Percutaneous Myocardial Revascularization

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Throughout the country there are numerous people suffering from the condition of coronary artery disease. A key symptom of this disease is angina, or chest pain and discomfort caused by lack of blood flow to the heart muscle. For many people with Level IV angina there is little relief. Unfortunately not all patients are candidates for angioplasty or bypass surgery, and often the effects of drug therapy are limited. With the pending FDA approval of Percutaneous Myocardial Revascularization (PMR), a new area of treatment for people with severe angina will be available.

PMR involves a non-invasive technique, and has a rather high level of success. A laser-transmitting catheter is inserted in the femoral artery and fed up the aorta into the left ventricle. From the catheter twenty to forty 5-7mm deep channels are created in the heart using a Ho:YAG (holmium: yttrium-aluminum-garnet) laser. This technique does not penetrate the into the endocardium layer. These channels are believed to promote blood flow to the surrounding oxygen deprived tissue of the heart.

Due to the nature of this procedure it can be preformed under local anesthesia by a cardiologist. This treatment has a good rate of success, which is sure to increase with new developments in devices and techniques. In some studies using the related procedure of TMR 80-90% of individuals who receive treatment improve with extensive lessening of angina symptoms. Unlike TMR's 5-7 day recovery, an overnight stay is all that's required once the PMR procedure is completed.

The devices used were developed by the CardioGenesis Corp. This company developed the instrumentation for this procedure, as well as those used for TransMyocardical Revascularization (TMR), their sister procedure. Unlike TMR, PMR does not fully penetrate the heart, and does not require any surgical incisions in the chest region.

With more companies participating in the development of instrumentation, and the pending FDA approval in this country, PMR will provide a chance for relief from severe angina for "no option" patients, with very little complications.

- http://www.cardiogenesis.com/products/pmr.cfm
- http://www.biomedcentral.com/1523-3839/1/110
- http://www.critical-care-nurse.org