Evaluation of the role of post-operative Antibiotics Use after Lower Limbs Varicose Veins' Conventional Surgery as a Prophylactic Measure against Surgical Site Infection

Thesis

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Aknowlegments

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List of Abbreviations

Abb.		Full Term
CVD	:	Chronic venous disease
VV	:	Varicose veins
SSI	:	Surgical site infection
GSV	:	Great saphenous vein
FV	:	Femoral vein
CFV	:	Common femoral vein
CIV	:	Common iliac vein
IVC	:	Inferior vena cava
DVT	:	Deep venous thrombosis
SFJ	:	Saphenofemoral junction
SPJ	:	Saphenopopliteal junction
AASV	:	Anterior accessory saphenous vein
MDCT	:	Multidetector computed tomography
PDGF	:	Platelet derived growth factor
VEGF	:	Vascular endothelial growth factor
ECM	:	Extracellular matrix
EGF	:	Endothelial growth factor
CDC	:	Centers for disease control
MRSA	:	Methicillin resistant staph aureus
OR	:	Operating room
MSCRAMM	:	Microbial surface components recognizing adhesive molecule
RCT	:	Randomized controlled trial
CVI	:	Chronic venous insufficiency
BMI	:	Body mass index
NSAIDs	:	Non-steroidal anti-inflammatory drugs
RFA	:	Radiofrequency ablation

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Abstract

Background: Varicose veins (VV) surgery wounds are expected to be clean wounds that don't need a regimen of postoperative systemic antibiotics. Inspite of this, many surgeons in Egypt believe that they have to prescribe a short course of post-operative systemic antibiotics due to different cohort of patients we deal with, with different standards of life, hygiene & health awareness.

Aim: To study the value of using oral systemic antibiotic regimen after conventional surgery for VV in prophylaxis against surgical site infections (SSIs).

Subjects and methods: a randomized prospective study carried on sixty patients who were candidates for conventional VV surgery. Patients were randomized into two groups; first group (group A) received a preoperative single dose of antibiotic while the second group (group B) received pre and post-operative antibiotic regimen. All patients were subjected to full pre-operative examination and routine laboratory and radiological investigations. Patients with high risk factors for developing SSIs were excluded from the study to better evaluate the role of post-operative antibiotic regimen. Our primary endpoint was incidence rate of SSI in both groups while our secondary endpoints were developing hematoma or thrombophlebitis.

Results: Patients were mostly females (68.3%) with no significant difference in the gender distribution among the two groups, mean age was 35; body mass index (BMI) mean was 23.8 with significant decrease in mean BMI in group B. SSIs occurred in 3 (5%) out of the 60 patients. Out of these three patients two (6.7%) were in group A and one (3.3%) was in group B (P value= 0.55). 17 patients (28.3%) had hematoma, out of those 10 were in group A, while 7 were in group B (P value= 0.39). 3 patients (5%) had thrombophlebitis all of them were in group B (P value= 0.078). By using statistical analysis studies there was no significant correlation between using post-operative antibiotics and incidence of SSIs, hematoma and thrombophlebitis formation.

Conclusion: using of post-operative oral antibiotic regimen after conventional VV surgery doesn't directly affect the incidence rate of surgical site infection (SSI) in SSI low risk patients.

Keywords: Varicose veins, surgical stripping of great saphenous vein, surgical site infection.

INTRODUCTION

Varicose veins of the lower limbs are dilated, tortuous and elongated veins that are larger than 3 mm. Varicosities are manifestations of chronic venous disease (CVD), which includes various other abnormalities, such as telangiectasia, spider veins and reticular veins.[1]

According to American venous forum, an estimated 23% of United States adult population suffers from varicose veins and 5% of those suffer from skin changes and venous ulceration.[2]

Approximately one-third of men and women aged 18 to 64 years have varicose veins. The high prevalence leads to significant health care expenditure on treatments of varicose veins. Surgical treatment of varicose veins includes high ligation and great saphenous vein stripping, with or without phlebotomy. Although there are other less invasive modalities of treatment of VV like endovenous LASER ablation and endovenous radiofrequency ablation, conventional surgery is still used in many countries & in many selected cases. [3]

The occurrence of a surgical site infection (SSI) is one of the most common complications after surgery. SSI dissatisfies patients and providers, but it also increases the cost of surgical care and increases morbidity. [4]

SSI is recognized as a common surgical complication, occurring in about 2-5% of all surgical procedures. SSI represents the third most frequent nosocomial infection, accounting for 14-16% of all infections observed in hospitalized patients and up to 38% of those observed among surgical patients. [5]

In accordance with international data, the incidence of SSIs after vascular surgery in the groin are 3–44%, and deep groin infections with prosthetic material involvement are described in up to 6% of cases. The relationship between SSIs and morbidity correlates with extended hospital stay, severe limb ischemia, extremity loss, massive hemorrhage, systemic sepsis and septic embolization. [6]

Surgical site infection incidence rate after GSV ligation and stripping and phlebectomies is reported to be 8.2% with most cases of SSI being at the groin wound followed by calf and thigh wounds respectively. [7]

Aim of the Study

This study aims to evaluate the role of using post-operative antibiotics after varicose veins conventional surgery as a prophylactic measure against surgical site infection and to answer the question:

Do patients in Egypt need postoperative antibiotics following varicose veins surgery?

Anatomy of venous system of the lower limb

The veins of the LL are divided into 3 groups:

A- Superficial system, which lies outside the deep fascia.

B- Deep system, which lies within the deep fascia.

C- Perforating & communicating veins.[8]

A- The superficial system:

1) The great saphenous vein: (Saphena magna):

The GSV is considered the longest vein in the body as it begins from the medial side of the dorsal venous arch in the foot, and ascends up anterior to medial malleolus of the tibia then medial side of the leg, knee, and thigh to drain into the femoral vein at the saphenofemoral junction just inferior to the inguinal ligament, medial to the femoral artery.[9]

Terminal tributaries:

At the groin, Just below the sapheno-femoral junction, It receives several additional tributaries, including the lateral and medial femoral cutaneous veins, the external pudendal vein, superficial circumflex iliac vein and the superficial epigastric vein**.** [10]