ENDOVASCULAR TREATMENT OF FEMOROPOPLITEAL ARTERIAL OCCLUSIVE DISEASE

Essay

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List of Abbreviation

ABI	ankle-brachial index
BA	Ballon Angioplasty
CFA	Common femoral artery.
CLI	Critical limb ischaemia
CT	computed tomography
DES	drug-eluting stents
FAST	Femoral Artery Stenting Trial
FDA	Food and Drug Administration
HDL	high-density lipoprotein
IC	intermittent claudication
IDDM	insulin-dependent diabetes mellitus
IDL	intermediate-density lipoprotein
Laci	The Laser Atherectomy for Critical Ischaemia
LAO	Left anterior oblique
LDL	low-density lipoprotein
MRA	Magnetic Resonance Angiography

NIDDM	insulin-dependent diabetes mellitus
NO	nitric oxide
OD	Outer diameter
PACS	Picture archiving and communication system
PAD	peripheral arterial disease
PELA	The Peripheral Excimer Laser Angioplasty
PFA	Profunda femoris artery
PTAS	percutaneous transluminal Angioplasty and stenting
PTX	Paclitaxel
PVD	Peripheral vascular disease
SFA	Superficial femoral artery
Sia	Subintimal angioplasty
SMCs	smooth muscle cells
TASC	The Trans-Atlantic Inter-Society Consensus
Us	united states
VLDL	very-low-density lipoprotein

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INTRODUCTION

Peripheral arterial disease (PAD) affects 12-20 percent of population age 65 and older. The Prevalence increases dramatically with age and is associated with significant morbidity and mortality. Despite its prevalence and cardiovascular risk implications, only 25 percent of PAD patients are undergoing treatment *(McDermott et al., 2004).*

The risk factors for PAD are similar to those for coronary heart disease, although diabetes and cigarette smoking are particularly strong risk factors for PAD *(Becker et al., 2002).*

In the general population, only about 10 percent of persons with PAD have the classic symptoms of intermittent claudication (IC). About 40 percent do not complain of leg pain, while the remaining 50 percent have a variety of leg symptoms different from classic claudication. Persons with PAD have impaired function and quality of life. This is true even for persons who do not report leg symptoms *(Murabito et al., 2005).*

Critical lower limb ischaemia, which is characterized by rest pain with or without tissue loss (ulcer, gangrene) is a substantial health burden in the ageing population, and in many developed countries it is associated with an increased prevalence of diabetes. The goals of treatment are: to provide pain relief, promote wound healing, and preserve limb function, whilst minimizing overall cardiovascular risks. These goals help maintain independence and quality of life. They are best attained by limb revascularization whenever possible, as the risk of limb loss within 1 year -if left untreated- is estimated to be 70% in the presence of rest pain and 95% if there is tissue loss. Traditionally managed by risk factor modification and surgical revascularization, the current treatment has undergone a shift in management within these paradigms to include more aggressive endoluminal therapy *(Dormandy and Rutherford, 2000).*

On the other hand, the femoropopliteal segment remains the most challenging area with respect to recurrence after endovascular treatment. The superficial femoral artery is the longest artery in the human body and is fixed between two major flexion

points, the hip and the knee. During movements, like walking or stair climbing, various forces are exerted on this vessel including flexion, longitudinal and lateral compression and torsion. Furthermore, the artery goes through a major muscle group at the site of the Hunter's canal, leading to additional external compression during muscular workout *(Rogers and Laird, 2007).*

Patients with peripheral vascular disease are often at an increased surgical risk due to their advanced age and multiple co-morbidities, resulting in a significant rate of perioperative complications. Endoluminal therapy offers many advantages due to its minimally invasive nature, reduced anesthesia requirement and low morbidity and mortality with good patency rates *(Adam et al., 2005).*

Since Dotter and Judkins published their first experiences and results in 1964, percutaneous transluminal Angioplasty and stenting (PTAS) have become frequently used techniques for dilatation and recanalization of obstructions in arteries of the Lower extremities in patients suffering from peripheral artery disease (PAD). The results of this invasive

procedure have been presented in many studies as revolutionary ones, but only a few studies have compared this procedure with the standard surgical procedure for treatment of PAD in the infrainguinal segment *(Cvetanovski et al., 2009).*

AIM OF THE WORK

The aim of this work is to outline current modern trends of revascularization by endovascular femoro popliteal angioplasty with or without stenting.