Evaluation of Post-Operative Complications after Milligan- Morgan Hemorrhoidectomy versus Stapled Hemorrhoidopexy techniques

Thesis

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By

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

وقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ
ورَسُولُهُ والْمُؤْمِنُونَ

صدق الله العظيم

سورة التوبة آية (١٠٥)

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Atef Abed El Tawab Nafea

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List of Abbreviations

Vocabulary	Meaning
BMI	Body Mass Index
CH	Conventional Hemorrhoidectomy
DGHAL	Doppler guided Hemorrhoidal Arterry Ligation
DRE	Digital Rectal Examination
GTN	Gliceryl Tri-Nitrate
HAL	Hemorrhoidal Artery Ligation
HSH	Harmonic Scalpel Hemorrhoidectomy
IBD	Inflammatory Bowel Disease
IPD	In Patient Department
IRC	Infrared Coagulation
Laser	Light amplification by stimulated emission of radiation
MM Hemorrhoidectomy	Milligan Morgan Hemorrhoidectomy
NSAID	Non-Steroidal Anti-Inflammatory Drugs
OPD	Out Patient Department
P-value	Probability value
RBL	Rubber Band Ligation
SH	Stapler Hemorrhoidopexy
Std	Standard deviation
VAS	Visual Analogue Scale

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Introduction

Hemorrhoidal disease is one of the oldest illnesses known to mankind. It leads to significant pain, discomfort and poor quality of life. It is one of the common illnesses which affect mankind but it is difficult to give an accurate figure of prevalence because although many patients present with symptoms, many do not and some never bring it to notice of clinicians. The word hemorrhoid means flow of blood, the word pile means a ball, indicating two cardinal symptoms of this disease; bleeding per rectum and mass per anus **(Varun & Ramachandrer, 2017).**

Usually the cause and degree of hemorrhoids are taken into account when the surgeon decides to choose between the different treatment modalities **(NICE, 2011).**

The muscular fibers of the anal canal and anal sphincters lie within the connective tissue matrix. Studies have shown that, this matrix muscle ratio changes with age, showing an increase in connective tissue with age. This leads to loss of elasticity, allowing the anchoring muscle fibers that support the anal cushions & sphincter muscles to fragment resulting in prolapse of haemorrhoidal tissue. Other risk factors are constipation, straining and also diarrhea **(Hosking et al., 1989).**

Modern surgical practice has learnt from experience that surgery as an option is not preferable and better to be avoided in the 1st and 2nd degree haemorrhoids **(Jayaram et al., 2006).**

Surgical resection of hemorrhoids may be referred to the first era of operations ever performed. Despite of presence of diversity of surgical procedures, there are 2 basic operations; open (Milligan-Morgan) and closed (Ferguson) haemorrhoidectomy. In the open procedure which is the subject of our research, both of the skin-covered exterior component of the piles and the mucosal component are resected with ligation of the haemorrhoidal pedicle, taking into consideration to maintain the intervening mucosal bridges **(Brown, 2017).**

Updated progresses in the open procedure (Milligan Morgan) have involved diversity of approaches to eradicate the hemorrhoids including diathermy, lasers and ultrasonic dissectors. All of these approaches have possible complications, including pain, hemorrhage, retention of urine, infection, iatrogenic fissuring, tightness and incompetence. For this reason, maneuvers to minimize all of those complications have been prescribed. Metronidazole theoretically, minimizes pain by diminution of the possibility of micro- abscess formation **(Solorio-Lopez et al., 2015).**

Staplers as a mechanical adjunct to surgery replacing the traditional sutures have revolutionized operative procedures over the last decade worldwide due to its simplicity, ease and standardization to an anastomosis **(Baliga et al., 2016).** Stapler haemorrhoidectomy is an operator dependent technique involving cost issues as well

(Ribaric et al., 2011).

It has limited side effects and good postoperative results. Various studies in the past have demonstrated that this procedure has been superior to conventional surgical treatment of hemorrhoids **(Brown, 2017).**This procedure has also been associated with some hazards like postoperative pain or anal stenosis, but frequency is usually very less as compared to other methods **(Porrett et al., 2015).**

Aim of the work

Aim of the work is to detect and compare the post-operative complications (Pain, Bleeding and Anal Stenosis) after two hemorrhoidectomy techniques in common use for management of the clinically diagnosed third and fourth stage hemorrhoids; Milligan-Morgan (MM) Hemorrhoidectomy and Stapler Hemorrhoidopexy (SH).

Chapter 1:

Surgical Anatomy & Pathophysiology of Hemorrhoids

Epidemiology of Hemorrhoids:

The exact prevalence of symptomatic hemorrhoids is very hard to estimate as many sufferers do not seek medical advice for their complaints or depend on over-the-counter remedies, whereas others warrant other anorectal symptoms as being a result of hemorrhoids **(Guttenplan & Ganz, 2011).**

Although it has been estimated that half the population will be affected with symptoms of hemorrhoids illness at some interval of their lives **(Baker**, **2006),** the peak incidence of the illness seems to be in the 5^{th} to 7^{th} decades of human life. Development of hemorrhoids before the age of 20 is rare, and the risk is higher for white race than for black **(Ohning et al., 2009).** Pregnancy is accompanied by high risk for hemorrhoids, and the illness is slightly more in women than men **(Madoff & Fleshman, 2004).**

Anatomy, Physiology & Pathophysiology of Hemorrhoids:

It is universally agreed that knowledge of the anatomy, physiology and pathophysiology of hemorrhoids is indispensable to select the suitable therapy for hemorrhoids, to ameliorate therapy results, new techniques

for managing hemorrhoids, and preventing relapse **(Lohsiriwat, 2018).**

Applied Anatomy of the Anal Canal and Hemorrhoids:

The anal canal ranges 2.5-4 cm in length and surrounded with anal sphincter muscles i.e. external and internal sphincters. The sub-epithelial space of the anal canal is uneven. There are projections of anal mucosa, named "anal cushions" formed by loose connective tissue, smooth muscle, arteriole, venule, and anorectal vascular plexus (hemorrhoidal plexus). The formation of anal cushions is noticed since the late phase of embryonic life **(Morgado et al., 1988).** The functions of the anal cushions are to safeguard continence and to permit more anal expansion during evacuation. As anal sphincter muscles cannot fully close cavity of anal canal, the presence of anal cushions is fundamental to fill the gap within the sphincter this yields perfect anal continence. From the physiological point of view, anal cushions contribute to 15% of resting anal pressure. While defecation, external anal sphincter muscles relax and let decongestion of vascular plexus within the anal cushions **(Lestar et al., 1989).**

An arrangement of fibroelastic tissue and anal sub-epithelial smooth muscle reinforce the anal cushions. This sub-epithelial smooth muscle, named Treitz's muscle, is the continuation of external longitudinal muscle fibers of the rectum passing internally and caudally through the internal

anal sphincter to create a supportive framework of the submucosa vascular spaces **(Loder et al., 1994).**

Inside every anal cushion, there is an anorectal vascular plexus created by direct arterio-venous connection among the terminal branches of the superior, middle and inferior rectal arteries and their matching veins **(Aigner et al., 2009)** (Fig. 1).

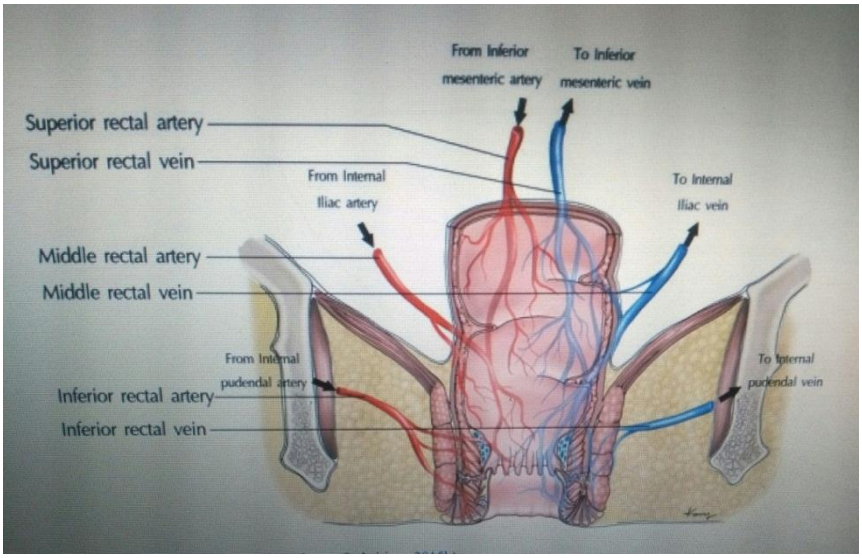

Fig. 1: Anatomy of ano-rectal vasculature (Lohsiriwat, 2015).