

Angioplasty: A Revolution in the Therapy of Vascular Disease

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Angioplasty is an endovascular procedure that uses guide wires, catheters, balloon and stents to treat stenosis, or occlusions of the arteries. It was first performed from a dedicated Radiologist, Charles

Dotter about 50 years ago. Initially the medical community did not really accept the new method. But it was also a matter of fact, that the initial "primitive" materials made the endovascular treatment quite challenging and risky. Many years later new materials such as new guide wires, low profile catheters and balloons were developed from the industry. These new materials made endovascular procedures and angioplasty safe and effective. The last decade's angioplasty is an established and well accepted method of treatment from the medical community. Nowadays angioplasty is a first line treatment for patients with peripheral arterial disease. Stenotic lesions in the iliac arteries or the arteries of the leg can be treated with balloon dilatation and stenting. The patient can be discharged from the hospital and return in normal activity the next day. That makes angioplasty a cost-effective therapy. The procedure is performed under local anesthesia and there is no need for general anesthesia. This is of great importance for patients with severe diseases, like chronic obstructive pulmonary disease, or coronary disease, that are high risk groups for receiving general anesthesia. Diabetic patients with peripheral arteriopathy and intermittent claudication, or ulceration are a special group that benefits from the procedure. Angioplasty has a great contribution in free amputation life of diabetic patients. The development of many new dedicated materials, such as long, low profile balloons and stents

and drug eluting balloons contribute further in the treatment of the peripheral arterial disease. Angioplasty has, also, application in many other diseases. Carotid lesions that result in strokes with high mortality and disability rates can be treated with balloons and stents. Stenotic lesions of the upper extremities or the subclavian arteries (eg subclavian steal syndrome) can be safely and effectively treated by the method of angioplasty. Lesions of the mesenteric arteries that supply the intestine with blood can cause pain after the launch due to mesenteric ischemia and chronic weight loss. Angioplasty has been successfully applied in the treatment of mesenteric ischemia. Patients on hemodialysis consist another group that benefits from angioplasty. These patients often develop stenosis at the area of the arteriovenous fistulas, or at the central veins. Central venous stenosis is also encountered on patients with central venous catheters for a temporary or permanent vascular access. Venous angioplasty is a first line treatment in venous stenotic lesions, or obstructions, especially by the development of new dedicated high pressure balloons, cutting balloons and stents. Patients with deep venous thrombosis can be treated with angioplasty and venous stents, in order to avoid serious complications, such as the post thrombotic syndrome. Angioplasty has, now, been established as a first line effective and safe treatment for many arterial and vein diseases. New equipment and techniques in Interventional Radiology suite, like rotational 3D angiography and intravascular ultrasound (IVUS), in combination with dedicated Interventional Radiologists increase further the effectiveness and safety of Angioplasty and also expands its application field.

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