affected. Some may be hypokinetic while others may be dyskinetic or akinetic.

(3) *LEFT VENTRICULAR END-DIASTOLIC PRESSURE* (*LVEDP*) is another measure of function. If the left ventricle is impaired and unable to propel blood into the aorta with adequate force, excess blood volume remains in the ventricle. This leads to elevation of filling pressures within the left ventricle. Normal left ventricular filling pressure is 8-12 mmHG. An elevated LVEDP is an indication that left ventricular function is impaired.

If your client has had a cardiac catheterization, please answer the following:

1. Please list date(s) of any catheterization(s):_____

2. Has your client had any of the following if yes give details:
Heart attack _____
Bypass surgery _____
Angioplasty _____

3. Is your client on any medications?
Yes, please give details
_____

4. Please check if your client has had any of the following:
History of chest pain____   Diabetes_____
Lipid disorder _____   Family history of heart disease _____
Overweight _____   High blood pressure _____

5. Has your client smoked cigarettes or other form of tobacco in the last 5 years?
If yes please give details _____

6. Does your client have any other major health problems (ex: cancer, etc.)?
If yes, please give details
_____