جامعه عين شمس
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قسم الجراحة العامة

تحديثات دور المنظار الجراحي في استئصال الأورام السرطانية بالمستقيم

مقدمه بحث علمي توطئه للحصول على درجه الماجستير في الجراحة العامة

مقدمة من
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استشاري الجراحة العامة
مستشفى المنصورة الدولي

2013

Ain Shams University
Faculty of Medicine
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Updates of Laparoscopic Management of Rectal Cancer

Essay
Submitted for Partial Fulfillment of the Master Degree in General Surgery

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2013

﴿ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴾

[البقرة:32]

Acknowledgement

First and foremost, I feel always indebted to **ALLAH,** the most kind and the most merciful.

I wish to offer my great gratitude to **Prof. Dr. Awad Hassan El-Kayal,** Professor of General Surgery, Faculty of Medicine, Ain Shams university hospital, for giving me the privilege of working under his supervision, who made the guidelines for this essay and for his generous support.

My deep gratefulness is to **Dr. Abdallah Magdy Mohamed Zaky,** Lectruer of General Surgery, Faculty of Medicine, Ain Shams University, for his guidance, discussion, generous support and careful supervision.

My deepest thanks and appreciation to **Dr. Ibrahim Mohamed El-Zayat,** Consultant of General Surgery, Mansoura International Hospital, for his continuous encouragement and careful supervision.

Mohamed Abdelhamid

2013

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Abbreviations

APR	Abdominoperineal resection
CARP	Conventional abdominoperineal resection
CBD	Common bile duct
CO2	Carbon dioxide
Hg	Mercury
IL-2	Interlukin 2
LAPR	Laparoscopic abdominoperineal resection
LAR	Laparoscopic anterior resection
LTME	Laparoscopic total mesorectal excision
NOTES	Natural orifice transluminal endoscopic surgery
OAPR	Open abdominoperineal resection
OAR	Open anterior resection
OTME	Open total mesorectal excision
RCT	Randomized controlled trials
TME	Total mesorectal excision
TNF	Tumor necrosis factor
USA	United states of America
VS	Versus

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Aim of the work

This work aimed to discuss recent clinical trials concerned with the role of laparoscopic resection of rectal cancer including laparoscopic total mesorectal excision, laparoscopic rectal resection with anal sphincter preservation of rectal cancer and laparoscopic abdomino-perineal resection of rectal cancer.

It also aimed to discuss the oncologic aspect dealing with laparoscopic rectal resection and to compare between laparoscopic and open rectal resection in rectal cancer.

Introduction

The last decade has seen a dramatic change in the management of rectal cancer. This has been delivered through more thorough and informed preoperative assessment, wide spread use of multimodal treatments including neoadjuvant therapy, and the introduction of minimally invasive procedures and improvement in rectal cancer surgery ***(Cunningham and Lindsey, 2011).***

Two revolutions in rectal surgery occurred during the past 20 years. The first was the introduction of total mesorectal excision (TME) in 1982, The second was the application of minimal invasive surgery for the treatment of rectal malignancies in the early 1990s ***(Dulucq et al., 2012).***

Minimally invasive surgery offers several important advantages to the cancer patients needing surgery: less bleeding, less trauma, less risk of incisional hernias, wound adhesions postoperative infection and quicker, less painful recovery. Even for patients with large abdominal and pelvic tumors, laparoscopic surgery may be still appropriate and superior to open surgery ***(Wernsing, 2012).***

One of the most controversial issues in minimally invasive surgery has been the implantation of laparoscopic technique for the curative resection of rectal malignancies initial concerns included the potential violation of oncologic principles the effect of carbon dioxide and the phenomenon of port site tumor recurrence. The long term survival after laparoscopy for rectal cancer is still unclear, especially for advanced rectal cancer requiring extended lymphadenectomy ***(Kitano et al., 2010).***

Although many studies have shown the benefits of laparoscopy for colonic cancer, only few studies have reported the advantages of laparoscopy for rectal cancer ***(Leung et al., 2011; Leroy et al., 2011).***

Laparoscopic Anatomy of Rectum

Anatomy is the cornerstone of any surgical operation. A thorough knowledge of the anatomic features of laparoscopic rectal surgery can reduce operative mistakes and complications ***(Chengyu et al., 2006).***

Identifying the ureter is the first important step in laparoscopic rectal surgery. We conventionally expose the left ureter. First, the white filmy adhesion between the lateral leaf of the mesosigmoid and the peritoneum in the left iliac gutter is snipped. Then, the lower loosely connective tissue is further dissected. The testicular (ovarian) vessel passes lateral to the ureter. The left ureter is often near the root part of the mesosigmoid. The left and right ureters go across the end of the common iliac artery and the origin of lateral iliac artery, respectively, at the pelvic entrance. Its peristalsis can be seen while the ureter is poked by dissecting forceps ***(Bretagnol et al., 2003).***

Fig. 1. The left ureter lies lateral to the ovarian vessel above the pelvic entrance ***(Chengyu et al., 2006).***

After entering the pelvis, it first descends along the lateral wall and then turns anteromedially at the level of the sciatic thorn. In the male, the ureter reaches the fundus of the bladder posteroinferior to the deferent duct. In the female, the ureter runs anteriomedially in the base of the broad ligament, crossing the uterine artery beneath the artery 2 cm lateral to the uterine cervix and then reaches the bladder wall. Because the right ureter is more lateral, it does not need to be exposed. In most circumstances, the right ureter can be seen going down at the pelvic entrance through the peritoneum, especially in non obese patients ***(Leroy et al., 2011).***

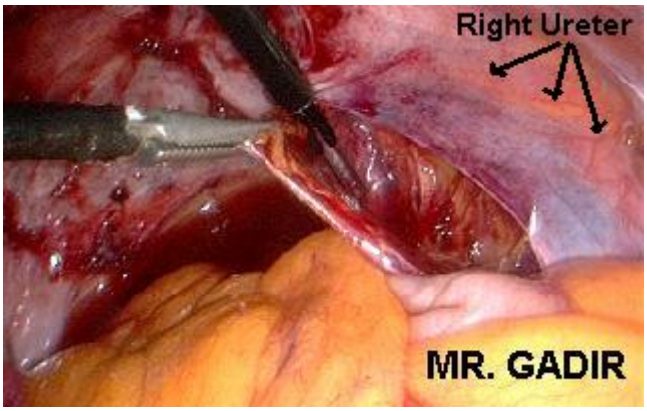

Fig. 2. The right ureter can be seen through the peritoneum ***(Gadir, 2004).***

The inferior mesenteric artery originates from the anterior wall of the lower part of the aorta at approximately the level of L3, 3 or 4 cm below the aortic bifurcation, and then running in a lower left direction. It divides into the left colic artery superiolateral, the sigmoid artery lateral, and superior rectal artery downward. When the assistant or the left hand of the operator elevates the upper part of the mesosigmoid using the grasper in the left superior direction, the inferior mesenteric artery will be drawn straight. Then, the pedicle of the inferior mesenteric artery can be generally seen. The root of the inferior mesenteric artery can easily be dissected at the base of the pedicle and then cut ***(Senagore et al., 2003).***