Outcomes of endovascular management for patients with TASC IID superfacial femoral artery occlusive disease.

Thesis

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توطئة للحصول علي درجة الماجستير في الجراحة العامة

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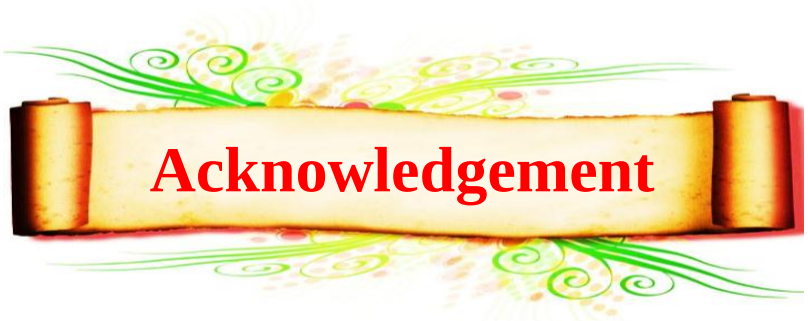

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Contents

List of Abbreviations

AAA	:	Abdominal aortic aneurysm
ABI	:	Ankle brachial index
AP	:	Ankle pressure
ARD	:	Acute respiratory distress syndrome
ASA	:	American Soceity of Anesthesiology
ASUSH	:	Ain Shams University Hospital
BASIL	:	Bypass versus angioplasty in severe ischemia of the leg
BMI	:	Body mass index
BR	:	Binary restenosis
CAD	:	Coronary artery diagnostic
CFA	:	Common femoral artery
CLI	:	Critical limb ischemia
Co2	:	Carbon dioxide
COPD	:	Chronic obstructive pulmonary disease
CTA	:	CT angiography
CTO	:	Chronic total occlusion
CV	:	Cardiovascular
CVA	:	Cerebrovascular accident
DCB	:	Drug coated balloon
DEBs	:	Drug eluting balloons
DIC	:	Disseminated intravascular coagulopathy
DM	:	Diabetes diseases
DSA	:	Digital subtraction angiography
FDA	:	The food and Drug Administration
Gd-DTPA	:	Gadolinium-diethylenetriamine pentaacetic acid
GW	:	Guide wire
HbA1C	:	Glycemic hemoglobin
HTN	:	Hypertension
I.C.	:	Intermittent claudication
INVEST	:	International Verapmil –sel Transdolapril
IVC	:	Inferior vena cava
IVUS	:	Intravascular ultrasound
LDL	:	Low density lipoprotein
LDL-C	:	Low density lipoprotein cholesterol
LL	:	Lower limb
MI	:	Myocardial infarction
MMPs	:	Matrix metalloproteinase
MRA	:	Magnetic resonance arteriography

MV	: Mean velocity
NFS	: Nephrogenic systemic fibrosis
NHS	: National Health service
PA	: Popliteal artery
PAD	: Peripheral arterial disease
PES	: Paclitaxel eluting stent
PSV	: Peak systolic velocity
PVR	: Pulse volume recording
RCTs	: Randomized clinical trials
REACH	: Reduction of atherothrobmosis for continued health
SBP	: Systolic blood pressure
TASC	: The trans-Atlantic Inters Society Consensus
TcPO2	: Transcutaneous oxygen
TER	: Target extremity revascularization
TIA	: Transient ischemic attack
TLR	: Target limb revascularization
TP	: Toe pressure
VCAM1	: Vascular cell adhesion molecule 1
WD	: Walking distance

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Abstract

Background: Peripheral lower limb ischemia is a condition that is prevalent worldwide and that is likely to increase with age. The increased prevalence of diabetes mellitus and hypertension in the population is considered to an important risk factor for the spread of peripheral arterial disease. **Aim of the Work:** This is a prospective study to assess the role of endovascular management for surgical high risk patients with TASC II D superfacial femoral artery occlusive diseases. **Patients and Methods:** This prospective analytic study was conducted on twenty patients with TASC-II D superficial femoral artery lesions at El maadi and Kobry El Kobba military hospitals. **Results:** Technical success reported in 18/20 cases (90%), 2 cases failed (1 received bypass, 1 underwent major amputation).The Primary patency within 2 years is 65%, Primary assisted patency is 70 % and Secondary patency is 60%. Limb salvage (primary end point) reported in 95%. Amputation free survival reported in 95%. **Conclusion:** An endovascular intervention for TASC-II D lesions can be performed safely with acceptable patency and limb salvage rates. This approach should be considered especially in patients with multiple comorbidities. Restenosis is not uncommon in these complex lengthy lesions that mandate close follow-up.

Key words: endovascular management, TASC IID superfacial femoral artery occlusive disease

INTRODUCTION

Peripheral lower limb ischemia is a condition that is prevalent worldwide and that is likely to increase with age. The increased prevalence of diabetes mellitus and hypertension in the population is considered to an important risk factor for the spread of peripheral arterial disease (PAD) ***(Saxon et al., 2008).***

The lower limb is the most common site of PAD. Because of the unique slow flow and high-resistance environment, the superficial femoral artery (SFA), extending to the proximal popliteal artery segment, is the most affected area. Femoropopliteal occlusive disease is still considered to be the Achilles heel of the vascular specialist ***(Zeller, 2007).*** Bypass surgery is known to be a definitive treatment ***(Hu et al., 2011)***.

Transatlantic Intersociety Consensus (TASC)-II recommends traditional surgical therapy for long superfacial femoral artery type D lesions. However, the main problems of surgery are increased morbidity and rehospitalization rates, being 50% ***(Norgren et al., 2007).***

In addition, patients with more complex, long occlusive lesions often develop significant comorbidities, placing them at a high risk for traditional open surgical bypass ***(Hu et al., 2011), (Goshima et al., 2004)***, ***(Yin et al., 2013)***. Recent advances in endovascular techniques have led to the widespread application of endovascular

repair for more severe femoral lesions ***(Hu et al., 2011)***, ***(Davaine et al., 2014)***.

Even though lesions are more distal and longer, the technical success does not seem to be altered ***(Desgranges et al., 2004), (Laird et al., 2010), (Han et al., 2011)***.

Multiple studies have reported technical success rates of more than 90% for TASC-II D lesions), ***(Yin et al., 2013)***, ***(Chen et al., 2010), (Baril et al., 2010).*** The chronic nature of PAD and the high restenosis rate in many patients with femoropopliteal lesions necessitate repeat interventions, which are an essential part of the long-term treatment**.** ***(Scheinert ,2012).***

Endovascular treatment for TASC II D lesions is safe and can be effectively performed with acceptable hemodynamic improvement. Though re-stenosis is very common, close surveillance and repeated intervention can resolve this problem.

TASC II D lesions were defined as chronic total occlusions of the SFA more than 20 cm and involving the popliteal artery or chronic total occlusions of the popliteal artery and proximal trifurcation vessels.

Aim of the work

This study aims to evaluate the vascular outcome of Endovascular management of the Superficial femoral artery occlusion (TASC II D)with critical lower limb ischemia at the Vascular surgery department in Maadi and kobry el kobba military hospitals.

SURGICAL ANATOMY AND EXPOSURE

Surgical anatomy of femoral region:

The femoral artery is the principal channel supplying blood to the lower extremity ***(Beirne et al., 2008).***

The boundary mark between the external iliac artery and femoral artery is the inguinal ligament.The artery lies just medial to midpoint of inguinal ligament. The femoral vasculature is bounded laterally by iliopsoas muscles**,** medially by reflected fibers of inguinal ligament (forming the lacunar ligament) and posteriorly by superior ramus ***(Beirne et al., 2008).*** **Figure (1)**

Just inside the abdominal wall ,the external iliac artery gives two small branches that run in a plane between the transversalis fascia and peritoneum ; the inferior epigastric artery and deep circumflex iliac artery ***(Beirne et al., 2008).***

In approximately 30% of the population have an obturator artery that arises from inferior epigastric artery rather than internal iliac artery. This aberrant vessel descends across the pectinate line adjacent to lacunar ligament(in only 3% of patient) that can be injured during graft tunneling at this position ***(Baril et al., 2010).***