ISSN: 2754-4931

Journal of Gastroenterology & Hepatology Reports

SCIENTIFIC Research and Community

Research Article

Open Access

Endoscopic Findings and Their Clinical Relevance in 208 Diagnostic Esophagogastroduodenoscopies Made at Guadalajara's Regional Military Specialty Hospital From September 2018 to March 2020

Viera Dórame Raúl Fernando*, Aguirre Sandoval Gloria Estefania

Guadalajara Regional Military Specialty Hospital: Calle Medrano #701 Colonia Valentín Gómez Farías Sector Reforma CP: 44450, Guadalajara, Jalisco; Mexico

SUMMARY

This technical review provides practical and basic information on the clinical relevance of proximal diagnostic digestive endoscopy in relation to pre- and post-endoscopic diagnoses, anatomopathological diagnosis of biopsies, choice of appropriate treatment and improvement of patients studied. It also highlights the importance of the prevention of esophageal-gastric cancer by previous macroscopic findings and its timely diagnosis, based on 208 reports of Esophagogastroduodenoscopies recorded in the general file database of the Guadalajara Regional Military Specialty Hospital between September 2018 and March 2020. Of the 208 selected reports, the most common pre-endoscopic diagnoses were dyspepsia, gastro-esophageal reflux disease, high digestive tract hemorrhage and dysphagia, which were mostly associated with endoscopic diagnosis of chronic gastropathy being the crucial anatomopathological diagnosis by demonstrating that the bacterium Helicobacter Pylori is primarily responsible for this gastropathy and in initiating early eradication treatment, which increases the chances of improvement and decrease in re-infection and progression to malignancy in the long term.

***Corresponding author**

Raúl Fernando Viera Dórame, Guadalajara Regional Military Specialty Hospital: Calle Medrano #701 Colonia Valentín Gómez Farías Sector Reforma CP: 44450, Guadalajara, Jalisco; Mexico; Tel: +52 5551059661; E-Mail: r_viera@live.com.mx

Received: October 27, 2020; **Accepted:** November 03, 2020; **Published:** November 19, 2020

Keywords: Esophagogastroduodenoscopy, Clinical Relevance, Endoscopic Findings, Proper Treatment, Clinical Improvement, Prevention.

Introduction

Proximal digestive endoscopy, also called esophagogastroduodenoscopy (EGD), is an invasive procedure that allows the exploration of the proximal digestive tract through direct visualization of the mucosa, making it possible to diagnose macroscopic lesions and, where indicated, therapeutic intervention on them (1-3).

It is the most commonly performed procedure in the gastroenterology service as it is indicated in the diagnostic evaluation of signs and symptoms of a wide variety of gastrointestinal disorders. However, it not only provides us with diagnostic data, but also informs us of the degree of infiltration and extent of injuries through histology obtained by endoscopic biopsy. This helps detect patients with metaplasia and/or dysplasia where the risk of progression to malignancy increases particularly [4,5].

As are the cases of Helicobacter pylori infection, which is considered a necessary factor for carcinogenesis in most patients who develop differentiated gastric adenocarcinoma and Barret's esophagus which is for esophageal adenocarcinoma.

So motivated mainly by knowing the relevance of esofagogastroduodenoscopia diagnoses in patients who attended the gastroenterology service of the Guadalajara Regional Military Specialty Hospital for 2 years, our research showed what pre-endoscopic diagnoses require this procedure for diagnostic corroboration and initiation of treatment, as well as why endoscopic diagnosis and biopsy intake influence the choice of appropriate drug treatment and clinical improvement of the patient short- and medium-term. In turn, it shows the importance of timely endoscopic diagnosis in patients with risk factors for esophageal-gastric cáncer [6,7].

Material and Methods

Our research design was a descriptive analysis with a quantitative approach.

It included patients with age ranges between 0 and 90 years who attended the external consultation area of the gastroenterology service at the Guadalajara Regional Military Specialty Hospital where diagnostic esophagogastroduodenoscopies were performed during September 2018 to March 2020 [8].

Patient data came from the digital clinical record of the Hospital General File.

We determine the sample size based on the STATS program™ 2.0, for a population of 452 patients, considering an acceptable maximum error of 5%, an estimated sample percentage of 50% and a desired confidence level of 95%, requiring 208 reports of diagnostic esophagogogastroduodenoscopies which were selected by generating random numbers through the same program [9].

Once each patient was identified, the information was collected retrospectively by studying the clinical records of each of the records.

Finally, a database was developed that included the patient's full name, sex, age, pre-endoscopic diagnosis, post-endoscopic diagnosis, anatomopathological diagnosis, treatment administered in hospitalization, prescription in external consultation by the gastroenterology service, post-endoscopy monitoring and short- and medium-term improvement, with which we were able to group the results according to the selected variables [10,11].

Table 1: Appropriate indications of proximal digestive endoscopy
Symptoms of proximal digestive tract disease (dispepsia)
Odinophagia
Dysphagia
Gerd
Persistent vomiting
Ulcerative syndrome
Gastric ulcer follow-up
Barret's esophagus tracking
Inexplicable iron deficiency anemia
High digestive hemorrhage
Caustic intake
Intake of foreign bodies
Food impact
Proximal adenomatous polyposis
Gastric adenomatous polyps
Search for unknown primary tumor
Systemic disease with possible proximal digestive tract condition
Evaluation of the patient with portal hypertension
Small bowel biopsy (suspected celiac disease)

Results

Of the 208 selected reports 127 were made in female patients (61%) 81 in male patients (39%) with age ranges between 0 and 90 years.

Among the appropriate pre-endoscopic diagnoses reported in the digital clinical record, which accounted for 89.8% of the total reports studied predominate: Dyspepsia (26.32%), Reflux disease gastro-esophageal (21.84%), High digestive tract hemorrhage (21.12%), and Dysphagia (7%) anaemia under study (3.6%), Systemic disease with probable involvement of the proximal digestive tract (3.52%), Barret's esophagus monitoring (1.44%), Cancer surveillance (1.12%), Search unknown primary tumor (0.96%), Evaluation of patients with portal hypertension (0.96%), Ulcerative syndrome (0.72%), Foreign body intake (0.48%), Persistent vomiting (0.48%) Odinophagia (0.24%). On the other hand, among the inappropriate pre-endoscopic diagnoses, which accounted for 10.2% of the total patients studied preponder: Background of funduplication (1.54%), Pharyngeal Globe (1.33%), Gastritis H.pylori associated (1.33%), and Hiatal Hernia (1.2%), occurring Oral intolerance (0.tm96%), Gastric metaplasia and dysplasia (0.72%), Halitosis (0.72%), Esophageal thrush (0.48%), Irritable colon syndrome (0.48%), Ascites under study (0.48%), Weight gain (0.48%), Chronic intake of EDCs (0.24%) esophagitis (0.24%) [12].

Table 2: Inappropriate or unpro demonstrated indications of proximal digestive endoscopy
Evaluation of chronic anemia in the absence of gastrointestinal symptoms, odd blood in faeces or iron deficiency
Follow-up of benign lesions (e.g. duodenal ulcers, esophagitis, metaplasia and gastric dysplasia)
Evaluation of primary metastatic carcinoma of unknown origin
Hiatal hernia evaluation
Pharyngeal Globe
Background history
Irritable colon syndrome
Weight gain
H.pylori-associated Gastritis
Oral intolerance
Esophageal thrush
Halitosis
Chronic intake of SAIDs
Ascites under study
Cancer surveillance in patients with:
Achalasia
Atrophrotic Gastritis
Pernicious anemia
A history of gastric surgery.

As for the correlation between pre-endoscopic, endoscopic and anatomopathological diagnoses we decided to focus on the 6 most common diagnoses of our research, which account for 83.4% of the total endoscopies reported.

Our first comparison found that the diagnosis of Dyspepsia was most commonly correlated with post-endoscopic diagnosis of Acute Gastropathy (17%), followed by normal-looking panendoscopy (15.55%), Chronic gastropathy (12.27%), Mild duodenitis (7.73%), Mild duodenum-gastric reflux5.63%), Severe duodenum-gastric reflux (5.19%), Atrophic pangastropathy (4.91%), Polyps (3.7%), Angels' esophagitis "a" (3.34%), Follicular gastropathy (2.57%), Hiatal hernia (1.85%) , Tubular gastric body (1.63%), Incomplete panendoscopy (1.63%), hemorrhagic erosive gastropathy (1.4%), Nodular gastropathy (1.2 35%), Open Hiatus (1.21%), Angels' "c" esophagitis (1.18%), Ulcers Forrest 3 (1.13%), Esophagitis "b" angels (1.04%), Severe duodenitis (0.86%), non-hemorrhagic erosive gastropathy (0.86%), Plastic lynx (0.81%), Retentionist stomach (0.81%), Angiodysplasia (0.81%), Trachealized esophagus (0.81%), Hypertensive portal gastropathy (0.81%). Esophageal varicose veins (0.72%), Diverticulums (0.54%), Non-specific duodenitis (0.54%), hemorrhagic erosive duodenitis (0.54%), Esophageal candidiasis (0.54%), Sigmoid esophagus (0.40%), Barret's esophagus (0.32%) and healing gastric ulcers (0.32%) [13].

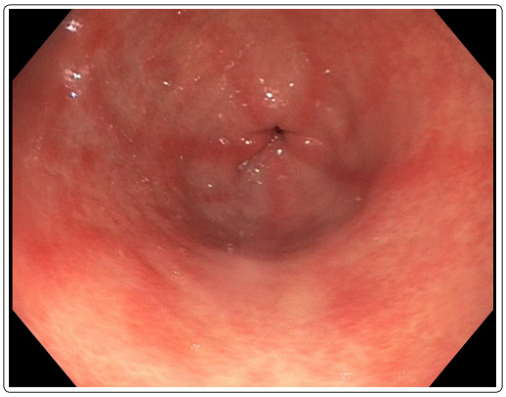

Image 1: Acute gastropathy

Regarding Gastroesophageal Reflux Disease he highlighted Chronic Gastropathy (14.98%), followed by normal-looking Panendoscopy (13.34%), Acute gastropathy (9.83%), Reflu severe duodenum-gastric reflux (5.38%), Polyps (5.28%), Mild duodenum-gastric reflux (3.48%), Esophagitis "a Angels (3.43%), Gastric Metaplasia (3.42%), Angels' Esophagitis "d" (3.41%), Mild Duodenitis (3.15%), Barret's (3%), Follicular gastropathy (2.93%), Hiatal hernia (2.6%), Tumors (2.45%), Irregular Z-line (2.12%) , Incomplete panendoscopy (1.96%), Esophageal varices (1.47%), Dismantled funduplication (1.47%), Angels' "c" esophagitis (1.46%), Non-hemorrhagic erosive gastropathy (1.3%), Angel esophagitis "b" (1.27%), Functional foundation (1.14%), Open hiatus (1.14%), Candidia esophageal gastropathy (1.14%), Amorphous gastropathy (0.98%), Gastric ulcers in healing (0.98%), Gastric erosions (0.81%), Schatzki Ring (0.98%), Gastric erosions (0.81%), Schatzki Ring (0.81%), Ectopic pancreas (0.65%), Gastric dysplasia (0.65%), Severe duodenitis (0.65%), Gastric narrowness (0.65%) , Hemorrhagic erosive Gastropathy (0.49%), Sigmoid esophagus (0.49%), Forrest Ulcers 3 (0.49%), Warty-looking injury (0.49%), Non-specific duodenitis (0.39%) and Gastric cavity increased in size (0.32%) [14].

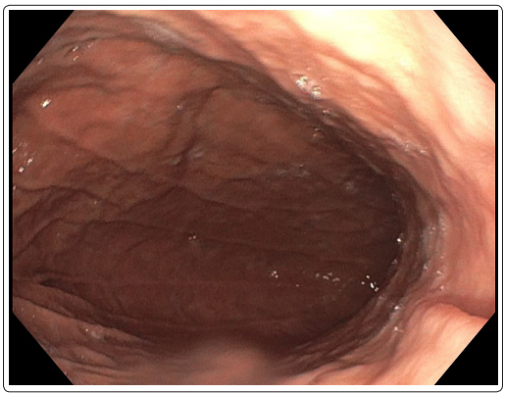

Image 2: Chronic gastropathy

With regard to high digestive tract hemorrhage predominated acute gastropathy (10.32%), followed by aroffic gastropathy (9.19%), Chronic gastropathy (8.97%), Ulcer For 3 (8.45%), Severe duodenum-gastric reflux (6.82%), Forrest ulcers 2 (5.52%), Gastric metaplasia (4 3%), Mild duodenitis (3.94%), Open hiatus (3.77%), Angels' esophagitis "d" (2.89%), Angiodysplasia (2.72%), Hernia hiatal (2.49%), Polyps (2.37%), Incomplete panendoscopy (2.37%), Follicular gastropathy (2.37%) , Mild duodenum-gastric reflux (2.19%), Pyloric retraction (2.1%), Normal-looking panendoscopy (2.1%), Dieulafoy injury (2.1%), Failed panendoscopy (2.1%), Tumors (2.1%), Scarring gastric ulcer (1.89%), Gastric erosions (1 .80%), Angels' "b" esophagitis (1.62%), Esophageal Varicose Veins (1.57%), Irregular Z-Line (0.94%), Barret's Esophagus (0.93%), Mallory Weiss Erosion (0.80%), Competent Foundation (0.62%), Sigmoid Esophagus (0.35%) and Intrathoracic esophagus (0.30%) [15].

Regarding Pre-Domino Dysphagia The Normal-Looking Panendoscopy (10.08%), followed by acute-looking Gastropathy (8.4%), Angels' "a" esophagitis (8.06%), Chronic-looking gastropathy (7.63%), Mild duodenum-gastric reflux (7%), Mild non-hemorrhagic ritis (7%), Mild non-hemorrhagic Gastritis (7.63%), Mild duodenum-gastric reflux (7%), mild non-hemorrhagic Gastritis (7%), mild non-hemorrhagic gastritis (6.51%), Severe duodenum-gastric reflux (5.55%), Hiatal hernia (4.82%), Angels' "d" esophagitis (4.61%), Schatzki Ring (3.75%), Polyps (3.16%), atrophical-looking gastropathy (3.16%) , Mild duodenitis (3.02%), Forrest ulcers 3 (2.8%), Adenoid hypertrophy (2.17%), Epibraic diverticulum (2.17%), Barret's esophagus (2.17%), Angel esophagitis "c" (1.95%), Gastric metaplasia (1.95%), Duodenitis severe (1.84%), esophageal varicose veins (1.72%), Open hiatus (1.44%), non-erosive mild Gastritis (1.08%), Functional funduplication (1.08%), Infiltrating neoplastic injury (1.08%), Irregular z-line (1.08%), Nodular gastropathy (0.86%) gastric erosions (0.86%) [16].

Regarding Anemia under study predominated Chronic gastropathy (25.06%) followed by Hernia hiatal (16.66%), normal-looking panendoscopy (12.5%), atrophical gastropathy (10.41%), Malignant tumor (8.32%), Angels' esophagitis "b" (6.41%), Malignant tumor (8.32%), Angels' esophagitis "b" 25%), Angels' "c" esophagitis (4.16%), Mild duodenum-gastric reflux (4.16%), Healing gastric ulcer (4.16%), Metaplasia (4.16%) and Severe duodenum-gastric reflux (4.16%). Finally, concerning systemic disease with possible proximal digestive tract condition, normal-looking panendoscopy (36.33%) followed by Acute Gastropathy (19.69%), Chronic Gastropathy (7.57%), Severe Duodenum-Gastric Reflux (6.10%), Epibraic Diverticulum (4.54%), Hiatal Hernia (4.54%), Plastic linitis (4.54%), Retentionist stomach (4.54%), Polyps (3.03%), Ulcera Forrest 3 (3.03%), Gastric ulcer in healing (3.03%) and Nasogastric tube esophagitis (3.03%) [17].

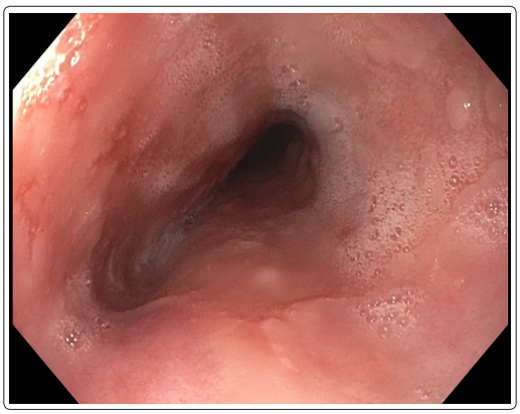

Image 3: Barret's esophagus Prague classification M7C6

Pre-endoscopic diagnoses mostly associated with chronic gastropathies by Helicobacter pylori were Dyspepsia with 33.96% and Gastro-Esophageal Reflux Disease with 24.47%, contrary to Barret's esophagus where Gastro-esophageal Reflux Disease with 50% and High Digestive Tube Hemorrhage predominated with 20%.

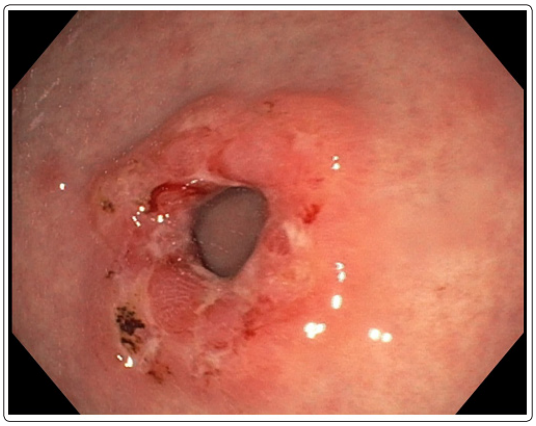

Image 4: Gastric adenocarcinoma

On the other hand, of the 10.57% reported by normal mucosa by endoscopy, 86.37% reported alterations in the histopathological study, predominating with 36.39% moderate chronic gastritis with activity associated with H. pylori.

The most common anatomopathological diagnosis reported in reports of total endoscopies was moderate chronic Gastritis associated with H. pylori (33.28%), followed by mild chronic Gastritis without activity or bacillary forms (14.32%), severe chronic Gastritis with H.pylori-associated activity (8.56%), mild chronic Gastritis with H.pylori-associated activity (8.4%), Complete intestinal metaplasia (3.92%), Chronic follicular Gastritis with activity associated with H.pylori (2.40%), moderate chronic Gastritis without activity or bacillary forms (2.16%), Acute esophagitis (1.76%), Polyp negative hyperplastics for neoplasms and/or dysplasias (1.76%), Gastric adenocarcinoma (1.68%), Peptic duodenitis (1.52%), Unaltered biopsies (1.12%), Bar esophagus negative duodenitis for neoplasms or dysplasias (0.96%), Severe chronic duodenitis (0.96%), Mild chronic duodenitis (0.88%), Moderate chronic duodenitis (0.48%), vocal cord papilloma (0.48%) , Ulcerated surface epithelium with congestion and bleeding of the sheet itself with reparative changes (0.48%), Gastric ulcers (0.32%), Gastric ulcer with acute abscedized inflammation (0.24%), Carcinoma moderately differentiated scaly (0.24%), Vascular hyperplasia (0.16%), Barret's esophagus with mild dysplasia (0.16%), Polypoid foveolar hyperplasia (0.16%) and High-grade dysplasia with severe chronic gastritis (0.16%). In turn, 11.52% were unable to take biopsies during the endoscopic procedure and the remaining 1.92% did not find the anatomopathological report in the digital system.
For pathologies at high risk of progression to malignancy, 50.64% who had a gastropathy associated with H. pylori 14.60% reported complete intestinal metaplasia, as well as 1.12% who had a diagnosis of Barret's esophagus 20% reported mild and high-grade dysplasia and the remaining 80% was negative for neoplasms and/or dysplasias.

After comparing the differences between the 3 diagnoses mentioned above we seek to correlate the clinical improvement of patients with post-endoscopy clinical follow-up and treatment administered by the gastroenterology service.

It was appreciated that 25.58% did not follow up on any external consultation, followed by 18.72% who attended 2 appointments in external consultation, 14.40% in which 1 appointment was reported in external consultation, 11.04% who reported 3 appointments in external consultation, 5.76% who attended 4 appointments in external consultation, 4.8% who recorded notes from 1 hospitalization, without appointments in external consultation, 4.32% who attended 5 appointments in external consultation, 3.86% reported 1 hospitalization prior to 1 and only appointment in external consultation, 1.44% that was recurrent in 4 groups including 2 hospitalizations, 6 appointments in external consultation, 4 appointments in external consultation after the second panendoscopy and no information in the digital system , 0.96% that was repetitive in 3 groups, reporting the first 5 appointments in external consultation after the second panendoscopy, the second 2 hospitalizations prior to 1 and only appointment in external consultation and the third 3 appointments in external consultation with 1 subsequent hospitalization; finally 0.48% iterative in 5 groups which reported: 7 appointments in external consultation, 8 appointments in external consultation, death in hospitalization, 1 hospitalization after the second panendoscopy with 1 appointment in external consultation, 1 hospitalization after their second panendoscopy with 2 appointments in external consultation and 1 hospitalization prior to 2 appointments in external consultation [18].

Regarding treatment 41.96% received drugs to eradicate H.pylori at their first consultation. After 25.44% who were treated with proton pump inhibitors, either alone or in conjunction with spasmolytics, gastro-prokinetics, antispasmodics, laxatives, anti-ulceratives and/or salicylates, 24.92% did not receive a specific or personalized pharmacological treatment secondary to inadequate monitoring in external consultation, 3.84% required surgical treatment, 1.92% received monotherapy with antiulcers, H2 antagonists or gastro-prokinetics, in 1.44% the clinical record of patients was not found and in the remaining 0.48% pharmacological treatment is unknown because it was treated in another hospital.

It should be noted that 8.16% received eradication treatment for H.pilory from or after the second consultation, so in addition to the percentage of the group that received eradication treatment from the first consultation gives us a total of 50.12% of our study group.

Finally, in terms of clinical improvement, it was observed that 37.12% of the total had partial improvement with the treatment administered, followed by 22.08% in those who did not find follow-up record in the digital system and 21.12% who had remarkable cynic improvement, even until they were asymptomatic with pharmacological treatment and discharged from the gastroenterology service. The remaining percentage corresponding to 19.68% includes patients in whom clinical improvement by death could not be assessed, for not going to scheduled appointments for service, for a failed pre-procedure or because they are referred to another service of the Regional Military Specialty Hospital of Guadalajara or even the Central Military Hospital, in Mexico City.

Discussion

Dyspepsia was the pre-endoscopic symptom that mostly affected our sample, followed by gastro-esophageal reflux disease, high digestive tract hemorrhage and dysphagia, which is consistent with most bibliographies specifying that the study of these pathologies is part of the main indications for the realization of high digestive tract endoscopy in our country.

Moderate chronic gastropathy is the endoscopic diagnosis especially associated with these pathologies and in turn the anatomopathological diagnosis shows us that the bacterium Helicobacter Pylori is primarily responsible for this gastropathy and the symptomatology of 50.12% of the reported cases.

Although our study suggests that the incidence of adenocarcinoma in patients with Barret Esophagus and H. pylori-associated gastropathy at Guadalajara Regional Military Specialty Hospital is minimal, endoscopic follow-up of patients with anatomopathological reports of metaplasia and dysplasia could decrease future mortality by detecting early-stage tumors.
The treatment prescribed by the gastroenterology service was correct due to each corresponding pathology according to clinical practice guidelines. However, a quarter of our population made modifications after the first appointment as the patient persisted with symptomatology or the pathology report was recorded in the system.

In terms of follow-up, there was no commitment on the part of 41.42% of patients, by not going to scheduled consultations at the service or going to only an appointment in external consultation, which generated no or partial improvement in the short and medium term.

Patients who debuted with gastroesophageal tumors during the endoscopic procedure had a life expectancy of no more than 3 months with no clinical improvement.

Conclusion
EGD plays an important role in the diagnostic assessment of diseases of the high digestive tract and its complications in the Mexican population. In turn it is considered the most effective tool for the secondary and tertiary prevention of esophageal-gastric cancer, by detecting precancerous lesions such as Barret's esophagus and those generated by Helicobacter pylori, so follow-up in service is crucial to proper monitoring, however, many patients have unrealistic expectations of healing, resulting in abnormal behaviors that prolong and "adorn" the constellation of symptoms causing poor attachment to treatment and long-term partial improvement in most cases studied.

References
1. Curso Intensivo MIR Asturias (2015) Aparato digestivo: gastroenterología, hepatología, cirugía general / con la colaboración de Dr. Carlos Téllez Egea.
2. Pellisé M, Díaz Tasende J, Balaguer F, Bustamante-Balén M, Herráiz M, et al. (2012) Revisión técnica sobre endoscopia avanzada diagnóstica en pacientes con alto riesgo de cáncer colorrectal. Gastroenterología Y Hepatología 35: 278-292.
3. Moreira V, San Román A (2008) Endoscopia digestiva alta. Revista Española De Enfermedades Digestivas 100: 437.
4. Fábregas Rodríguez C ENDOSCOPIA SUPERIOR DIAGNÓSTICA. PRINCIPIOS BÁSICOS Y TÉCNICA.
5. Valdovinos Andraca F, Elizondo Rivera J, de la Torre Bravo A, Abdo Francis J (2015) Segundo consenso mexicano para la Enseñanza de la endoscopia gastrointestinal. Endoscopia 27: 14-24.
6. Gómez Zuleta, Martín Alonso, Ruiz Morales, Óscar Fernando, Riveros Javier (2014) Utilidad de la endoscopia digestiva alta diagnóstica en pacientes menores de 18 años. Revista Colombiana de Gastroenterología 29: 112-116.
7. Roesch F, Ruiz I, Remes J (2010) Atlas de gastroenterología (1st ed.). Alfil.
8. Lacy B, Mearin F, Chang L, Chey W, Lembo A, et al. (2016) Bowel Disorders. Gastroenterology 150: 1393-1407.
9. Bernal F, Fajardo G (2010) CLÍNICAS QUIRÚRGICAS DE LAACADEMIA MEXICANA DE CIRUGÍA VOLUMEN XV ENDOSCOPIA EN EL SIGLO XXI. Alfil, S. A. de C. V.
10. Barba K, Castellanos O Esófago de Barret Esofagitis de otras causas CA de esófago. Presentation.
11. Roesch F, Remes J, Ramos A (2008) GASTROENTEROLOGÍA CLÍNICA (2nd ed.). Alfil, S. A. de C. V.
12. Tanimoto M, Zamora L, Grajales G (2018) NUEVAS FRONTERAS EN LA ENDOSCOPIA DIAGNÓSTICA Y TERAPÉUTICA (1st ed.). Asociación Mexicana de Gastroenterología.
13. Ginsberg G, Kochman M (2005) Endoscopia y radiología gastrointestinal. Elsevier.
14. Riquelme A, Arrese M, Espino A, Ivanovic-Zuvic D and Latorre G (2015) MANUAL DE GASTROENTEROLOGÍA CLÍNICA. 2nd ed. Santiago de Chile: Pontificia Universidad Católica de Chile.
15. Yamada T (2008) Manual De Gastroenterología. 3rd ed. Barcelona: Lippincott Williams & Wilkins. Wolters Kluwer Health.
16. Dolz Abadía C and Brotons García A (2018) Programa De Formación En Endoscopia Digestiva Básica Para Médicos Internos Residentes De La Especialidad De Aparato Digestivo. Majadahonda. Madrid: Ergon.
17. Qayed E (2017) SLEISENGER AND FORDTRAN's GASTROINTESTINAL AND LIVER DISEASE REVIEW AND ASSESSMENT. 10th ed. Philadelphia: Elsevier, Inc.
18. Feldman M, Friedman L and Brandt L (2008) Sleisenger Y Fordtran, Enfermedades Digestivas Y Hepáticas. 8th ed. Madrid: Elsevier, Inc.