New Trends in Management of Popliteal Artery Aneurysm

Essay

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List of Abbreviations

AAAs	Abdominal Aortic Aneurysms
AT	Anterior Tibial
CAD	Cystic Advential Diseases
CES	Cragg Endopro system
CORV	Corvita
CTA	Computed Tomographic Angiogram
ECG	Electrocardiogram
ePTFE	Expanded Polytetrafluoroethylene
ET	Endovascular Treatment
FEP	Fluorinated Ethylene Propylene
HB	Hemobahn
LSV	Longer Saphenous Vein
MICs	Minimum Inhibitory Concentrations
MRA	Magnetic Resonance Angiogram
NS	Not Significant
OR	Open Repair
P	Passanger
PAAs	Popliteal Artery Aneurysms
PAES	Popliteal Artery Entrapment Syndrome
PGI	Prosthetic Graft Infections
PR	Peroneal
PT	Posterior Tibial
PTA	Percutaneous Transluminal Angioplasty
SSIs	Surgical Site Infections
TPT	Tibio Peroneal Trunk
US	Ultrasound
VB	Viabahn
WG	Wallgraft
WS	Wallstent

INTRODUCTION

Popliteal artery aneurysms are rare in the general population , although they are the most common peripheral artery aneurysm accounting 70% . Popliteal artery aneurysm preferentially affects men. However, the basis for this sex difference is unknown ***(Aparna Diwan, et al 2000).***

About 50% of the patients with popliteal artery aneurysms have bilateral popliteal artery aneurysms and 30 to 50 % of this patients may have an associated abdominal aortic aneurysm ***(Huang Y et al,2007).***

With exclusion of trauma and rare congenital disorders the majority of popliteal artery aneurysms are considered to be true aneurysms. Many writers in the past regarded popliteal artery aneurysms as atherosclerosis, but most of popliteal artery aneurysms are degenerative ***(Jacob et al.2001).***

Aneurysm less than 2 cm are rarely symptomatic & most surgeons use 2 cm as the threshold diameter, symptoms as acute or chronic ischaemia start to present when diameter of aneurysm more than 2.6 cm to 3 cm in diameter ***(Pomposelli et al., 2010).***

Duplex ultrasonography has been shown to be superior to physical examination in detecting popliteal aneurysms, beyond detection, duplex ultrasonography provides critical information relevant to treatment, including the diameter, presence of intraluminal thrombus, velocity of blood flow, and patency of out flow artery ***(Pomposelli et al., 2010).***

✍ Introduction

Surgical management of complicated popliteal aneurysm as Patients with acute limb ischemia require urgent intervention to avoid amputation. In a patient with a viable limb & no symptoms of sensory or motor dysfunction, intravenous heparin can be administrated to stabilize the patient. Arteriography & surgery are performed during The same administration. If the aneurysm is fully occluded & patent distal outflow vessel is identified on arteriography, a vein bypass to the patent outflow vessel is performed as described previously. If no outflow vessel is identified & the patient's limb is not immediately threatened, intra-arterial thrombolysis is started with the objective of restoring flow to potential outflow target vessels ***(Pomposelli FB et al., 2010).***

Endovascular treatment has the benefit of not requiring general or regional anesthesia and therefore , the theoretical advantage of decreasing cardiac risk. The procedure can be done by simple percutaneous puncture or small cut down on SFA or CFA. Anatomical selection criteria for endovascular repair includes a good proximal and distal segment at least 2 cm , Lack of extensive vessel tortuosity , and an aneurysm that is not extremely large ***(Tielliu IF et al., 2005).***

In a meta analysis comparing open with endovascular repair of popliteal artery aneurysms , reported similar results with no significant difference in long term patency rate , however patients who underwent endovascular repair were more likely to have graft thrombosis and re-intervention at 30 days than those who

had open repair. They also reported significantly shorter length of hospital stay and operative time with endovascular repair ***(Antonello M et al., 2005)***

AIM OF THE WORK

The purpose of this study is to assess the management of popliteal artery aneurysm by endo-vascular procedures versus surgical procedures