



Clinicopathological Study of Gastric Biopsies in A Sample of Iraqi Patients

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Abstract

Objective: To assess gastric pathology in a sample of Iraqi patients in relation to clinico-endoscopic findings, including age, gender, clinical presentation, and endoscopic findings.

Background: Gastric disorders are among the most common problems encountered in clinical practice. The definitive diagnosis is based on histopathological confirmation and is one of the foundations for proper treatment planning.

Materials and Methods: A retrospective study including analysis of 200 cases of gastric biopsies with different clinical presentations and different endoscopic findings collected from the Medical Consultant Office at Al-Nahrain University/ College of Medicine in Baghdad from January 2017 to September 2022. Assessment of histopathological diagnosis in relation to clinical and endoscopic features was done for all enrolled cases.

Results: The majority of cases in this study were female (64%). The most common clinical presentation was epigastric pain (49.5%). Regarding age, 24% of cases were within the age group of 20-29 years, and the most common endoscopic finding was gastropathy (59%). The most common histopathological findings were chronic atrophic gastritis (45%) and chronic superficial gastritis (34.5%) in association with *H. pylori* (87.5%). The most common polyp type in the present study was hyperplastic polyp (3.5%), whereas fundic polyp was 0.5%. Adenocarcinoma was the most common type of malignancy (4.5%), and diffuse type adenocarcinoma was the most common one.

Conclusion: *H. pylori* infected more than three-quarters of patients in the recent study with female predominance. Most cases were between 20-29 years, and epigastric pain was the most common clinical presentation. Chronic gastritis was the most common histopathological finding. Adenocarcinoma was the most common malignancy encountered in the present study.

Keywords

Gastric Pathology, Iraqi Patients, Clinico-Endoscopic Finding, Histopathological Diagnosis, H. Pylori, Chronic Gastritis, Adenocarcinoma

Introduction

Patients presenting with a variety of gastrointestinal tract symptoms frequently attend outpatient

departments and require thorough investigations to arrive at a confirmatory diagnosis. Endoscopic examination of gastrointestinal tract is the simple and

convenient investigation to offer some clue to the diagnosis [1]. The main concern is the presence or absence of malignancy [2]. Endoscopy is very useful for selection of the site of suspected lesion [3]. The gastric lesions have symptomatology which range from dyspepsia to altered bowel movements and dysphagia to gastrointestinal bleeding, anorexia and heartburn [4].

In the upper gastrointestinal tract most commonly encountered problem in the clinical practice is gastric lesions with a high degree of morbidity and mortality and endoscopic biopsy is common procedure performed in the hospital for a variety of inflammatory, benign and malignant lesions [5].

Upper gastrointestinal endoscopy is regarded as the investigation of choice in patients with upper gastrointestinal tract disorders who often present with dyspepsia [6]. Histopathological study of biopsy specimens is used to confirm endoscopic diagnosis in suspected malignancy or to rule out benign lesions and also are performed for monitoring the course, determining the extent of a disease as responses to therapy and for the early detection of complications [7]. Biopsy provides an excellent opportunity for the clinician and pathologist to correlate the clinical data, endoscopic findings and pathological lesions. Gastric carcinoma is the second most common tumor in the world [8].

Histopathological examination of gastric biopsy helps identifying various lesions including malignancy and allows for early therapeutic decisions without delay. *Helicobacter pylori* (*H. pylori*) represent one of the medically prominent and most common infections worldwide [9]. In gastric cancer, irrespective of their histology, most of these tumors originate from mucosa infected by *H. pylori* and very rarely occur without inflammation. Therefore, *H. pylori* are considered to be a strong factor in the evolution of gastric cancer [10,11].

Regarding all facts about the strong correlation between *H. pylori* and different upper gastrointestinal lesions, it is very crucial to specify the presence of this bacteria in gastric biopsy reports as it has an important role in the therapeutic implications too [12].

Some patients with persistent *H. pylori* develop gastric atrophy, followed by intestinal metaplasia, which might eventually progress to dysplasia and adenocarcinoma [13]. A wide variety of infections, inflammatory disorders, vascular disorders, mechanical conditions, toxic and physical reactions including radiation injury and neoplasm can be cited in the stomach [14]. To arrive at diagnosis of different lesions, endoscopic assessment and histopathological examination` are complementary [14].

This study aims to assess gastric pathology in a sample of Iraqi patients in relation to clinic-endoscopic finding including (age, gender, clinical presentation and endoscopic finding).

Materials and Methods

A retrospective study including analysis of (200) cases of gastric biopsies with different clinical presentations and different endoscopic findings collected from Medical Consultant Office at AL-Naharain University/College of Medicine in Baghdad from January 2017 to September 2022.

The stained slides were collected and the following data was enrolled: (age, gender, clinical presentation, endoscopic finding and histopathological diagnosis). All statistical analyses were performed utilizing SPSS, version 23 including mean, standard deviation, frequency and percentage using Yates Chi square with P value <0.05 regarded as statistically significant.

Table-1: Age and Gender Distribution of the Studied Sample

Age and Gender Distribution	Frequency	Percentage
Age		
10-19 years	22	11
20-29 years	48	24
30-39 years	41	20.5
40-49 years	31	15.5
50-59 years	24	12
60-69 years	20	10
70-79 years	14	7
Total	200	100
Gender		
Male	72	36
Female	128	64
Total	200	100

The Study Sample:

A total number of 200 patients were included in the study sample.

Age and Gender Distribution of the Studied Sample:

The age of the studied sample ranged from 10-79 years. Regarding age group distribution, most of the studied samples were in the age group 20-29 years (24.0%); as illustrated in **Table-1**. As for gender distribution, the male to female ratio was 0.56:1.

Clinical, Endoscopic and Histopathological Features of the Studied Sample:

The clinical characteristics of the studied sample are illustrated in **Table-2**. Regarding clinical presentation, epigastric pain was the most common (49.5%), followed by dyspepsia (17.5%). Concerning endoscopic findings; gastropathy was the most frequent finding (59.0%) and distributed as the following: pangastropathy (26.5%), mild gastropathy (14.5%), nodular gastropathy (10.0%), and moderate gastropathy (8.0%). As for histopathological findings,

chronic atrophic gastritis was the most common (45.0%) as shown in **Fig-2B**, followed by chronic superficial gastritis (34.5%) as shown in **Fig-2A**, and intestinal metaplasia (7.0%) as seen in **Fig-2C** and **Fig-2D**. Concerning *H. Pylori* infection as shown in **Fig-1**, the majority (87.5%) were infected; as illustrated in **Table-2**.

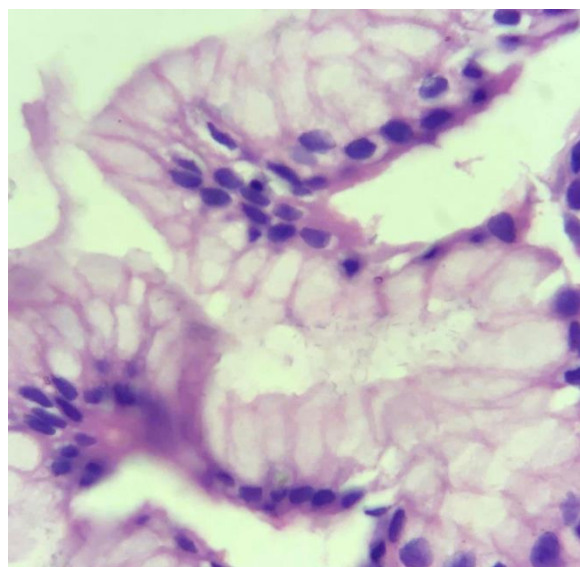
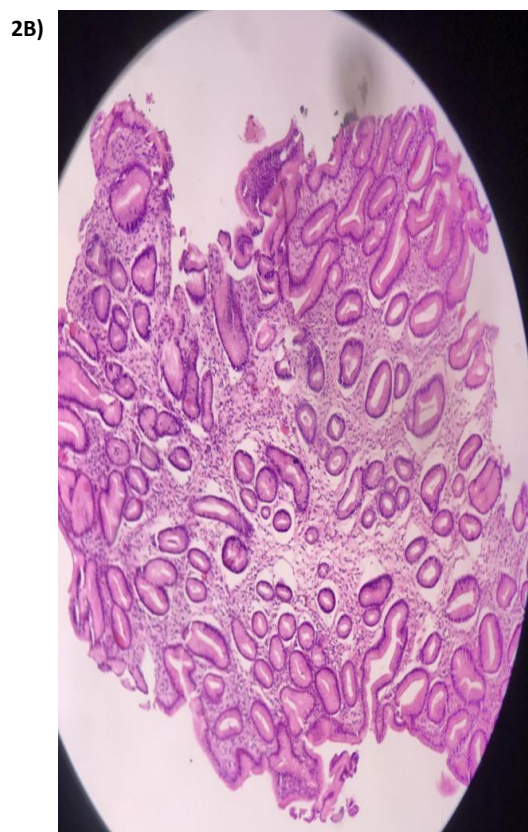
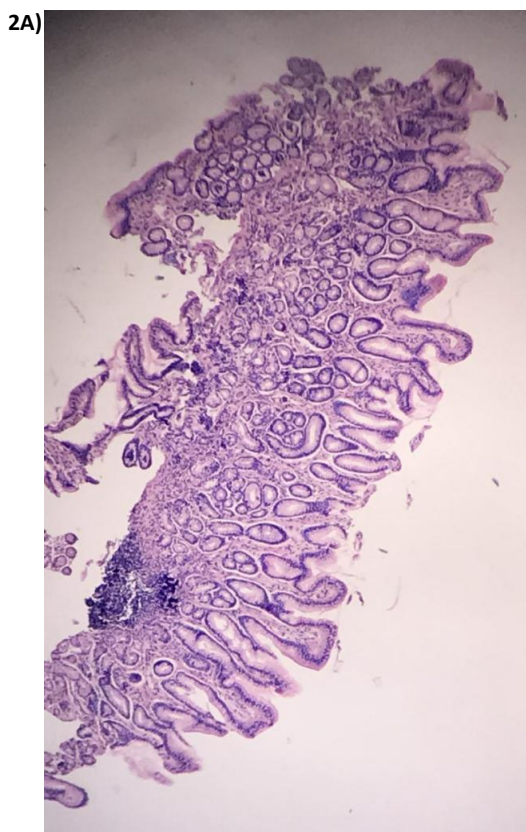


Fig-1:



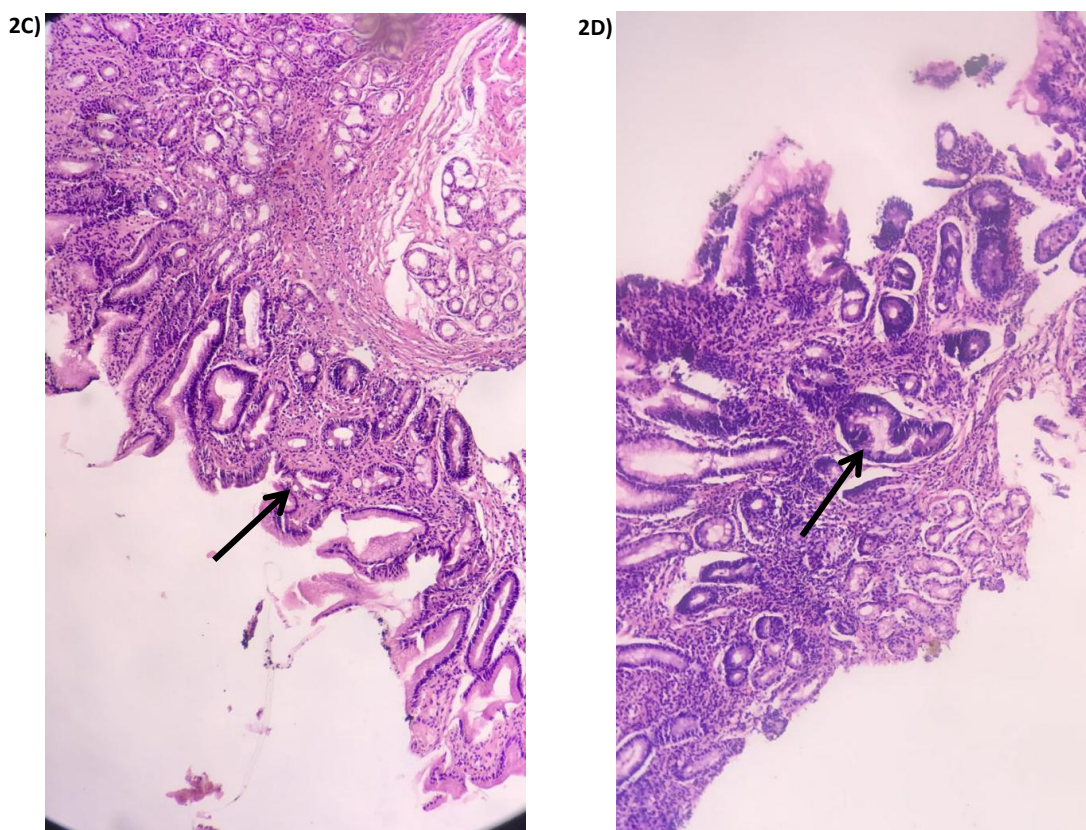


Fig-2:

A: section of gastric biopsy shows chronic superficial gastritis associated with H.pylori (lymphoid follicle is seen which is characteristic of H.pylori gastritis), (H&E; 10x)

B: section of gastric biopsy showing chronic moderate atrophic gastritis, no intestinal metaplasia. (H&E ;20x)

C: section of gastric biopsy shows chronic atrophic gastritis associated with H.pylori with intestinal metaplasia (black arrow), (H & E; 20x)

D: section of gastric biopsy shows chronic atrophic gastritis associated with H.pylori with low grade dysplasia (black arrow) (H & E ;20x)

Relationship Between Clinicopathological Parameters:

Association Between Age and Histopathological Findings:

A statistically significant association was detected between age and histopathological findings (P value = 0.009), as illustrated in **Table-3**. The mentioned histopathological abnormalities were the most common in the following age groups:

Chronic superficial gastritis as shown in **Fig-2A** was the most common in the age groups (20-29 years) (13.0%). Chronic atrophic gastritis as shown in **Fig-2B** was the most common in age groups (30-39 years) (11.5%), adenocarcinoma was the most common in age group (40-49 years) (**Fig-4A** and **Fig-4B**).

Association Between Gender and Histopathological Findings:

No significant association was detected between gender and histopathological findings (P value = 0.667), as illustrated in **Table-4**.

Association Between Clinical Presentation and Histopathological Findings:

A statistically significant association was detected between clinical presentation and histopathological findings (P value < 0.001), as illustrated in **Table-5**. The mentioned histopathological abnormalities were the most common in patients presented with the following clinical presentation: Chronic superficial gastritis was the most common in patients with epigastric pain (18.5%), while chronic atrophic gastritis was the most common in patients with anemia (3.0%) and patients with dyspepsia (8.0%).

Table-2: Clinical Characteristics of the Studied Sample

Clinical Characteristics	Frequency	Percentage
Clinical Presentation		
Epigastric pain	99	49.5
Dyspepsia	35	17.5
Anemia	14	7
Vomiting	9	4.5
Malena	9	4.5
GERD	8	4
Hematemesis	8	4
Weight loss	7	3.5
Dysphagia	4	2
Diarrhea	3	1.5
Ascites	2	1
Enlarged paraaortic lymph node	2	1
Total	200	100
Endoscopic Findings		
Pangastropathy	53	26.5
Mild gastropathy	29	14.5
Nodular gastropathy	20	10
Erythema	20	10
Moderate gastropathy	16	8
Congested mucosa	14	7
Gastritis	12	6
Erosive gastritis	9	4.5
Mass	9	4.5
Polyp	7	3.5
Thickening	4	2
Ulcer	4	2
Multiple polyps	3	1.5
Total	200	100
Histopathological Findings		
Chronic atrophic gastritis	90	45
Chronic superficial gastritis	69	34.5
Intestinal metaplasia	14	7
Adenocarcinoma	9	4.5
Hyperplastic polyp	7	3.5
Low grade dysplasia	5	2.5
Chronic granulomatous gastritis	2	1
Fundic polyp	1	0.5
Double hit lymphoma	1	0.5
MALToma	1	0.5
Erosive gastritis	1	0.5
Total	200	100
H. Pylori Infection		
Yes	175	87.5
No	25	12.5
Total	200	100

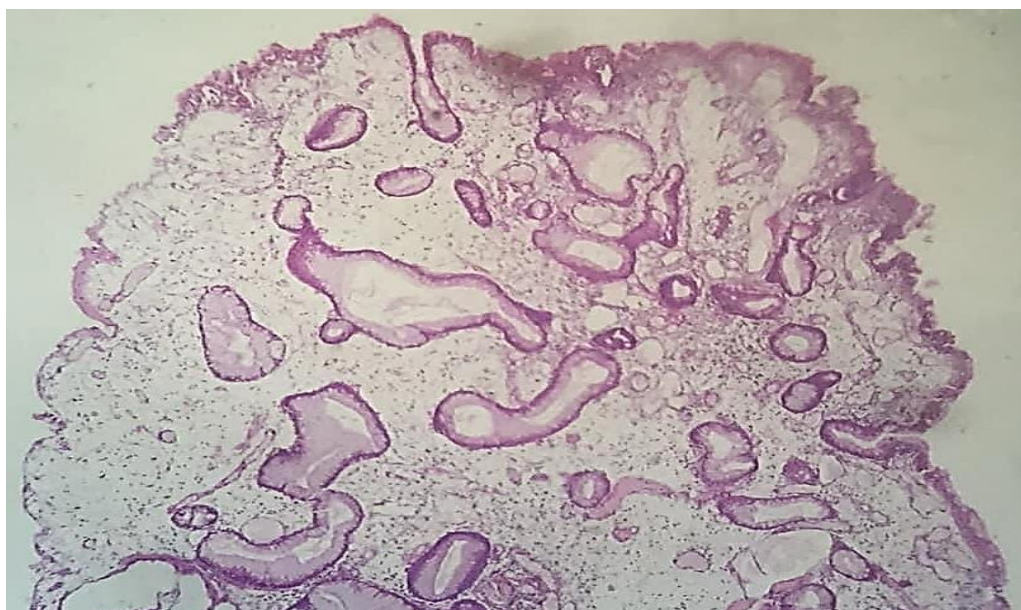
MALToma: Mucosal Associated Lymphoid Tissue; Double Hit lymphoma: MALToma + Diffuse Large B cell Lymphoma

Table-3: Association Between Age and Histopathological Findings

Age	Histopathological findings											Total
	Chronic Superficial gastritis	Chronic granulomatous gastritis	Chronic Atrophic gastritis	Intestinal metaplasia	Low grade dysplasia	Adenocarcinoma	Hyperplastic polyp	Fundic polyp	Double hit lymphoma	MALT oma	Erosive gastritis	
10-19 years	11	1	10	0	0	0	0	0	0	0	0	22
	5.50%	0.50%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.00%
20-29 years	26	1	17	4	0	0	0	0	0	0	0	48
	13.00%	0.50%	8.50%	2.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	24.00%
30-39 years	14	0	23	2	1	1	0	0	0	0	0	41
	7.00%	0.00%	11.50%	1.00%	0.50%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	20.50%
40-49 years	8	0	15	0	1	3	2	0	1	1	0	31
	4.00%	0.00%	7.50%	0.00%	0.50%	1.50%	1.00%	0.00%	0.50%	0.50%	0.00%	15.50%
50-59 years	4	0	12	1	2	2	1	1	0	0	1	24
	2.00%	0.00%	6.00%	0.50%	1.00%	1.00%	0.50%	0.50%	0.00%	0.00%	0.50%	12.00%
60-69 years	5	0	6	3	1	2	3	0	0	0	0	20
	2.50%	0.00%	3.00%	1.50%	0.50%	1.00%	1.50%	0.00%	0.00%	0.00%	0.00%	10.00%
70-79 years	1	0	7	4	0	1	1	0	0	0	0	14
	0.50%	0.00%	3.50%	2.00%	0.00%	0.50%	0.50%	0.00%	0.00%	0.00%	0.00%	7.00%
Total	69	2	90	14	5	9	7	1	1	1	1	200
	34.50%	1.00%	45.00%	7%	2.50%	4.50%	3.50%	0.50%	0.50%	0.50%	0.50%	100%

MALToma: Mucosal Associated Lymphoid Tissue; Double Hit lymphoma: MALToma + Diffuse Large B cell Lymphoma

3A)



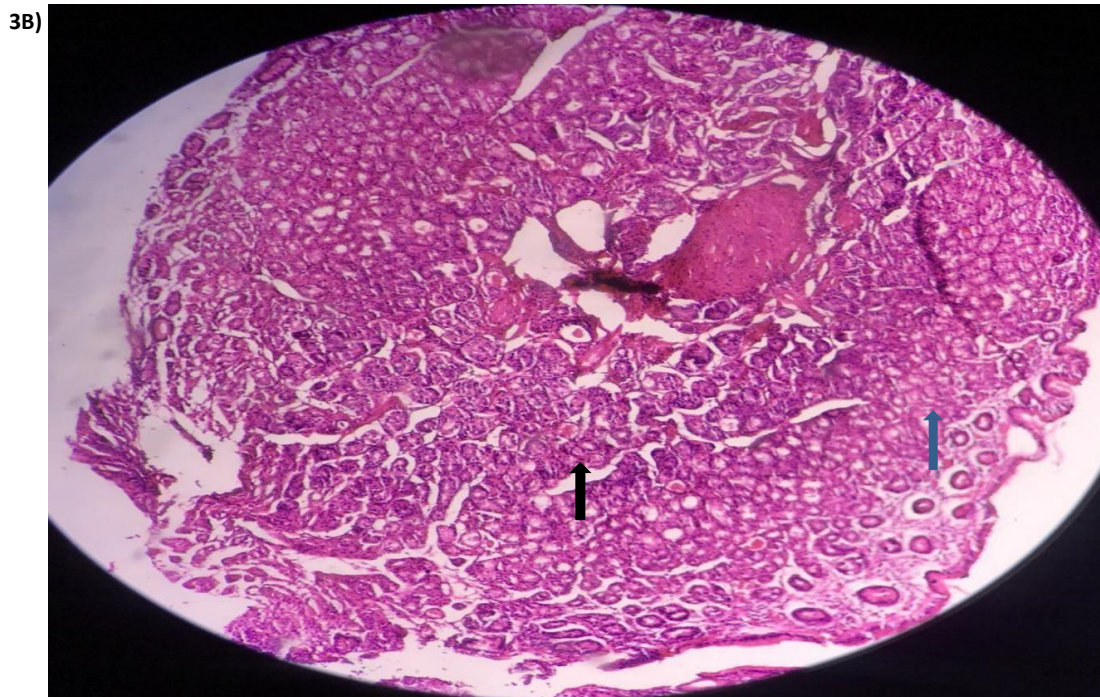


Fig-3:

Gastric polyps A: hyperplastic polyp, section of gastric biopsy showing cystically dilated glands, architectural distortion, irregular foveolar epithelium with edematous lamina propria, (H &E ;20 x)

B: Fundic polyp, section of gastric biopsy showing polypoidal lesion with cystically dilated glands lined by parietal (blue arrow) and chief cells (black arrow), (H&E ;10x)

Table-4: Association Between Gender and Histopathological Findings

Gender	Histopathological findings											Total
	Chronic superficial gastritis	Chronic granulomatous gastritis	chronicAtrophic gastritis	Intestinal metaplasia	Low grade dysplasia	Adenocarcinoma	Hyperplastic polyp	Fundic polyp	Double hit lymphoma	MALToMa	Erosive gastritis	
Male	25	0	33	4	3	3	2	0	0	1	1	72
	12.50%	0.00%	16.50%	2.00%	1.50%	1.50%	1.00%	0.00%	0.00%	0.50%	0.50%	36%
Female	44	2	57	10	2	6	5	1	1	0	0	128
	22.00%	1.00%	28.50%	5.00%	1.00%	3.00%	2.50%	0.50%	0.50%	0.00%	0.00%	64%
Total	69	2	90	14	5	9	7	1	1	1	1	200
	34.50%	1.00%	45.00%	7.00%	2.50%	4.50%	3.50%	0.50%	0.50%	0.50%	0.50%	100%

MALToMa: Mucosal Associated Lymphoid Tissue; Double Hit lymphoma: MALToMa + Diffuse Large B cell Lymphoma

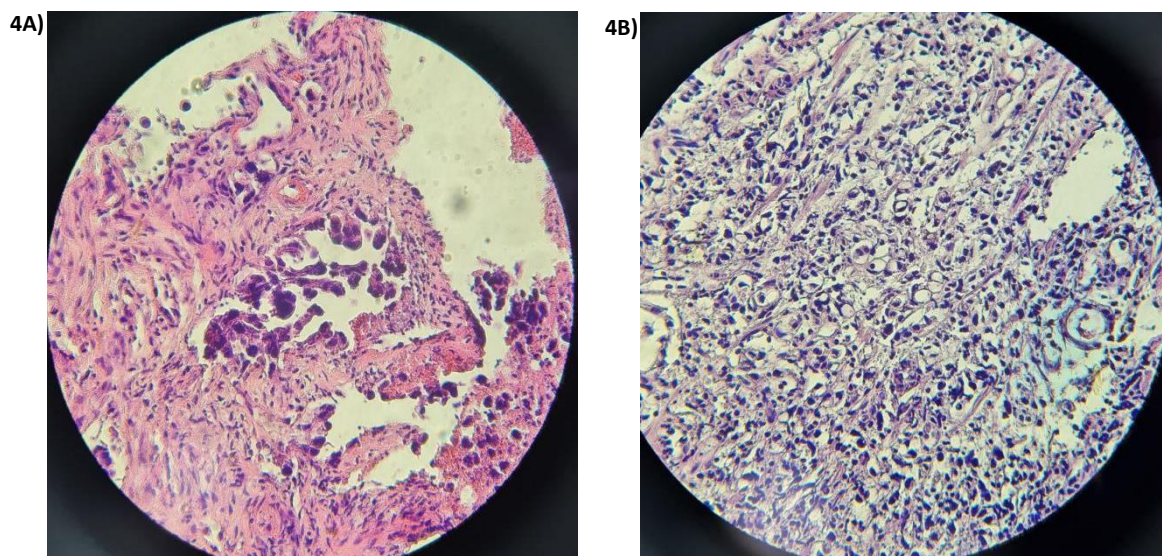


Fig-4:
A: Intestinal type adenocarcinoma section from stomach shows malignant cells forming tubules with hyperchromatic cells, large pleomorphic nuclei, with prominent nucleoli (H & E; 20x)
B: Diffuse type signet ring adenocarcinoma, section from stomach shows diffuse infiltration of signet ring (intracytoplasmic mucin with eccentric hyperchromatic nuclei, (H & E; 20X)

Association Between Endoscopic Findings and Histopathological Findings:

A statistically significant association was detected between endoscopic findings and histopathological findings (P value < 0.001), as illustrated in **Table-6**. The mentioned histopathological abnormalities were the most common in patients presented with the following endoscopic findings:

Chronic atrophic gastritis was the most common in patients with pangastropathy (17.0%), in patients with mild gastropathy (7.5%), and in patients with nodular gastropathy (5.0%). Chronic superficial gastritis was the most common in patients with erythema (5.5%). Adenocarcinoma as shown in **Fig-4A** and **Fig-4B** was the most common in patients with mass (3.5%).

Association Between *H.Pylori* Infection and Histopathological Findings:

A statistically significant association was detected between *H. pylori* infection and histopathological findings (P value < 0.001), as the vast majority of cases with gastritis (chronic superficial gastritis and atrophic gastritis as shown in **Fig-2**) had *H. pylori* infection (**Fig-1**); as illustrated in **Table-7**.

Discussion

Endoscopic examination and gastric biopsy provide

useful information that aids in the diagnosis of various lesions [15].

Gastritis includes both self-limiting and non-self-limiting (long-term) inflammatory diseases, the latter of which is epidemiologically, biologically, and clinically linked to the development of gastric cancer; several biological models of gastric oncogenesis associated with inflammation have been proposed; *Helicobacter pylori* gastritis is the most common worldwide, and it is a first-class carcinogen [16].

On this basis eradicating *Helicobacter pylori* is mandatory for the primary prevention of gastric cancer [17].

As for gender the male to female ratio in this study was 0.56:1, this result differs from a study conducted by Sharma et al [18] in Nepal, 2015 which found male patients were 58%, female patients were 42%. It also disagreed with the Salaim et al study [19] which was done in Iraq, Kurdistan region in 2021 that found frequency of male patients were 53.2%, female patients were 46.8%.

In the current study 24% were in the age group (20-29) years and it was younger in comparison with a research that done by Pandey et al [20] in India, 2020

which showed 29.7% of patients were in the age group (40 – 49) years as the most common age group, and it is also incompatible with another work which was done by Salaim et al [19] in Iraq, Kurdistan region, in 2021 which showed 39.4% of patients were in the age group (30-49) years. While this result was relatively in agreement with a study that made by Orajah in Saudi Arabia [21] in 2022 which found 53.4% of patient were less than 40 years.

Regarding clinical presentation, the most common clinical presentation in the present study was epigastric pain 49.5%. This was in agreement with a study conducted by Mehdiratta et al [22] in India in 2018 that showed epigastric pain 45.6% as the most common clinical presentation. Epigastric pain was presented as the most common clinical presentation in a study of Jethalya and Totla in India in 2020 that made 30.12% [23].

Table-5: Association Between Clinical Presentation and Histopathological Findings

Clinical Presentation	Histopathological findings											
	superficial gastritis Chronic	Chronic granulomatous gastritis	Chronic Atrophic gastritis	Intestinal metaplasia	Low grade dysplasia	Adenocarcinoma	Hyperplastic polyp	Fundic polyp	Double hit lymphoma	MALToma	Erosive gastritis	Total
Epigastric pain	37	1	51	3	2	1	4	0	0	0	0	99
	%18.50	%0.50	%25.50	%1.50	%1.00	%0.50	%2.00	%0.00	%0.00	%0.00	%0.00	%49.50
Anemia	2	0	6	2	2	1	1	0	0	0	0	14
	%1.00	%0.00	%3.00	%1.00	%1.00	%0.50	%0.50	%0.00	%0.00	%0.00	%0.00	%7.00
Dyspepsia	10	0	16	6	1	1	1	0	0	0	0	35
	%5.00	%0.00	%8.00	%3.00	%0.50	%0.50	%0.50	%0.00	%0.00	%0.00	%0.00	%17.50
Vomiting	5	0	3	1	0	0	0	0	0	0	0	9
	%2.50	%0.00	%1.50	%0.50	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%4.50
Weight loss	2	0	0	0	0	3	0	0	1	1	0	7
	%1.00	%0.00	%0.00	%0.00	%0.00	%1.50	%0.00	%0.00	%0.50	%0.50	%0.00	%3.50
Dysphagia	1	0	3	0	0	0	0	0	0	0	0	4
	%0.50	%0.00	%1.50	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%2.00
Diarrhea	0	0	2	1	0	0	0	0	0	0	0	3
	%0.00	%0.00	%1.00	%0.50	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%1.50
Malena	5	0	4	0	0	0	0	0	0	0	0	9
	%2.50	%0.00	%2.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%0.00	%4.50
GERD	3	0	3	1	0	0	1	0	0	0	0	8
	%1.50	%0.00	%1.50	%0.50	%0.00	%0.00	%0.50	%0.00	%0.00	%0.00	%0.00	%4.00
Hematemesis	4	0	2	0	0	1	0	0	0	0	1	8
	%2.00	%0.00	%1.00	%0.00	%0.00	%0.50	%0.00	%0.00	%0.00	%0.00	%0.50	%4.00
Ascites	0	0	0	0	0	1	0	1	0	0	0	2
	%0.00	%0.00	%0.00	%0.00	%0.00	%0.50	%0.00	%0.50	%0.00	%0.00	%0.00	%1.00
Enlarged paraaortic lymph node	0	1	0	0	0	1	0	0	0	0	0	2
	%0.00	%0.50	%0.00	%0.00	%0.00	%0.50	%0.00	%0.00	%0.00	%0.00	%0.00	%1.00
Total	69	2	90	14	5	9	7	1	1	1	1	200
	%34.50	%1.00	%45.00	%7.00	%2.50	%4.50	%3.50	%0.50	%0.50	%0.50	%0.50	%100.00

MALToma: Mucosal Associated Lymphoid Tissue; Double Hit lymphoma: MALToma + Diffuse Large B cell Lymphoma

Table-6: Association Between Endoscopic and Histopathological Findings

Endoscopic Findings	Histopathological Findings											Total
	Chronic superficial gastritis	Chronic granulomatous gastritis	Chronic Atrophic gastritis	Intestinal metaplasia	Low grade dysplasia	Adenocarcinoma	Hyperplastic polyp	Fundic polyp	Double hit lymphoma	MALToma	Erosive gastritis	
Pangastropathy	14	0	34	2	2	0	0	0	0	0	1	53
	7.00%	0.00%	17.00%	1.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.50%	26.50%
Mild gastropathy	12	0	15	2	0	0	0	0	0	0	0	29
	6.00%	0.00%	7.50%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.50%
Moderate gastropathy	8	0	8	0	0	0	0	0	0	0	0	16
	4.00%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.00%
Nodular gastropathy	7	0	10	3	0	0	0	0	0	0	0	20
	3.50%	0.00%	5.00%	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%
Gastritis	5	1	4	2	0	0	0	0	0	0	0	12
	2.50%	0.50%	2.00%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.00%
Erosive gastritis	3	0	4	1	1	0	0	0	0	0	0	9
	1.50%	0.00%	2.00%	0.50%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.50%
Erythema	11	0	8	1	0	0	0	0	0	0	0	20
	5.50%	0.00%	4.00%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%
Congested mucosa	7	0	6	1	0	0	0	0	0	0	0	14
	3.50%	0.00%	3.00%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.00%
Polyp	0	0	0	1	0	0	6	0	0	0	0	7
	0.00%	0.00%	0.00%	0.50%	0.00%	0.00%	3.00%	0.00%	0.00%	0.00%	0.00%	3.50%
Mass	0	0	0	0	0	7	0	0	1	1	0	9
	0.00%	0.00%	0.00%	0.00%	0.00%	3.50%	0.00%	0.00%	0.50%	0.50%	0.00%	4.50%
Thickening	2	1	0	0	0	1	0	0	0	0	0	4
	1.00%	0.50%	0.00%	0.00%	0.00%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%
Multiple polyps	0	0	0	0	1	0	1	1	0	0	0	3
	0.00%	0.00%	0.00%	0.00%	0.50%	0.00%	0.50%	0.50%	0.00%	0.00%	0.00%	1.50%
Ulcer	0	0	1	1	1	1	0	0	0	0	0	4
	0.00%	0.00%	0.50%	0.50%	0.50%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%
Total	69	2	90	14	5	9	7	1	1	1	1	200
	34.50%	1.00%	45.00%	7.00%	2.50%	4.50%	3.50%	0.50%	0.50%	0.50%	0.50%	100.00%

MALToma: Mucosal Associated Lymphoid Tissue; Double Hit lymphoma: MALToma + Diffuse Large B cell Lymphoma

Table-7: Association Between H. Pylori Infection and Histopathological Findings

H. pylori infection	Histopathological findings											Total
	Chronic superficial gastritis	Chronic granulomatous gastritis	Chronic Atrophic gastritis	Intestinal metaplasia	Low grade dysplasia	Adenocarcinoma	Hyperplastic polyp	Fundic polyp	Double hit lymphoma	MALToma	Erosive gastritis	
Yes	67	0	90	13	4	0	1	0	0	0	0	175
	33.50%	0.00%	45.00%	6.50%	2.00%	0.00%	0.50%	0.00%	0.00%	0.00%	0.00%	87.50%
No	2	2	0	1	1	9	6	1	1	1	1	25
	1.00%	1.00%	0.00%	0.50%	0.50%	4.50%	3.00%	0.50%	0.50%	0.50%	0.50%	12.50%
Total	69	2	90	14	5	9	7	1	1	1	1	200
	34.50%	1.00%	45.00%	7.00%	2.50%	4.50%	3.50%	0.50%	0.50%	0.50%	0.50%	100.00%

MALToma: Mucosal Associated Lymphoid Tissue; Double Hit lymphoma: MALToma + Diffuse Large B cell Lymphoma

Endoscopic finding is a fundamental modality for the histologic diagnosis of gastric lesions. However, the pathologic findings are not always concordant with the endoscopic interpretations [24]. In this research, the most common endoscopic findings are gastropathy (59%) that differed from a study which was done by Rani et al in India (2018) which showed erosion and ulcer were the most common endoscopic finding (14.46%) [25], and this study was in discordance also with another study conducted by Pruthi et al in India in 2013 which showed ulcer was the most common endoscopic finding (46.7%) [26].

Helicobacter pylori are a gram-negative spiral-shaped bacterium that causes chronic or atrophic gastritis, gastric carcinoma, and gastric lymphoma [27]. Regarding association with *Helicobacter pylori*, the recent finding showed 87.5% were positive for *H.pylori*, this result is in concordance with a study which was done by Aziz et al in 2020 in Iraq, Mosul that showed 71% [28] of cases were positive for *Helicobacter pylori*, while differs with another study in Nigeria in 2011 which was done by Adisa et al that found 57.2% [29] of patients were positive for *H. pylori*. It is incompatible also with a study conducted

by Orajiah in 2022 in Saudi Arabia that showed 32.5% [21] of patients were positive for *H. pylori*.

Chronic gastritis is one of the most common life-long serious and insidious illnesses in humans; it has now been established that *H.pylori* is the cause of gastritis in the vast majority of cases [30,31].

Atrophic gastritis is a complex syndrome that develops as a result of *Helicobacter pylori* infection or in the context of gastric autoimmunity, it often has a benign course but can lead to potentially life-threatening complications such as cancer and anaemia [32].

Regarding Histopathological findings, in this study chronic superficial gastritis showed in 34.5% of cases, chronic atrophic gastritis were seen in 45% of cases as the most common histopathological findings, this study was in agreement with a study which was done by Hirachand et al in 2018 in Nepal that showed chronic superficial gastritis in 30.14% [33] of cases as the most common histopathological finding. In the current study, chronic atrophic gastritis was found in 45% of patients, compared to Aziz et al 2020 study in

Iraq, Mosul. This revealed that atrophic gastritis was present in 42.4% [28] of patients, with the majority being mild.

Gastric intestinal metaplasia is a known premalignant condition of the human stomach that occurs as a result of the replacement of normal gastric mucosa with mucin secreting intestinal mucosa [34]. The most common cause of gastric intestinal metaplasia is *H.pylori* infection [35].

Both architectural and cytologic features are important in evaluating for low-grade and high-grade dysplasia, in low grade dysplasia architectural changes are mild and characterised by glandular crowding and disarray, mild glandular branching, the nuclei display hyperchromasia and elongation, mild to moderate mitotic activity and the nuclei still basally located and maintain nuclear polarity, in high-grade dysplasia showing more complex architectures with marked glandular crowding and disarray, back to back glands with intraluminal folds and cribriforming, glandular branching and budding are frequently seen, the cytologic atypia is more severe with markedly increased mitotic activity and presence of atypical mitosis, the nuclei usually reach the luminal surface of the cell cytoplasm, displaying loss of nuclear polarity and appear round and vesicular [36].

In the present work intestinal metaplasia was seen in 7% of cases, this percentage is higher in comparison with a research of Aziz et al in Iraq, Mosul in 2020 that showed intestinal metaplasia 4% [28], and it is also higher in comparison with a study in Nepal, 2018 conducted by Hirachand et al which found intestinal metaplasia 4.57% [33], it is also in discordance with another work that showed intestinal metaplasia 4.1% [21] in a research that was done by Orajiah in 2022 in Saudi Arabia. In association with dysplasia, low-grade dysplasia was seen in 2.5% of cases in the present work and high-grade dysplasia was not enrolled in the recent study, in comparison with a study that published in India in 2018 by Somani and Patil which showed low grade dysplasia 1%, high-grade dysplasia 3% [37].

In concerning with gastric malignancy,

adenocarcinoma was the most common type in the present study 4.5% (seven out of nine cases were diffuse type adenocarcinoma, two out of nine cases were intestinal type adenocarcinoma), these result were in agreement with Aziz et al study in Iraq, Mosul in 2020 that showed adenocarcinoma 7% [28], and this work is in discordance with another study that conducted by the Dudyemi et al in Nigeria in 2014 which found adenocarcinoma 1.69% [38]. In this study gastric lymphoma was seen in 1% of cases (two cases lymphoma distributed as following one case was MALToma which is low grade lymphoma, one case was double hit lymphoma which is high grade lymphoma), in comparison with another study in Iraq, Mosul in 2020 which was done by Aziz et al that found lymphoma 3% [28] (three cases and all were MALToma) (Fig-5).

The prevalence of *H. pylori* is higher in developing nations where people live in close quarters, exhibit poor hygiene, have low socioeconomic position, and lack access to clean water, in addition to the factors that contribute to unsuccessful eradication of *H.pylori* which include high intragastric bacterial load, bacterial genotype, host genetic and antibiotic resistance, It is lower in nations with improved sanitation, more effective eradication methods, and extensive antibiotic use [39].

Regarding atrophic gastritis, intestinal metaplasia, and gastric carcinoma which vary among countries. That is, they are relatively high in countries with high prevalence of *H.pylori* infection, in addition to smoking, family history, epidemiologic, genetic, and environmental factors [21,39]. Early treatment of *H. pylori* might have clinical benefits by reversing the Para neoplastic lesions and decreasing the like hood of development of gastric cancer [17].

Conclusion

In the present study, females comprised the majority of patients with *H. pylori* infection. The most frequent clinical manifestation was epigastric pain. The majority of patients were between 20 and 29 years of age. Gastropathy was the most common endoscopic finding, while chronic superficial gastritis was the most common histopathological finding and was most

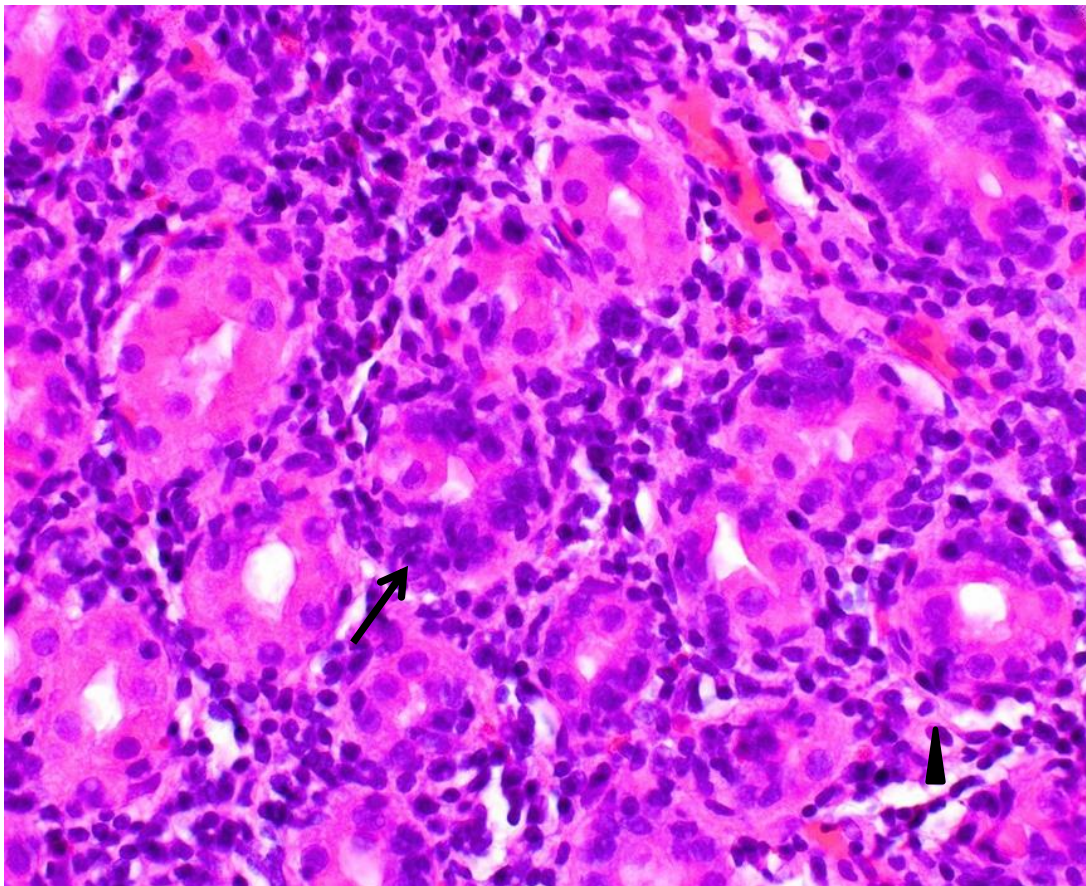


Fig-5:

Section of stomach shows dense proliferation of atypical lymphoplasmocytic infiltrate with lymphoepithelial lesion (black arrow) in MALToma with extensive plasmacytoid cells (arrow head) with small immature lymphocyte (H&E; 40x).

commonly seen in the age group of 20-29 years. Chronic atrophic gastritis was the most common in the age group of 30-39 years. Adenocarcinoma was the most common cancer considered in this study and was most commonly seen in females. Weight loss was the common clinical presentation in adenocarcinoma, while mass was the most common endoscopic finding in adenocarcinoma and was seen in the age group of 40-49 years.

Conflict of Interest

The authors have read and approved the final version of the manuscript. The authors have no conflicts of interest to declare.

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