Role of Gastroscopy in Bariatric Surgery

Essay

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LIST OF ABBREVIATIONS

5-HT	5 Hydroxy Tryptamine
ASGE	American Society of Gastrointestinal Endoscopy
AW	Absolute Weight
AGB	Adjustable Gastric Banding
ACTH	AdrenoCorticoTropic Hormone
ADP	Air Displacement Plethysmography
ACC	American College of Cardiology
AHA	American Heart Association
ASMBS	American Society of Metabolic and Bariatric Surgery
ABS	Ankaferd Blood Stopper
APC	Argon Plasma Coagulation
BAROS	Bariatric Analysis and Reporting Outcome Score
BPD	Bilio-Pancreatic Diversion
BIB	BioEnterics Intragastric Balloon
BF%	Body Fat percentage
BMI	Body Mass Index
BTA	Botulinum Toxin A
CNS	Central Nervous System
CCK	Cholecystokinin
CT	Computarized Tomography
DM	Diabetes Mellitus
DASH	Dietary Approach to Stop Hypertension
DEXA	Dual Energy Radiographic Absorptiometry
DS	Duodenal Switch

DJBS	DuodenoJejunal Bypass Sleeve
EBT	Endoscopic Bariatric Therapy
EDEN	Endoscopic Internal Drainage with Enteral Nutrition
ERCP	Endoscopic Retrograde Cholangio-Pancreatography
EUS	Endoscopic UltraSound
EWL	Excess Weight Loss
FTO gene	Fat mass and Obesity associated gene
FNI	Fine Needle Injection
FDA	Food and Drug Administration
GBF	Gastro-Bronchial Fistula
GERD	GastroEsophageal Reflux Disease
GI	GastroIntestinal
GJA	GastroJejunal Anastomosis
GWAS	Genome Wide Association Studies
GLP-1	Glucagon-Like Peptide-1
H.pylori	Helicobacter pylori
IOP	Incisionless Operating Platform
IGB	Intra-Gastric Balloon
IHB	Intragastric Heliosphere Balloon
MRI	Magnetic Resonance Imaging
MC-4R	MelanoCortin -4 receptor
MSH	Melanocyte Stimulating Hormone
MGB	Mini Gastric Bypass
NHLBI	National Heart, Lung,and Blood Institute
NIH	National Institute of Health
NASH	Non-Alcoholic Steato-Hepatosis

NSAIDs	Non-Steroidal Anti-Inflammatory Drugs
OGD	OesophagoGastroDuodenoscopy
OIB	Oral Intra-gastric Balloon
OTSC	Over The Scope Clip
PPAR-Gamma	Peroxisome Proliferator-Activated Receptor-Gamma
POSE	Primary Obesity Surgery Endolumenal
POMC	Pro-OpioMelanoCortin
ROSE	Revisional Obesity Surgery Endolumenal
RYGB	Roux –en- Y Gastric Bypass
SEMS	Self Expanding Metallic Stent
SEPS	Self Expanding Plastic Stent
SAMSEN	Self-Assembling Magnets for Endoscopy
SAB	Semi-Stationary Antral Balloon
SMD	Silimed Gastric Balloon
SADI-S	Single Anastomosis Duodeno-Ileal Bypass+ Sleeve Gastrectomy
SNP	Single Nucleotide Polymorphism
SG	Sleeve Gastrectomy
TBWL	Total Body Weight Loss
TERIS	Transoral Endoscopic Restrictive Implant System
TOGa	TransOral Gastroplasty
UK	United Kingdom
US	United States
$	United States Dollar
VBG	Vertical Banded Gastroplasty
WHO	World Health Organisation

INTRODUCTION

Obesity - defined as a body mass index of 30 kg/m² or more – is a chronic, relapsing, debilitating, life-long disease, officially recognized by the World Health organization as a global pandemic.

Severe obesity is associated with harmful co-morbidities, including type 2 diabetes mellitus, hypertension, dyslipidemia, obstructive sleep apnea, polycystic ovarian syndrome, non-alcoholic steatohepatosis, asthma, back and lower limb degenerative problems, cancer and depression.

Traditional approaches to weight loss including diet, exercise and medication achieve no more than 5-10% reduction in body weight, with high recidivism rates.

Bariatric surgery achieves sustained long-term weight loss and causes remarkable improvement in co-morbidities. It is highly cost effective.

The international guidelines on patient suitability for surgery are a body mass index of >40 kg/m² or >35 kg/m² together with obesity-related diseaseAll patients should be assessed preoperatively by multidisciplinary team that includes:

dedicated surgeons, physicians, nutritionists, psychiatrists, nurses, and patient support staff. Endocrine causes must be excluded and co-morbidity must be ameliorated, so that operative risk is minimized.

The most commonly performed bariatric operations worldwide are Roux -en-Y gastric bypass, minigastric bypass with omega loop formation, adjustable gastric banding and sleeve gastrectomy. All of them are done laparoscopically. Less common procedures are vertical banded gastroplasty, biliopancreatic diversion and duodenal switch

The rationale for performing an oesophago-gastroduodenoscopy before bariatric surgery is to detect and/or treat lesions that might potentially affect the type of surgery performed, cause complications in the immediate postoperative period, or result in symptoms after surgery. The role of oesophago-gastroduodenoscopy in the preoperative evaluation of patients undergoing bariatric surgery may be based, in part, on the presence or absence of symptoms as reflux symptoms, dysphagia, and/or dyspepsia.

Multiple studies have demonstrated that routine endoscopy before gastric banding, vertical banded gastroplasty and Roux-en-Y gastric bypass can identify a variety of pathologies,

including hiatal hernia, oesopohagitis and gastric ulcers. The majority of patients in these studies were asymptomatic. Helicobacter pylori infection is present in 30-40% of patients scheduled for bariatric surgery, and preoperative testing in these patients may be useful.

Recent guidelines recommend preoperative upper endoscopy in all patients before bariatric surgery, regardless of the presence or absence of symptoms.

Endoscopic therapy for morbid obesity is desirable. Endoscopic placement of intragastric balloon has gained popularity as a temporary measure in an attempt to render severely obese patients fitter for surgery by initial weight loss.

Another role of endoscopy in the treatment of obesity is primary obesity surgery endolumenal (POSE) procedure, where gastric plications are created to approximate the anterior and posterior gastric walls to achieve functional volume reduction in the gastric body and fundus using transoral endoscopy.

Symptoms after bariatric surgery such as nausea, vomiting, and abdominal pain are common after bariatric surgery. Common presenting symptoms are not usually sufficient for

diagnosis and endoscopic evaluation is warranted in this patient population.

An endoscopy is the preferred strategy, unless there is a suspicion of leaks or fistulas, when contrast radiography may be more appropriate initially. It was concluded that therapeutic endoscopy is useful for management of postoperative bariatric surgical complications**.**

The majority of patients who undergo endoscopic evaluation of their symptoms postoperatively are found to have normal endoscopic findings.

Common abnormal findings include marginal ulcer, anastomotic stenosis, staple line disruption, erosive oesopohagitis, gastric ulcer, gastro-gastric fistula, and food impaction. There are no set guidelines on when to endoscopically evaluate patients after bariatric surgery. Thus recognizing symptoms postoperatively and being familiar with the spectrum of endoscopic abnormalities related to bariatric surgery will aid in early diagnosis and treatment.

Endoscopic dilation of anastomotic stricture can be performed safely and effectively.