ROLE OF LAPAROSCOPY IN MANAGEMENT OF GASTRIC CARCINOMA

Essay

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ABBREVIATIONS

AFI: Autofluorescence imaging

AFP:alpha-fetoprotein

ASC: Adenosquamous carcinoma

BMI: body mass index

CA:carbohydrate antigen

Cag A:cytotoxin associated gene A

CEA:carcinoembryonic antigen

CENTRAL: Cochrane Central Register of Controlled Trials

CI: confidence interval

CLE: Confocal laser endomicroscopy

CT: computed tomography

DGCA: diffuse gastric cancer

EBV: Epstein Barr virus

ECL: enterochromaffin like

EEA:end-to-end anastomosis

EGC: early gastric cancer

EMR:endoscopic mucosal resection

ESD:endoscopic submucosal dissection

EUS: Endoscopic Ultrasonography

FAP:familial adenomatous polyposis

FDG: fluorodeoxy glucose

FU:fluorouracil

GCA: gastric cancer

GED: Gastric Epithelial Dysplasia

GI: gastrointestinal

GIA:gastrointestinal anastomosis

GIST: Gastrointestinal stromal tumours

GOJ: gastro-oesophageal junction

H.pylori: Helicobacter pylori

HCG: human chorionic gonadotropin

HD: high definition

HDU: high dependency unit

HNPCC:hereditary nonpolyposis colorectal cancer

I.V.: intravenous

IEE: Image Enhanced Endoscopy

IGCA: interstitial gastric cancer

IL:interlukin

JGCA: Japanese Gastric Cancer Association

LADG: Laparoscopic Assisted Distal Gastrectomy

LAG:laparoscopy assisted gastrectomy

LN: lymph node

LUS: Laparoscopic ultrasound

MAG: multifocal atrophic gastritis

MALT: mucosa associated lymphoid tissue

MD:Ménétrier's Disease

MDCT: Multidetector computed tomography

MDT:multidisciplinary team

MEN: multiple endocrine neoplasia

MRI: magnetic resonance imaging

MRT: Malignant rhabdoid tumor

MSI:microsatellite instability

MUC: Mucin, cell surface associated

NBI: Narrow-band imaging

NET: neuroendocrine tumours

ODG:open distal gastrectomy

OG:open gastrectomy

OR: odd ratio

P.O.: per os

PET:positron emission tomography

PGA: posterior gastric artery

PIVKA: Proteins Induced by Vitamin K Absence

PPG:pylorus preserving gastrectomy

PUD:peptic ulcer disease

QOL: Quality of life

RAS: Robot-assisted surgery

RCT: randomized controlled trial

SC: subcutaneous

SCC:squamous cell carcinoma

SD: standard deviation

SE:standard error

SG: subtotal gastrectomy

SL:staging laparoscopy

SPEM: Spasmolytic polypeptide–expressing metaplasia

TFF:trefoil factor

TG: total gastrectomy

TGF-α:transforming growth factor- α

TNM:tumour-node-metastasis

UIAC: International Union Against

WHO: world health organization

WMD: weighted mean difference

INTRODUCTION

Cancer still represents the third leading cause of death worldwide after cardiovascular and infectious diseases. In 2002, stomach cancer was the fourth most common cancer worldwide, with more than 900.000 new cases ***(Kamangar et al., 2006)***

However, the distribution of gastric cancer does not follow a strict geographical pattern. Indeed, low rate countries (e.g. India) are also reported within areas at highest risk (e.g. Asia). In all populations, the age-standardized risk is about 2-fold higher in males than in females. In addition, the female incidence rate at any age is equivalent to the male incidence rates for 10 years lower age. Except for Japan, where mass screening programs increased the 5-year survival rate up to approximately 60%, in most areas of the world only 1 out of 5 patients with gastric cancer is still alive after 5 years***(Fuccio et al., 2010).***

The wide acceptance of laparoscopic surgery in the world of general surgery since its introduction in 1988 has resulted in the application of numerous procedures for the minimally invasive approach, benefiting many patients as a result. In the field of gastric cancer, laparoscopic gastrectomy was rapidly adopted in Korea and Japan because it offers a number of patient benefits ***(Kim et al., 2010).***

Because of better early postoperative outcomes in comparison to conventional open surgery, laparoscopy-assisted gastrectomy is being accepted as a safe and feasible surgical procedure for early gastric cancer and the number of laparoscopy-assisted gastrectomy cases has increased rapidly. However, the indication for laparoscopic-assisted gastrectomy is still limited to early gastric cancer which is less likely to accompany lymph node metastasis due to the concern for incomplete lymph node dissection and the lack of long term outcome results. With advances in technique and surgeon experience, the extended application of laparoscopy-assisted gastrectomy for patients with gastric cancer, other than early gastric cancer without lymph node metastasis, has been suggested by several experienced surgeons ***(An et al., 2010).***

Laparoscopic gastrectomy with regional lymph node dissection for upper gastric cancer is considered to be a safe and curative procedure. An intracorporeal anastomotic technique using a conventional circular stapling device, as well as linear stapling devices, appears to be safe and reliable after laparoscopic gastrectomy for upper gastric tumors ***(Tanimura et al., 2007).***

Treatment of early-stage gastric cancer (stage 1 or 2) is changing to a large degree. Open gastrectomy, laparoscopic gastrectomy, and endoscopic mucosal resection all are feasible

options for the treatment of this disorder. However, most early-stage gastric cancers should be treated with open or laparoscopic gastrectomy with extraperigastric lymph node dissection because of possible lymph node metastasis ***(Kim et al., 2010).***

AIM OF THE WORK

The aim of this essay is to evaluate the role of laparoscopic surgery in the management of gastric carcinoma and the demonstrable decrease in the conversion and complication rates with increasing experiences. And to review the recent advances in laparoscopic gastrectomy and evaluate the new equipments, techniques, advantages, disadvantage of laparoscopic gastrectomy.