Abstract

Background: A gastrinoma is a gastrin-secreting tumor.More than 80% of gastrinomas arise from a triangle defined as the union of the cystic and common bile duct superiorly, the neck and body of the pancreas medially, and the second and third portions of the duodenum inferiorly. Rarely, primary tumors as well occur in a variety of ectopic sites, including the body of the stomach, jejunum, peripancreatic lymph nodes, omentum, splenic hilum, liver, gallbladder, ovary, and the common bile duct. Over 50% of gastrinomas are malignant and can metastasize to regional lymph nodes and the liver.

Aim of the Work: The aim of the work is to evaluate the recent modalities in diagnosis and management of gastrinoma in pancreaticoduodenal triangle and how to avoid missing cases of gastrinoma.

Methodology: The management of gastrinoma has developed due to advances in medical therapies, diagnostic and imaging investigations and improvements in surgical technique. Gastrin has been identified as the humoral agent responsible for Zollinger-Ellison syndrome.

Conclusion: Zollinger-Ellison syndrome is characterized by severe peptic ulceratons, hypersecretion of gastric acid, and non-beta islet cell tumors of the pancreas. Further studies with longer follow-up are necessary to conclusively describe the natural history of this condition, identify factors predictive of recurrence and survival, and make categorical recommendations regarding treatment and to avoid missing cases of gastrinoma.

Keywords: Recent modalities, surgical management, pancreaticoduodenal triangle

Contents

List of Abbreviations

Abbrev.	Meaning
ACh	: Acetylcholine
AJCC	: American Joint Committee on Cancer
BAO	: Basal acid output
Ca	: Calcium
CBD	: Common bile duct
CT	: Computed tomography
DJ	: Duodenojejunal
EGD	: Esophagogastroduodenoscopy
EGF	: Epidermal growth factor
ENETS	: European Neuroendocrine Tumor Society
EUS	: Endoscopic ultrasound
FAP	: Familiar adenomatous polyposis
FDG	: Fluorodeoxyglucose
Fig.	: Figure
FSG	: Fasting Serum Gastrin
GCT	: Gastro-colic trunk
GDA	: Gastroduodenal artery
GEPNETs	: Gastroenteropancreatic neuroendocrine tumors
GERD	: Gastroeosophageal reflux disease
GI	: Gastrointestinal
GI NETs	: Gastrointestinal neuroendocrine tumors
GRP	: Gastrin releasing peptide
H2Rs	: Histamine H2 receptor
HA	: Hepatic artery

HDL : Hepatoduodenal ligament
HE : Staining Hematoxylin and eosin staining
HGF : Hepatocyte growth factor
HV : Hepatic vein
HV-IRG : Heptic vein- Immune Reactive Gastrin
IDS : Intra operative Duodenoscopy
IGF1 : Insulin-like growth factor-1
IMV : Inferior mesenteric vein
IOS : Intraoperative secretin test
IOUS : Intraoperative US
IPDVs : Inferior pancreaticoduodenal veins
IRG : Immune Reactive Gastrin
IV : Intra venous
IVC : Inferior vena cava
LGV : Left gastric vein
LS : Laparoscopic surgery
M cells : Microfold cells
MALT : Mucosa-associated lymphoid tissue
MEN : Multiple Endocrine Neoplasia
MEN I : Multiple Endocrine Neoplasia type 1
MRI : Magnetic resonance
NETs : Neuroendocrine tumors
NIH : National Institutes of Health
NSAID : Non-steroidal anti-inflammatory drug
PD : Pancreatoduodenectomy
PET : Positron emission tomography
PNETs : Pancreatic neuroendocrine tumors
PP : Pancreatic polypeptide

PPI : Proton pump inhibitor
PPPD : Pylorus-preserving pancreaticoduodenectomy
PPTD : Pancreaspreserving total duodenectomy
PRRT : Peptide receptor radionuclide therapy
Pts : Patients
PUD : Peptic ulcer disease
PV : Portal vein
RGEV : Right gastro-epiploic vein
RGV : Right gastric vein
SASI : Selective angiography with secretin injection
SMA : Superior mesenteric artery
SMV : Superior mesenteric vein
SPA : Splenic artery
SPDVs : Superior pancreaticoduodenal veins
SPECT : Single photon emission computed tomography
SRS : Somatostatin receptor scintigraphy
SST : Secretin Stimulation Testing
SV : Splenic vein
TNM : Tumor, node, metastasis
UGI : Upper gastrointestinal
UICC : Union for International Cancer Control
ULN : Upper limit of normal
US : Ultrasound
ZES : Zollinger-Ellison syndrome

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