OUTCOME OF INFRAPOPLITEAL ANGIOPLASTY

ESSAY

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بسم الله الرحمن الرحيم

To my family

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List of abbreviations

(IL-6)	interleukin-6
(TNF)	tumor necrosis factor
(LDL)	Low density lipoprotein
(M-CSF)	macrophage colony-stimulating factor
(MCP-1)	monocyte chemoattractant protein-1
(CoA)	acetyl coenzyme A
(IgG)	immunoglobulin G
(TF)	Transforming factor
(PDGF)	Platelet derived growth factor
(PAD)	Peripheral arterial disease
(HDL)	High density lipoprotein
(Lp (a))	lipoprotein (a)
(NO)	nitric oxide
(CRP)	C-Reactive Protein
(PFWD)	pain-free walking distance
(MWD)	maximal walking distance
(CBC)	complete blood count
(BUN)	blood urea nitrogen
(ECG)	electrocardiogram
(ABI)	ankle-brachial index
($tcPO_2$)	transcutaneous oxygen tension
(mV)	millivolts
(DSA)	Digital Subtraction Angiography
(MIP)	Maximum Intensity Projection
(CT)	Computed Tomography
(MRI)	magnetic resonance imaging
(MRA)	Magnetic Resonance Imaging and Angiography
(PTA)	Percutanous Transluminal Angioplasty
(MHz)	Mega Hertz
(SFA)	superficial femoral artery

(CFA)	Common Femoral Artery
(VS-1)	Visceral Selective-1 catheter
(Atm)	atmosphere
(AHA)	American Heart Association
(TASC)	TransAtlantic Inter-Society Consensus
(BASIL)	(Bypass versus Angioplasty in severe ischaemia of the leg),
(CLI)	critical limb ischemia
(TPVI)	tibioperoneal vessel interventions
(2D)	two-dimensional
(SFA)	superficial femoral artery
(QOL)	quality of life
(DESs)	drug-eluting stents
(CTOs)	chronic total occlusions
(IVUS)	Intravascular ultrasound
(PGE1)	prostaglandin E1
(AVF)	Arteriovenous fistula
(RPH)	Retroperitoneal hematoma

Abstract

PTA(percutanous transluminal angioplasty) is the treatment of choice in patients with infrapopliteal occlusive disease who typically present with CLI(critical limb ischaemia). With recent advances in technology, long and multiple stenotic and occlusive lesions can be treated successfully. This minimally invasive procedure carries a lower morbidity and mortality and shorter hospital stay compared with surgery and should be the first treatment option in all patients with CLI who would otherwise be offered distal bypass surgery or amputation, as failure rarely precludes surgery. Clinical success is superior to angiographic patency and in the majority of cases repeat angioplasty can be performed if there is recurrence of ischaemic symptoms and signs.ABI(Ankle-Brachial Index)is a good indexand investigation. Infrapopliteal PTA can also be performed after femoral angioplasty or bypass surgery, to improve outflow and hence patency of the proximally treated segment.

Key wards:

PTA=(percutanous transluminal angioplasty)
CLI=(critical limb ischaemia)
ABI=(Ankle-Brachial Index)

Introduction:

Introduction:

Currently the most common access methods of infrapopletial angioplasty are contralateral ,antegrade, ipsilateral, and rarely retrograde tibial access . Contralateral approach is the most commonly used method.Its advantages are that it allows for sufficient free movement during procedure., contrast injection is allowed to be closer to the region of interest and during hemostasis, antegrade flow down the treated vessel is not impaired. In patients with an occluded iliac artery or previous aortoiliac reconstruction antegrade approach is preferred. The retrograde tibial access is used when antegrade, contralateral, retrograde methods, have been unsuccessful . Bivalirudin and Tirofiban combination is safe alternative to unfractionated heparine during the procedure .**(Tsetis et al.,2004)**

Balloon angioplasty has been used as the main revascularization modality in chronic limb ischaemia . Cutting balloon in infra popletial arteries was associated with 20% rate of dissection necessitating use of adjunctive stenting . Cryoplasty by using nitrous oxide: the balloon is cooled to under ten degrees resulting in more controlled angioplasty and less need for stenting and less restenosis.Stenting are commonly used in infrapopletial region due to flow limiting dissection and vascular recoil. The use of drug eluting stents in infra popletial region has been compared to bare metal ones with 92% vs. 68% six months patency . Future technology may address the problem of stent restenosis by using bioabsorbable stents with drug eluting capability .The excimer LASER moves plaques by photo acoustic ablation. It allows for plaque ablation .86% procedural success with the use of excimer LASER was reached in subjects with high risk for surgical intervension . Atherectomy compared to balloon angioplasty results in higher luminal gain without plaque displacement and vessel injury.**(Krankenburg et al.,2005)**

Aim of the work:

The aim of this study is to evaluate the outcome results of infrapopliteal angioplasty, to overview methods and techniques, that determine the most suitable way to treat different types of lesions.

Chapter 1

ANATOMY OF ARTERIES OF LOWER LIMB