ENDOSCOPIC VERSUS HISTOPATHOLOGICAL DIAGNOSIS OF PAN-GASTRITIS IN PATIENTS WITH CHRONIC GASTRIC DYSPEPSIA

By

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ABSTRACT

Background: Dyspepsia is a clinical syndrome including manifestations related to the upper gastrointestinal tract. Options for evaluating dyspeptic patients include therapeutic trials, testing for Helicobacter pylori, upper gastrointestinal (UGI) radiography, and endoscopy.

Objective: To compare the endoscopic and histopathologic diagnosis of gastritis in patients presented with chronic gastric dyspepsia to evaluate the relative frequency and pattern of different types of gastritis in patients presented with chronic gastric dyspepsia.

Patient and method: Prospective cross-sectional study on 120 patients with chronic dyspepsia more than 8 weeks. All patients underwent gastroscopy. The findings of gastric inspection were recorded for all patients. Biopsy specimens were taken. Two from the anterior and posterior antrum, two from the anterior and posterior body, and two from any additional area of abnormality. Diagnostic criteria were applied to histological features and each histopathological parameter (chronic inflammation, activity, atrophy, intestinal metaplasia and H. pylori density) were graded for assessment of their severity as 0= absent, 1= mild, 2=moderate or 3= severe in the corpus and antrum.

Results: Endoscope revealed normal gastric mucosa in 33 patients (27.5%), gastritis in 64 patients (53.3%) and other lesions in 23 patients (19.2%). As regard gastritis, there was edema in 61 patients (95.3%), erythema in 45 patients (70.3%), atrophy in 10 patients (15.6%) and mucosal nodularity in 10 patients (15.6%). As regard location of gastritis, it was pan-gastritis in 44 patients (68.8%), Antrum predominant gastritis in 10 patients (15.6%) & corpus predominant gastritis in 10 patients (15.6%). As regard other lesions, there was Duodenal ulcer in 7 patients (30.4%), peptic ulcer in 3 patients (13%), esophagitis in 2 patients (8.7%), erosive gastritis in 4 patients (17.4%), upper GIT suspecting malignancy in 2 patients (8.7%) and hiatal hernia in 5 patients (21.7%). Histopathology results were Normal in 18 (18.6%), Chronic inflammation in 79 (81.4%), Neutrophilic infiltration in 60 (61.7%), Glandular atrophy in 10 (10.3%), Intestinal metaplasia in 3 (3.1%) and H. pylori density in 47 (48.5%). Gastritis was detected by Endoscopy in 64 (53.3%) and in 79 (81.4%) by histopathology. This difference was statistically significant (p-value: 0.014).

Conclusion: The prevalence of gastritis among the dyspeptic patients is very high since we observed endoscopically gastritis in 64 patients (53.3%) and other lesions in 23 patients (19.2%). The concordance between endoscopic findings and histopathological diagnosis of gastritis was (81%). High prevalence of H.Pylori among the dyspeptic patients (48.5%). Gastritis was better detected by histopathology.

Keywords: Endoscopy, Histopathology, Pan-gastritis, Dyspepsia.

INTRODUCTION

Dyspepsia is a clinical syndrome including manifestations related to the upper gastrointestinal tract (GIT), which may include acute, chronic, or recurrent pain or discomfort. Other associated symptoms include fullness, early satiety, and bloating, burning, belching, nausea, retching, and vomiting. It is generally categorized into functional and organic dyspepsia *(Drossman and Dumitrascu, 2010)*. The most common causes of organic dyspepsia include peptic ulcer disease (PUD), gastritis, hepatobiliary disorders, gastroesophageal reflux disease (GERD) and malignancy. The burden of dyspepsia on the daily medical service is huge, because its prevalence in the general population varies from 25% to 40% and accounts for 5% of general clinics visits *(Al-Nuaimya and Faisalb, 2019)*.

In patients with dyspepsia who are investigated, major causes include medications, functional dyspepsia, chronic peptic ulcer disease (PUD), and malignancy. Less likely causes include pancreatic and hepatobiliary tract disease, motility disorders, infiltrative diseases of the stomach (e.g., eosinophilic gastritis, Crohn's disease, sarcoidosis), celiac disease, intestinal angina, small intestine bacterial overgrowth (SIBO), metabolic disturbances (e.g., hypercalcemia, heavy metal), diabetic radiculopathy, hernia, and abdominal wall pain *(Browning and Travagli, 2011)*.

Gastric acid plays an important role in the pathophysiology of Functional dyspepsia. We hypothesize that initial contact of gastric acid with the vagal nerve terminal occurs in the background of a leaky mucosa *(Samal et al., 2015)*.

Diagnostic evaluation of a patient with dyspepsia is based on the presence or absence of alarm features, patient age, and the local prevalence of Helicobacter pylori (H. pylori) infection *(Hunt et al., 2011)*. Options for evaluating dyspeptic patients include therapeutic trials, testing for Helicobacter pylori, upper gastrointestinal (UGI) radiography, and endoscopy. Once the decision has been made to investigate, the diagnostic test of choice is endoscopy *(Gado et al., 2013)*. Endoscopy alone is insuf-ficient because it may miss serious mucosal lesions in about 15 to 30% of cases that can be picked up later on by histological examination. Biopsy is convenient procedure for accurate assessment and diagnosis of premalignant gastric lesions. Moreover, the biopsy is important for identifying and grading various mucosal pathologic lesions *(Dawod and Emara, 2016)*.

The aim of our study was to assess the diagnostic value of endoscopical findings compared to histopathological diagnosis in dyspeptic patients.

PATIENTS AND METHODS

A prospective cross-sectional study on 120 patients complaining of chronic gastric dyspepsia more than 8 weeks. The study was carried out conducted in Air Force General Hospital. All patients underwent gastroscopy. Patients were selected randomly over a period of six months started from the first of June 2019 to the end of December 2019, from endoscopy units in Air Force General Hospital. Dyspepsia was defined as the presence of one or more of the postprandial fullness, early satiation, or epigastric pain or discomfort for the last 8 weeks.

Inclusion criteria: All Male and female subjects, 18 years of age or more and less 60 years, complaining of chronic gastric dyspepsia more than 8 weeks.

Exclusion criteria: included patients with Age under 18 years and above 60 years, diabetic, chronic diseases, e.g. chronic liver disease and chronic kidney diseases, Intake of proton. Pump inhibitors, histamine type 2 receptor antagonists, and H. pylori eradication therapy in the past month, with history of alcohol consumption of more than 20gm/day and Patients who had undergone gastric surgery.

Methodology: All patients were subjected to complete history taking, which include history of other comorbid conditions such as DM, Cardiac disease, and renal failure. History of drug intake was taken. Full Clinical Examination included manifestations of chronic diseases. Blood samples were collected from patients and submitted to Complete blood picture (CBC): hemoglobin concentration (Hb %), red blood cells (RBCs), white blood cells (WBCs), platelet count. Liver profile: alanine aminotransferase (ALT), aspartate aminotransferase (AST), albumin, total bilirubin & direct bilirubin, prothrombin time and INR. Renal function tests: serum creatinine and urea.

Endoscopic diagnosis was one using sterile upper gastrointestinal video scope after good preparation of the patient. An endoscopic examination was performed after an overnight fast. All endoscopies were carried out using Olympus GIFQ-40, under local xylocaine spray of the throat. The findings of gastric inspection were recorded for all patients. According to the Sydney classification of endoscopic abnormality *(Tytgat, 1991)*, the following endoscopic mucosal features were defined: erythema (punctate and confluent), oedema, exudate (punctate and confluent), friability, flat and raised erosions, rugal hyperplasia, atrophy, visibility of the vascular pattern, intramural bleeding spots, and nodularity (fine and coarse). Combinations of these mucosal changes with subjective assessment of severity as mild, moderate, or severe were used to classify endoscopic gastritis into three categories. Patients were considered endoscopically normal if the gastric mucosal was pink in color, smooth and lustrous.

Histological analysis: Biopsy specimens were taken: two from the anterior and posterior antrum, two from the anterior and posterior body, and two from any additional area of abnormality. Specimens for histological analysis were placed in 10% formalin solution and routinely processed. Serial sections of 4μm thickness were cut and stained by: Hematoxylin and Eosin (H&E) for histopathological assessment and Modified Giemsa stain for detection of H. pylori, which was stained blue to purple.

The histopathological features were reported according to the Sydney classification by one histopathologist, who was blinded to the clinical and endoscopic findings but was informed about the gastric region where each biopsy specimen had been obtained. Diagnostic criteria were applied to histological features and each histopathological parameter (chronic inflammation, activity, atrophy, intestinal metaplasia and H. pylori density) were graded for assessment of their severity as 0= absent,

1= mild, 2=moderate or 3=sever in the body and antrum.

The study was approved by the local Ethics Committee, Faculty of Medicine, and Al-Azhar University. All subjects involved in the current study were informed about the nature and details of the current work and a written consent was obtained for each participant.

Data Analysis: Data were analyzed using Statistical Program for Social Science (SPSS) version 18.0. Quantitative data were expressed as mean ± standard deviation (SD). Qualitative data were expressed as frequency and percentage. The following tests were done: Chi-square (X2) test of significance was used to compare proportions between two qualitative parameters. P-value <0.05 was considered significant.

RESULTS

Age range was 18-60 years. There were 10 patients (8.3%) < 30 years, 53 patients (44.2%) 31 – 40 years, 45 patients (37.5%) 41 – 50 years and 12 patients (10%) > 50 years. 74 were males (61.7%) and 46 were females (38.3%). Hb ranged between 9.7 g/dl and 13.4 g/dl. WBCs range was 4.2-0.5 (x103/ul). PLTs range was 170- 235 (x103/ul). ALT range was 11-35 (U/L). AST was 14-38 (U/L). Urea 17-36 (mg/dl). Creatinine range was 0.7-1.5 (mg/dl) **(Table 1)**.

Table (1): Description of age and sex of all studied patients

Parameteis		Studied patients (N = 120) Mean ±SD
Age (years)		34.7 ± 15.7
Sex	**Male**	74 (61.7%)
	Female	46 (38.3%)
Hb (g/dl)		11.7 ± 1.3
WBCs (x10³/ul)		6.4 ± 1.4
PLT (x10³/ul)		210.4 ± 45.8
ALT (U/L)		24.7 ± 10.7
AST (U/L)		32.6 ± 11.6
Urea (mg/dl)		25.3 ± 9.4
Creatinine (mg/dl)		1.12 ± 0.5

The description of endoscopic results of all studied patients. Endoscope revealed normal gastric mucosa in 33 patients (27.5%), gastritis in 64 patients (53.3%) and other lesions in 23 patients (19.2%). As regard gastritis, there was edema in 61 patients (95.3%), erythema in 45 patients (70.3%), atrophy in 10 patients (15.6%) and mucosal nodularity in 10 patients (15.6%). As regard location of gastritis, it was pan-gastritis in 44 patients (68.8%), Antrum predominant gastritis in 10 patients (15.6%) & corpus predominant gastritis in 10 patients (15.6%). As regard other lesions, there was Duodenal ulcer in 7 patients (30.4%), peptic ulcer in 3 patients (13%), esophagitis in 2 patients (8.7%), erosive gastritis in 4 patients (17.4%), upper GIT suspecting malignancy in 2 patients (8.7%) and hiatal hernia in 5 patients (21.7%) **(Table 2)**.

Table (2): Description of endoscopic results of all studied patients

Parameteis		Studied patients (N = 120)	
Endoscopic results	Normal gastric mucosa	33	27.5%
	Gastritis	64	53.3%
	Other lesions	23	19.2%
Pan-gastritis (n = 64)	Edema	61	95.3%
	Erythema	45	70.3%
	Atrophy	10	15.6%
	Mucosal nodularity	10	15.6%
Location of gastritis	Pan-gastritis	44	68.8%
	Antrum predominant gastritis	10	15.6%
	Corpus predominant gastritis	10	15.6%
Other lesions (n = 23)	Duodenal ulcer	7	30.4%
	Peptic ulcer	3	13%
	Esophagitis	2	8.7%
	Erosive gastritis	4	17.4%
	Upper GIT suspecting malignancy	2	8.7%
	Hiatal hernia	5	21.7%

The description of symptoms of all studied patients. There was heart burn in 96 patients (80%), nausea in 72 patients (60%), Epigastric pain in 84 patients (70%), early satiation in 72 patients (60%) and vomiting in 48 patients (40%) **(Figure 1)**.
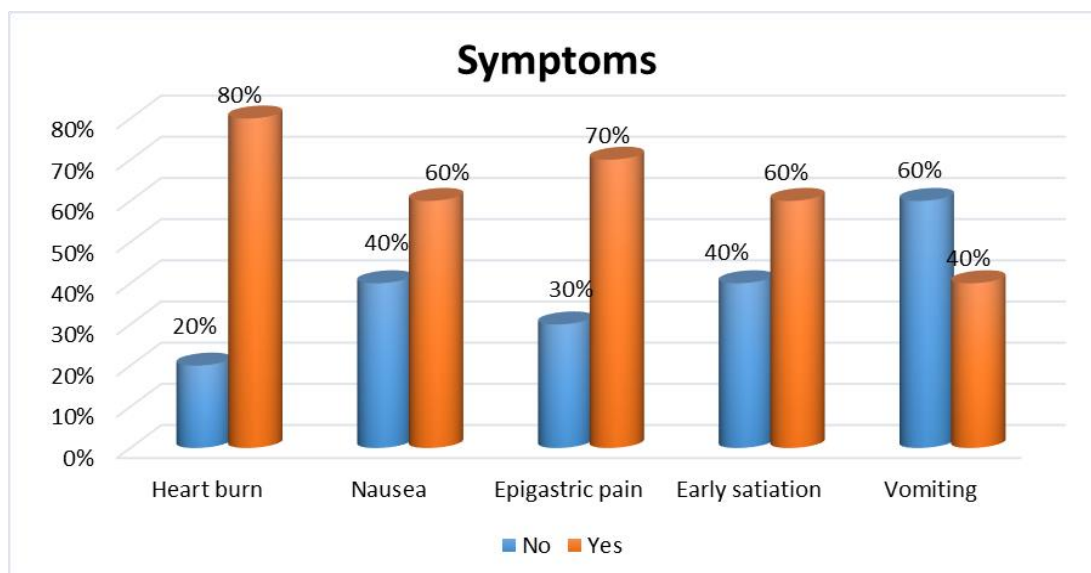
Figures (1):   Description of symptoms of all studied patients

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Table (3): Description of histopathology results of all studied patients

Histopathology results (n = 97)		Grades		
		Mild	**Moderate**	**Severe**
Normal	**18 (18.6%)**	-----	-----	-----
Chronic inflammation	**79 (81.4%)**	58 (73.4%)	21 (26.6%)	0 (0%)
Neutrophilic infiltration	**60 (61.7%)**	46 (76.6%)	10 (16.7%)	4 (6.7%)
Glandular atrophy	**10 (10.3%)**	10 (100%)	0 (0%)	0 (0%)
Intestinal metaplasia	**3 (3.1%)**	3 (100%)	0 (0%)	0 (0%)
H.Pylori density	**47 (48.5%)**	32 (68.1%)	10 (21.3%)	5 (10.6%

Than table shows statistically significant difference (p-value < 0.05) between Endoscope and histopathology results in diagnosis of gastritis **(Table 4)**.

Table (4): Comparison between Endoscope and histopathology results.

		Endoscope (n = 97)		Histopathology (n = 97)		Stat. test	P-value
Gastritis	**No**	33	34%	18	18.6%	$X^2 = 5.9$	**0.014 S**
	Yes	64	66%	79	81.4%		

X2: Chi-square test, S: p-value < 0.05 is considered significant.

DISCUSSION

There was a conducted on 120 patients complaining of chronic gastric dyspepsia more than 8 weeks. All patients were undergoing gastroscopy and biopsies from antral, body mucosa and from any additional area of abnormality were taken for histopathological examination.

As regard description of demographic data, the mean age of all studied patients was 34.7 ± 15.7 years and 74 patients were males (61.7%) and 46 females (38.3%). Regarding laboratory profile , results showed that the mean of ALT, AST, S. creatinine, WBCs, Hb and platelets count were 24.7 U/L , 32.6 U/L , 1.12 mg/dl, 6.4 (x103/ul), 11.7 g/dl and 210.4 (x103/ul) respectively . Regarding description of symptoms, there was heart burn in 96 patients (80%), nausea in 72 patients (60%), Epigastric pain in 84 patients (70%), early satiation in 72 patients (60%) and vomiting in 48 patients (40%).

The endoscopic examination revealed normal gastric mucosa in 33 (27.5%) patients out of the total 120 patients, gastritis in 64 patients (53.3%) and other lesions in 23 patients (19.2%). Histological investigation was performed in 97 patients, 79 (81.4%) of them had chronic gastritis. The concordance between the endoscopical and the histopthological diagnoses was 81%. We found that 19 % of patients with chronic gastritis histologically had normal endoscopic findings, hence emphasizing the role of biopsy even in normal endoscopic cases.

The results of current study were supported by *Al-Nuaimya and Faisalb (2019)* in which 150 selected patients with different upper gastrointestinal symptoms were enrolled. All patients were assessed endoscopically and biopsies from both antral and body mucosa were taken for histopathological examination. There were 81 (54%) males with a mean age ±SD of

(39 ± 5.5) years, and 69 (46%) females with a mean age ±SD of (40 ± 5.08) years. In this study, gastritis was diagnosed histopathologically in 96.6% of the sampled patients. Acute gastritis was diagnosed in 5.3%, while CG was diagnosed in 91.3% of the cases. The concordance between the endoscopic and the histopthological diagnoses was 88%.

Bertges et al. (2018) in their study evaluated 92 patients who underwent upper digestive endoscopy including biopsy of the antral gastric mucosa, comparing the endoscopic and histological findings, which were classified according to the Sidney System. Of the 92 patients included in the study, 57 were males and 35 females, ranging in age from 15 to 84 years. The most prevalent indications were epigastric pain, pyrosis, dyspepsia and H. pylori eradication control. Regarding the endoscopic reports analyzed, 59 presented antral gastritis, while 33 were normal. Upon analyzing the histopatho¬logical reports, 75 presented antral gastritis, while 17 were normal. The kappa coefficient was 0.212 (P<0.05) (confidence interval [0.08-0.34] and P<0.05), indicating that there was no significant agreement between the endoscopic findings and the histological diagnosis of antral gastritis.

Jemilohun et al. (2010) determine the correlation between endoscopic and histological gastritis in patients with dyspepsia. A total of 87 patients, made up of 40 males and 47 females with dyspepsia were included in the study. The age range was between 16 and 85 years with a mean age of 48.68 (±14.12) years. Of the 87 patients studied 54 (62.1%) had endoscopic gastritis while 84 (96.6%) had histological gastritis. Fifty-three (60.9%) had both endoscopic and histological gastritis. Fifty-three (98%) of the 54 patients with endoscopic gastritis and 31(93.9%) of the 33 patients with normal mucosa at endoscopy had histological gastritis respectively. This shows a good association between the presence of endoscopic gastritis and histological gastritis and a very poor association between normal endoscopic mucosa and normal histology.

In accordance with our results, *Mukbel and Ahmed, (2012)* studied One hundred and fifty-six consecutive patients (127 males, 29 females) with a mean age of 38.6 years (range 18 to 67years). Gastritis was found endoscopically in 96 patients (61.5%) of all patients. Association between H. pylori infection and gastritis was statistically significant (P<0.001). The sensitivity and specificity of endoscopic diagnosis in comparison to histological diagnosis of gastritis in this study were 79.2%, 80.7% respectively.

Ajayi et al. (2015) a study from Nigeria evaluated 173 dyspeptic patients both endoscopically and histologically and found that concordance between endoscopic gastritis and histologic gastritis was 94.4%, while one local study found that endoscopic diagnosis of dyspepsia poorly correlated with histopathological findings and this may be due to the small number of patients included in the later study *(Dawod et al., 2016)*.

Garg et al. (2012) analyzed 300 dyspeptic patients by endoscope and antral biopsies were taken, they observed that 20% of cases who were endoscopically normal, chronic

inflammation were also revealed on histology which was also observed by *Samal et al. (2015)* who had 32% of patients with chronic gastritis histologically and normal endoscopic findings.

Against our study, *Poudel et al. (2013)* observed that endoscopic diagnoses of gastric lesions poorly correlated with those of histopathological diagnoses. In their search, a total of 43 gastric biopsies were studied retrospectively. Out of these 43 cases, 29 (67.4%) were male and 14 (32.6%) were female. According to the endoscopic findings, out of 43 cases, 25 (58.1%) cases had Gastritis, 5 (11.63%) had Peptic Ulcer, 4 (9.30%) had gastric Carcinoma, 4 (9.30%) had Chronic Gastritis (CG) with Atrophy, 3 (6.97%) had Erosive Gastritis and 2 (4.7%) had normal mucosa. The correlation of endoscopic and histopathological diagnosis of these gastric lesions was 34.8%.

The results of current study were also in disagreement with *Dawod and Emara (2016)* who presented with dyspepsia and no mucosal lesions found in the upper GI tract by endoscopy were enrolled in the study. Epigastric pain and epigastric burning were the most common presentation of the studied patients while dysphagia and nausea were the least common presentations. The frequency of histological lesions among dyspeptic patients was 65.7% found 72.5% of patients with gastritis by histological examination.

These high variations between these studies may be explained by different sample size, different gastric lesions, varying results of endoscopic and histological findings or different modalities of histopathological examination.

According to the anatomical distribution of gastritis, we found pan-gastritis in 68.8% antrum predominant gastritis in 10 patients 15.6% and corpus predominant gastritis in (15.6%).

These results were relatively like the results obtained from the study of *Hunt et al. (2011)* where antral gastritis had been found in 10%, body gastritis in 4%, and both antral and body gastritis in 82% of the cases. *Al-Nuaimya and Faisalb (2019)* reported that antral gastritis was diagnosed in 9.3% of the cases, body gastritis in 3.3%, and both antral and body gastritis in 84% of the cases. On the other hand, these results are quite different from those of *Awwad and Hassn (2014)* where gastritis was mainly present in the antral mucosa in 63%, followed by antral predominant pan gastritis in 13% and corpus predominant gastritis in 7%.

Our study showed that Helicobacter pylori were detected in 48.5% of patients. A significant association was detected between chronic gastritis and Helicobacter pylori infection.

Jemilohun et al. (2010) in their study demonstrated that Helicobacter pylori (H. pylori) infection 51.7% of all the patients by histology. And all those that had H. pylori infection had histological gastritis. *Gado et al. (2013)* reported that the overall prevalence rate of H. pylori in a Malaysian population with dyspepsia was 49.0%. *Alazmi et al. (2010)* found that an overall prevalence rate of 49.7% was reported in patients with dyspepsia.

Bertges et al. (2018) reported that Histological investigation of the presence of H. pylori was performed in 90 patients: 42 had 47% H. of putieuts. In a study from our locality by *Dawod and Emara (2016)* observed that the prevalence of H. pylori (detected in the histology) was 51.4% in patients with dyspepsia.

CONCLUSION

The prevalence of gastritis among the dyspeptic patients was very high.

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دراسة مقارنة بين منظار المعدة والتشخيص الخلوى فى تشخيص التهاب المعدة الكلى فى مرضى اضطراب الهضم المزمن

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خلفيــة البحـث: عسـر الهضـم هـو متلازمـة إكلينيكيـة تتضـمن أعراضـا تتعلـق بالجهـاز الهضـمي العلـوي. تشـمل خيـارات تقيـيم مرضـى عسـر الهضـم التجـارب العلاجيـة، واختبــار الميكــروب الحلزونـي، والتصــوير بالمنظــار للجهــاز الهضــمي العلــوي، والتنظير الداخلي.

الهـدف مــن البحـث: مقارنـة التشـخيص بالمنظـار والتشـخيص النسـيجي المرضـي لالتهـاب المعـدة في المرضـى الـذين يعـانون مـن عسـر الهضـم المـزمن لتقيـيم التكـرار النسـبي ونمـط الأنـواع المختلفـة مـن التهـاب المعـدة في المرضـى الـذين يعـانون مـن عسر الهضم المزمن.

المرضـي وطـرق البحـث: دراسـة مسـحية مسـتقبلية علـى 120 مريضًـا يعـانون مـن عسـر الهضـم المـزمن لأكثـر مـن 8 أسـابيع. خضـع جميـع المرضـى لتنظيـر المعـدة. تـم تسـجيل نتـائج فحـص المعـدة لجميـع المرضـى. تـم أخـذ عينـات الخزعـة. اثنـان مـن الغـار الأمـامي والخلفـي، واثنـان مـن الجسـم الأمـامي والخلفـي، واثنـان مـن أي منطقـة أخـرى غيـر طبيعيـة. تـم تطبيـق معـايير التشـخيص علـى السـمات النسـيجية وتـم تصـنيف كـل معلمـة نسـيجية مرضية (التهـاب مـزمن، نشـاط، ضـمور، تحـول معـوي غيـر طبيعـي وكثافـة الميكـروب الحلزونـي) لتقيـيم شـدتها علـى أنهـا 0 = غائبـة، 1 = معتدلة ، 2 = متوسطة أو 3 = في الجسم والغار.

نتـائج البحـث: كشـف التنظيـر الـداخلي عـن وجـود جـدار مخـاطي طبيعـي فـي 33 مريضـا (27.5٪)، التهـاب معـوي فـي 64 مريضـا (53.3٪) وآفـات أخـرى فـي 23

مريضـا (19.2٪). فيمـا يتعلـق بالتهـاب المعـدة، كـان هنـاك تـورم فـي 61 مريضـا (95.3٪)، احمــرار فـي 45 مريضـا (70.3٪)، ضــمور فـي 10 مرضـى (15.6٪) وعقيـدات مخاطيـة فـي 10 مرضـى (15.6٪). فيمـا يتعلـق بمكـان التهـاب المعـدة، فقـد كـان التهـاب المعـدة الشـامل فـي 44 مريضًـا (68.8٪)، التهـاب المعـدة السـائد فـي الغـار فـي 10 مرضـى (15.6٪)، التهـاب المعـدة السـائد فـي الجسـم عنـد 10 مرضـى (15.6٪). أمـا الآفـات الأخـرى، فقـد كـان هنـاك التهـاب الاثنـا عشـر فـي 7 مرضـى (30.4٪)، قرحـة هضـمية فـي 3 مرضـى (13٪)، التهـاب المـريء لـدى 2 مرضـى (8.7٪)، التهـاب المعـدة التـآكلي فـي 4 مرضـى (17.4٪)، الجهـاز الهضـمي العلـوي يشـتبه فـي وجـود ورم خبيـث فـي 2 مرضـى (8.7٪) وفتـق حجـابي فـي 5 مرضـي 21.7٪.

كانـت نتـائج التشـريح المرضـي طبيعيـة فـي 18 (18.6٪)، التهـاب مـزمن فـي 79 (81.4٪)، تـراكم كـرات دم بيضـاء فـي 60 (61.7٪)، ضـمور غـدي فـي 10 (10.3٪)، تحـول معـوي غيـر طبيعـي فـي 3 (3.1٪) وكثافـة الميكـروب الحلزونـي. فـي 47 (48.5٪).

تـم الكشـف عـن التهـاب المعـدة عـن طريـق التنظيـر الـداخلي فـي 64 (53.3٪) و79 (81.4٪) عـن طريق الخزعة. كان هذا الاختلاف ذا دلالة إحصائية مهمة.

الخلاصـة: انتشـار التهـاب المعـدة بـين مرضـى عسـر الهضـم مرتفـع للغايـة حيـث لاحظنـا التهـاب المعـدة بـالتنظير الـداخلي فـي 64 مريضًـا (53.3٪) وآفـات أخـرى فـي 23 مريضًـا (19.2٪). وكانـت نسـبة التوافـق بـين نتـائج التنظيـر الـداخلي والتشـخيص النسـيجي المرضـي لالتهـاب المعـدة (81٪). إرتفـاع معـدل انتشـار جرثومـة الميكـروب الحلزونـي بـين مرضـى عسـر الهضـم (48.5٪). تـم الكشـف عـن التهـاب المعدة بشكل أفضل عن طريق التشخيص النسيجي.

الكلمـات الدالـة : منظـار المعـدة , التشـخيص النسـيجي , عسـر الهضـم , التهـاب المعـدة .