Evaluating Diagnostic Significance of Magnifying Narrow Band Imaging Endoscopy in Various Gastric Lesions

Thesis

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تقييم مدي أهمية المناظير المكبرة التصوير الضيقة النطاق في تشخيص أمراض المعدة المختلفة

رسالة

توطئه للحصول علي درجة الدكتوراه
في الباطنة العامة

مقدمة من

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Ayman Gamil

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List of Appreviation

AMSP : Absent microsurface pattern
BEGPs : Benign epithelial gastric polyps
B-RTO : Balloon-occluded retrograde transvenous obliteration
CCD : Charge-coupled device
CE : Contrast enhancement
CLE : Confocal laser endomicroscopy
CS : Cowden's syndrome
CT : computed tomography
C-WLE : Conventional white light endoscopy
EC : Early carcinoma
EGF : Epidermal growth factor
EIS : Endoscopic injection sclerotherapy
EMR : Endoscopic mucosal resection
ERCP : Endoscopic reyrograde cholangiopancreatography
ES : Endoscopic Sclerotherapy
ESD : Endoscopic submucosal dissection
EUS : Endoscopic ultrasound
EVL : Endoscopic variceal ligation
FAP : Familial adenomatous polyposis
FGPs : Fundic gland polyps
FNA : Fine-needle aspiration
GAVE : Gastric antral vascular ectasia
GISTs : Gastrointestinal stromal tumours
GOV : Gastroesophageal varices
H. pylori : Helicobacter pylori
HDGC : Hereditary Diffuse Gastric Cancer
HGD : High-grade dysplasia
HHT : Hereditary haemorrhagic teleangiectasia
IF : intrinsic factor
IFPs : Inflammatory fibroid polyps
IGV : Isolated gastric varices
IM : Intestinal metaplasia

List of Appreviation *(Cont...)*

IMSP : Irregular microsurface pattern
IMVP : Irregular microvascular pattern
IPCLs : Intrapapillary capillary loops
LBC : Light-blue crest
MALT : Mucosa–associated lymphoid tissue lymphomas
MEN1 : Multiple endocrine neoplasia type 1
ME-NBI : Endoscopy: magnifuing Narrow-band imaging endoscopy
MS : Microsurface
MV : Microvascular
NBI : Narrow-band imaging
NIEC : New Italian Endoscopic Club
NPV : Negative Predictive Value
NSAIDs : Non steroidal anti-inflammatory drugs
PHG : Portal hypertensive gastropathy
PJS : PeutzeJeghers' syndrome
PPV : Positive predictive value
RMSP : Regular microsurface pattern
RMVP : Regular microvascular pattern
SE : Surface enhancement
SECN : Subepithelial capillary network
Sn : The sensitivity
Sp : Specificity
SPSS : Statistical Package for Social Sciences
TE : Tone enhancement
TIPS : Transjugular portosystemic shunt
TNF : Tumor necrosis factor
VS : Vessel plus surface classification system

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Introduction

In endoscopic examination, lesions are identified by changes in colour and irregularity of surface mucosa ***(Tajiri et al., 2002).***

Recent advances in technology enable us to obtain more detailed information during endoscopic procedures in order to provide the early diagnosis of malignant and premalignant changes of the mucosa with enhanced selection of appropriate treatments ***(Nakayoshi et al., 2004).***

Narrow-band imaging (NBI) is a novel endoscopic technique that may enhance the accuracy of diagnosis by using narrow-bandwidth filters in a red-green-blue (R/G/B) sequential illumination system ***(Tajiri et al., 2002).***

The depth of penetration into the mucosa depends on the wavelength used superficial for the blue band, deep for the red band and intermediate for the green band ***(Sambongi et al., 2000).***

This results in visualization of the vascular network and surface texture of the mucosa in an effort to improve tissue characterization, differentiation, and diagnosis in different inflammatory and neoplastic (premalignant and malignant) lesions of the esophagus, stomach and large bowel ***(Kuznetsov et al., 2006).***

These technologies are now being developed, and may reduce the incidence of unnecessary biopsies. Further, we expect that these observations will join with the field of the molecular biology in the future ***(Kumagai et al., 2006).***

Aim of the Work

To investigate mucosal and vascular patterns in various gastric lesions by using magnifying narrow band imaging endoscopy and indentify any relationship between those patterns and the relevant histological diagnosis

Advances in Upper G.I. Endoscopy

Development of UGI endoscopy:

The desire of physicians to inspect the hollow organs long preceded their ability to do so. However, endoscopy was impossible without adequate illumination. The nineteenth century saw many futile attempts at producing usable endoscopes. In 1806, for example, Bozzini's concept of the need for a Lichtleiter (light conductor) for an endoscope failed due to the lack of an adequate light source and the light conducting materials ***(Modlin, 2000).***

A proposed source of illumination was the Gasogen (alcohol and turpentine) lamp used by Desormeaux in 1853 for a cystoscope and by Kussmaul in 1868. Kussmaul also tested a rigid gastroscope in a sword swallower (Fig. 1) ***(Haubrich, 1987).***