Use of Preoperative Care Reduces Risk of Penile Prosthesis Infection

Thesis

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First thanks to **ALLAH** *to whom I relate any success in achieving any work in my life.*

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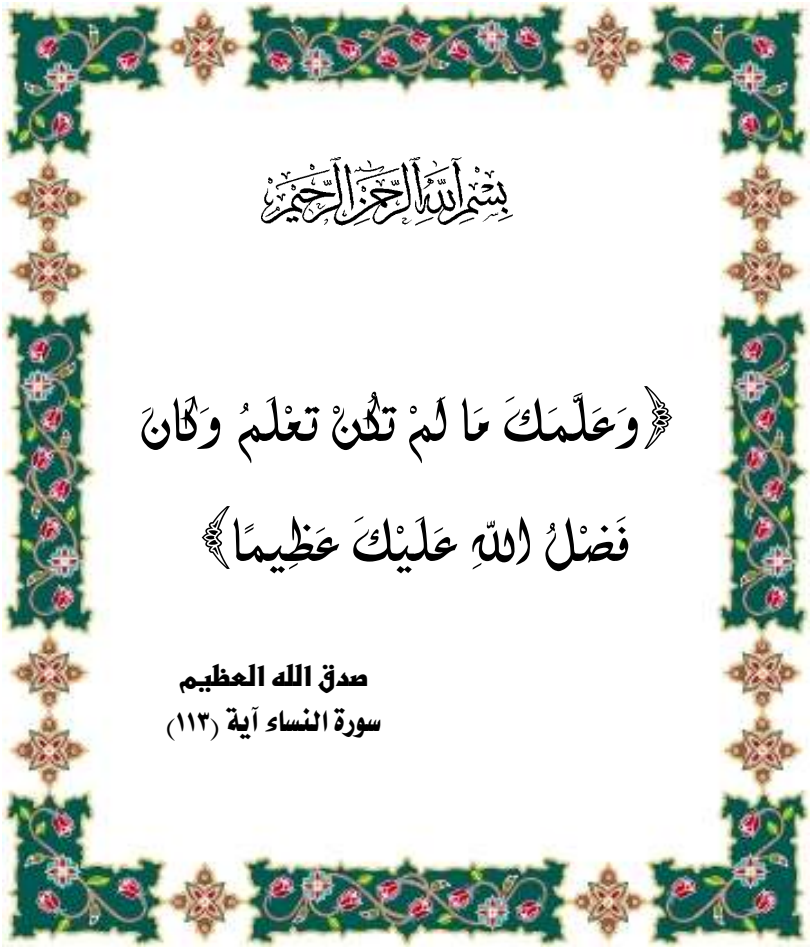
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فَضْلُ اللَّهِ عَلَيْكَ عَظِيمًا﴾
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List of Abbreviations

Abb.	Full term
ACTH	Adrenocoricotrophic hormone
AMS	American medical systems
ART	Androgen Replacement Therapy
ASC	Adult stem cells
BMSC	Bone marrow stem cells
cAMP	Cyclic adinosine monophosphate
CC-EMG	Corpus cavernosum electromyography
CDDS	Color duplex Doppler Ultrasonography
cGMP	Cyclic guanisine monophosphote
cNOS	Constitutive NOS
CNS	Central nervous system
CVOD	Corporal veno-occlusive dysfunction
DHT	Dihydrotestosterone
DICC	Dynamic infusion cavernosometry and cavernosography
DRE	Digital rectal examination
ED	Erectile dysfunction
EDITS	Erectile dysfunction inventory of treatment satisfaction
ETs	Endothelins
FDA	Food and Drug Administration
FSH	Follicle-stimulating hormone
GABA	Gamma -Amino Butyric Acid
GTP	Guanosine triphosphate
HDL	High-density lipoprotein
HIV	Human immunodefiency virus
ICI	Intra cavernosal injection
ICI	Intracavernosal injection
ICP	Intracavernosal pressure
IIEF	International Index of Erectile Function
IPP	Inflatable penile prosthesis

List of Abbreviations cont...

Abb.	Full term
ISSAM	International Society for the Study of the Aging Male
LDL	Low-density lipoprotein
LH	Luteinizing hormone
LMN	Lower motor neuron
MMAS	Massachusetts Male Aging Study
MPOA	Medial preoptic area
MPP	Malleable penile prosthesis
MS	Momentary squeeze
MUSE	Medical urethral system of erection
NA	Noradrenaline
NAION	Nonarteritic anterior ischemic optic neuropathy
NANC	Non adrenergic non cholinergic
NIH	National Institutes of Health
NO	Nitric oxide
NOS	Nitric oxide synthase
NPT	Nocturnal penile tumescence
ORT	One-touch release
PDE	Phosphodiesterase
PDE5	Phosphodiesterase type 5
PEP	Pharmacological erection program
PGE	Prostaglandin E
PSA	Prostate specific antigen
PVN	Paraventricular nucleus
REM	Rapid eye movement
SMCs	Smooth muscle cells
SPP	Semi-rigid penile prothesis
SST	Supersonic transport
TU	Transurethral
TXA2	Tromboxane A2
UMN	Upper motor neuron

List of Abbreviations cont…

Abb.	Full term
VCDs	Vacuum Constriction Devices
VEGF	Vascular endothelial derived growth factor
VIP	Vasoactive intestinal polypeptide

ABSTRACT

Infection is one of the most fearsome complications, having an incidence of 1-3 %, as reported in large series of implants. Infections can occur a few months after surgery and a typical sign is persistent, unchanging, or even increasing pain. The pain could be exacerbated by activating the device. Other signs of infection are penile or scrotal erythema, fever, purulent drainage from the wound, or skin erosion.

The aim of the study is to determine use of a mandatory checklist of pre-operative practices believed to reduce the risk of prosthesis infection in a sample of 40 patients with erectile dysfunction.

Key words: Vasoactive intestinal polypeptide- Phosphodiesterase- Transurethral- Supersonic transport- Luteinizing hormone- Massachusetts Male Aging Study

INTRODUCTION

Since the introduction in the treatment of erectile dysfunction (ED), phosphodiesterase type 5 (PDE-5) inhibitors have achieved widespread acceptance. Today PDE-5 inhibitors are considered as first-line oral pharmacotherapy in the management of ED ***(Hatzimouratidis et al., 2010).***

However, penile implants are still a popular choice, especially in patients who have failed to achieve erections by chemical enhancement, or who got fed up of ICI, who prefer a permanent solution to their condition or in those who have considerable scar tissue in the penis resulting in erection deformalities ***(Mulcahy, 1999).*** Despite its invasiveness, penile prostheses provide high satisfaction rates ***(Montague and Angermeier 2001).***

The types of prosthesis most commonly implanted are the two-piece and the three-piece inflatable device, and the soft and malleable prosthesis. In the last few years the three piece inflatable device has been used for preference, as it improves the erection with the most acceptable functional and cosmetical results ***(Minervini et al., 2006; Bettocchi et al., 2008).***

Engineering changes and designs revisions have reduced the mechanical malfunctions associated with inflatable penis prostheses to less than 5 % ***(Carson et al., 2000; Carson 2004).***

As penile prostheses are now expected to function for an average of 8-12 years post implantation, infection has become a more significant problem. The incidence of infection has been reported to range from 3 to 10% ***(Wilson and Delk, 1995)*** usually about 1-3 % in case of primary implantation, and about 10-13 % in case of revision or re-implantation ***(Abouassaly et al., 2004)***.

The traditional treatment of penile prosthesis infection is systematic and local antibiotics application with the complete removal of the device followed by reinsertion within 2–12 months. However, removal of the device can lead to corporeal fibrosis, making dilation of the corporeal bodies difficult and reinsertion of a new device more complicated ***(Brant et al., 1996; Mulcahy, 1999)***. To reduce the risk of device associated infections and to avoid the difficulties associated with late reinsertions many modifications have been developed such as antibiotic or hydrophilic coated devices and immediate replacement of the infected prosthesis (salvage techniques).

Aim of the Work

Is to determine use of a mandatory checklist of preoperative practices believed to reduce the risk of prosthesis infection in a sample of 40 patients with erectile dysfunction.

ANATOMY OF THE PENIS

Structure:

The human penis is a unique structure composed of multiple fascial layers which surround the three cylinders of erectile sinusoid ***(Hsu, 2006).***

The penis can be divided into three parts: **the root**, **the body**, and **the glans:**

The glans is the distal end of the corpus spongiosum, the edge of the glans overhangs the shaft of the penis, forming a rim called the corona **(Fig. 1)** ***(Skandalakis et al., 2004).***

The root of the penis is located in the superficial perineal pouch, and consists of the crura, bulb, ischiocavernosus and bulbospongiosus muscles. The crura and bulb of the penis contain masses of erectile tissue. Each crus is attached to the inferior part of the internal surface of the corresponding ischial ramus, anterior to the ischial tuberosity ***(Moore et al., 2007).***

The penile shaft (body) is composed of 3 erectile columns, the 2 corpora cavernosa and the corpus spongiosum, as well as the columns' enveloping fascial layers, nerves, lymphatics, and blood vessels, all covered by skin, The 2 suspensory ligaments, composed of primarily elastic fibers, support the penis at its base ***(Jordan et al., 2002).***