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Epidemiological and Pathologic Characteristics of Gastric Polyps in Khorramabad in the West of Iran: A 10-Year Experience

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Abstract

Objectives: Gastric polyps are neoplastic lesions that are found in about 1% to 4% of patients who undergo gastroscopy. The present study aimed to have an epidemiological investigation on the endoscopic and pathological findings of gastric polyp patients in Khorramabad in the west of Iran.

Materials and Methods: This cross-sectional study was a 10-year experience in which seventy-two patients with gastric polyps were included from 2007 to 2016. Both descriptive and analytical statistics were performed and the chi-square or Fisher exact test was used for evaluating the intra-group associations at $P=0.05$.

Results: Demographically, most subjects were females and middle-aged. The drug history of taking proton pump inhibitors (PPIs) and past medical history of gastritis were positive in many patients. The body of the stomach was the most common anatomical site and the polyps were usually single. Morphology and pathology wise, most polyps were superficial and hyperplastic, respectively. A significant association was found between gender and anatomical site. Finally, most male patients had antral polyps whereas most female patients had body-sited polyps ($P=0.044$).

Conclusions: In general, the site of the polyp was gender-related in this region. The history of gastritis and taking PPI was prevalent like the other studies. Some gastric polyps are more at the risk of malignancy thus such polyps should be followed up in the patients.

Keywords: Polyps, Epidemiology, Endoscopy

Introduction

Gastrointestinal diseases like inflammatory disorders and digestive cancers are very important both in developed and developing countries. In addition, lifestyle and genetic variations of individuals are strongly associated with the epidemiology of such diseases. Hence, these diseases are preventable through improving the lifestyle. Knowing the physiopathology helps find better methods of diagnosis and treatment (1,2). The long-term gathering of information about gastrointestinal diseases helps the evidence-based decision making (3).

Gastric polyps are considered as neoplastic lesions that are found in nearly 1% to 4% of patients who undergo gastroscopy. Most polyps are sporadic while some of them are regarded as the indicators of an underlying syndrome. Gastric polyps also occur in Lynch syndrome (4). Further, fundic gland polyps are the most frequent ones in western countries because of the common use of proton pump inhibitors (PPIs) and other reasons. A meta-analysis supports the association of long-term PPI use (more than 12 months) with fundic gland polyps (5). Gastrointestinal stromal tumors are rather less frequent and few known associations are available, but they have a high potential for malignancy. Early diagnosis and appropriate management can increase survival. Furthermore, gastric neuroendocrine (carcinoid) tumors are important (6). Gastric polyps seem to show the progression of chronic gastritis to gastric atrophy and intestinal metaplasia (7). All polyps larger than one cm, as well as all symptomatic polyps and polyps with dysplasia or cancer should be removed, followed by obtaining random biopsies from the surrounding non-polypoid mucosa. Then, the detection of fundic gland multiple polyps with dysplasia should increase the suspicion for an underlying polyposis syndrome and it requires appropriate workup as well (8). According to (9), gastric polyps are usually asymptomatic.

Endoscopic findings and pathologic reports rise various questions which are not fully addressed in the guidelines.

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Accordingly, the present study aimed to conduct an epidemiological investigation regarding the endoscopic and pathological findings of gastric polyp patients in Khorramabad in the west of Iran.

Materials and Methods

Study Design

This cross-sectional study was a 10-year experience in Khorramabad located in the west of Iran. The ethnicities of people in this city are Lur and Lak (10). Seventy-two patients with gastric polyps were included from 2007 to 2016 using the census sampling method. The characteristics of gastric polyps were reported based on endoscopic findings and histopathologic reports. A complete history taking was originally performed by the first author for each patient. The investigated demographical features included age, gender, marital status, educational status, employment status, and residency in urban or rural areas.

Sample Diagnosis

The gastric polyps were diagnosed through endoscopic assay confirmed with an endoscopic biopsy and the report of pathology. All patients were diagnosed through an expert gastroenterologist. The information of the patients was fully documented, which was obtained from the comprehensive hospital management software that was available with the permission of our university.

Statistical Analyses

Both descriptive and analytical statistics were performed and the chi-square or Fisher exact test were used to evaluate intra-group associations at cutoff $P=0.05$.

Results

In the present research, 72 patients with gastric polyps were investigated during a 10-year period. The average age of the patients was 52.5 (±16.2) and the age range of the patients was between 17 and 85 years old. Gender distribution wise, 75% of the patients were females and 25% of them were males. Among the age groups, 23.6%, 43.1%, and 33.3% were under 40, between 40-59, and older than 60 years old, respectively. Similarly, most patients were married (84.7%) and urban residents (91.7%) and had guidance school education level and less (31.9%), the details of which are provided in Table 1.

The history of gastric polyps in first degree relatives was 4.2% and 8.3% of patients had a history of gastric cancer in their first degree relatives. Moreover, the history of colon polyps was positive in 5.6% of the patients and 2.8% of patients had a history of colon cancer in their first degree relatives. In one patient (1.4%), there was a self-history of colon polyp. Additionally, the history of smoking and alcohol was positive in six patients (8.3%) and one patient (1.4%), respectively. Likewise, the history of the regular using of proton PPI was positive in 47.2% of patients. The mostly used PPI was omeprazole (52.9%), followed by pantoprazole (23.5%). In 27 patients (37.5%), the history of gastritis was positive as well (Table 2). Table 6 presents the frequency distribution of the anatomical position of polyps. In addition, the body (51.4%) was the most anatomical site, followed by antrum (31.9%) and fundus (11.1%). There was one polyp in 50% of the patients while there were 2-10 and more than 10 polyps in 18.1% and 2.7% of them. Further, the size of the polyps was less than 0.5 cm and 0.5-1 cm in 48.6% and 44.4%, respectively. Morphology wise, 58.9% of the polyps were superficial and 41.1 of them were protruded. Pathology wise, most of them were hyperplastic (87.5%), followed by fundic gland (8.3%) and adenomatous (4.2%) polyps (Table 3). The morphological types of gastric polyps are shown in Figures 1 and 2.

Table 1. Demografic Characteristic of the Patients

Characteristic	Number (%)
Age	
<40	17 (23.6)
40-59	31 (43.1)
>59	24 (33.3)
Gender	
Male	18 (25)
Female	54 (75)
Marital status	
Married	61 (84.7)
Single	9 (12.5)
Other	2 (2.8)
Education	
Illiterate	13 (18.1)
Up to guidance	23 (31.9)
Diploma	19 (26.4)
Academic	17 (23.6)
Employment	
Unemployed	2 (2.8)
Clerk	10 (13.9)
Worker	1 (1.4)
Self-employment	9 (12.5)
Housewife	42 (58.3)
College student	6 (8.3)
Other	2 (2.8)
Residence	
Urban	66 (91.7)
Rural	6 (8.3)

Analytically wise, the difference between the anatomical position of polyps across genders was statistically significant ($P=0.044$) in which most polyps were antral (50%) in males and in the body (59.3%) in males and females, respectively. This difference was not statistically significant among the age groups. Furthermore, the morphology of polyps was not significantly associated with gender or age (Table 4). The pathological findings of polyps were not significantly related to gender or age (Table 5). In addition, the number and size of polyps were not significantly associated with gender or age (Table 6).

Discussion

This study was aimed to have an epidemiological

Table 2. Epidemiological Characteristics of Patients

	Number (%)
History of Gastric polyps in 1st degree relatives	
Yes	3 (4.2)
No	69 (95.8)
Gastric cancer in 1st degree relatives	
Yes	6 (8.3)
No	66 (91.7)
Colon polyps in 1st degree relatives	
Yes	4 (5.6)
No	68 (94.4)
Gastric cancer in 1st degree relatives	
Yes	2 (2.8)
No	70 (97.2)
Colon polyps in the patient	
Yes	1 (1.4)
No	71 (98.6)
Regular cigarette smoking	
Yes	6 (8.3)
No	66 (91.7)
Regular alcohol consumption	
Yes	1 (1.4)
No	71 (98.6)
Medication history of PPI	
Regular use of PPI	
Yes	34 (47.2)
No	38 (52.8)
Type of PPI	
Omeprazole	18 (52.9)
Pantoprazole	8 (23.5)
Lansoprazole	2 (5.9)
Omeprazole and pantoprazole	6 (17.6)
Total	34 (100)
Gastritis history	Number (%)
Yes	27 (37.5)
No	45 (62.5)

Table 3. Pathologic Characteristics of the Patients

Anatomical Site of Polyps	**Number (%)**
Body	37 (51.4)
Antrum	23 (31.9)
Fundus	8 (11.1)
Body and antrum	2 (2.8)
Fundus and antrum	1 (1.4)
Fundus and body	1 (1.4)
Number and Size of Polyps	**Number (%)**
Number	
1	50 (69.4)
2	13 (18.1)
3	5 (6.9)
4-10	2 (2.8)
>10	2 (2.8)
Size (cm)	
<0.5	35 (48.6)
0.5-1	32 (44.4)
1.1-2	3 (4.2)
2.1-3	2 (2.8)
Morphology and Pathology of Polyps	**Number (%)**
Morphology	
Protruded	30 (41.1)
Superficial	43 (58.9)
Pathology	
FGP	6 (8.3)
Adenomatous	3 (4.2)
Hyperplastic	63 (87.5)

investigation on the endoscopic and pathological findings of gastric polyp patients in Khorramabad as our 10-year original experience. Demographically, most subjects were females and middle aged. The family history and past medical history of gastrointestinal polyps were not positive in most patients. On the other hand, a drug history of taking PPI and past medical history of gastritis were positive in many patients and the most common anatomical site was the body of the stomach. The polyps were usually single as well. Morphology and pathology wise, most polyps were superficial and hyperplastic, respectively. A statistically significant association was found for gender and anatomical site. In other words, most male patients had antral whereas most female patients had body-sited polyps.

Sonnenberg and Genta aimed to use a national histopathology database for the clinical epidemiology evaluation of gastric polyps. They compared 71 575 cases of gastric polyps with 741 351 healthy controls and found

Figure 1. A Superficial Gastric Polyp During Polypectomy (Endoscopic View).

Figure 2. A Protruted Gastric Polyp During Polypectomy (Endoscopic View).

Table 4. Frequency Distribution of Anatomical Site and Morphology Based on Gender and Age

Variable	Anatomical Site				*P* Value	Morphology		*P* Value
	Body	Antrum	Fundus	Other		Protruded	Superficial	
	No. (%)	No. (%)	No. (%)	No. (%)		No. (%)	No. (%)	
Gender								
Male	5 (27.8)	9 (50)	2 (11.1)	2 (11.1)	0.044	7 (38.9)	11 (61.1)	0.890
Female	32 (59.3)	14 (25.9)	6 (11.1)	2 (3.7)		22 (40.7)	32 (59.3)	
Age								
<40	8 (47.1)	7 (41.2)	2 (11.8)	0 (0)	0.682	5 (29.4)	12 (70.6)	0.405
40-59	14 (45.2)	11 (35.5)	4 (12.9)	2 (6.5)		12 (38.7)	19 (61.3)	
>59	15 (62.5)	5 (20.8)	2 (8.3)	2 (8.3)		12 (50)	12 (50)	

Table 5. Frequency Distribution of Pathological Report Based on Gender and Age

Variable	Pathological Report				*P* Value
	Adenomatous	Hyperplastic	Fundic Gland Polyposis	Total	
	No. (%)	No. (%)	No. (%)	No. (%)	
Gender					
Male	1 (5.6)	17 (94.4)	0 (0)	18 (100)	0.326
Female	2 (3.7)	46 (85.2)	6 (11.1)	54 (100)	
Age					
<40	1 (5.9)	16 (94.1)	0 (0)	17 (100)	0.315
40-59	0 (0)	27 (87.1)	4 (12.9)	31 (100)	
>59	2 (8.3)	20 (83.3)	2 (8.3)	24 (100)	

Table 6. Frequency Distribution of the Number and Size of Polyps Based on Gender and Age

Variable	Number of Polyps				*P* Value	Size of Polyps				*P* Value
	1	2	3 & more	Total		<0.5	0.5-1	>1.1	Total	
	No. (%)	No. (%)	No. (%)	No. (%)		No. (%)	No. (%)	No. (%)	No. (%)	
Gender										
Male	13 (72.2)	5 (27.8)	0 (0)	18 (100)	0.117	6 (33.3)	11 (61.1)	1 (5.6)	18 (100)	0.257
Female	37 (68.5)	8 (14.8)	9 (16.7)	54 (100)		29 (53.7)	21 (38.9)	4 (7.4)	54 (100)	
Age										
<40	2 (70.6)	3 (17.6)	2 (11.8)	17 (100)	0.999	7 (41.2)	9 (52.9)	1 (5.9)	17 (100)	0.894
40-59	21 (67.7)	6 (19.4)	4 (12.9)	31 (100)		17 (54.8)	12 (38.7)	2 (6.5)	31 (100)	
>59	17 (70.8)	4 (16.7)	3 (12.5)	24 (100)		11 (45.8)	11 (45.8)	2 (8.3)	24 (100)	

that gastro esophageal reflux disease was more prevalent in fundic gland polyps while less prevalent in gastric adenomas or neuroendocrine tumors. Anemia was more prevalent in gastric hyperplastic polyps, gastric adenomas, or carcinoid tumors. *Helicobacter pylori* was significantly less common in patients. Moreover, gastric atrophy and intestinal metaplasia were more common in gastric adenoma and carcinoid tumors whereas less common in fundic gland polyps (7). According to an Iranian ecological study, the prevalence of *H. pylori* seropositivity in our region was lower than those of the other cities of Iran (11). However, its association gastric polyp should be investigated regionally. Familial adenomatous polyposis is a syndrome related to a mutation in adenomatous polyposis coli gene. The upper gastrointestinal tract can also be an involved extracolonic site in FAP patients. Nakamura et al found that fundic gland polyposis was observed in 64% of FAP patients (12). Finally, Lami et al evaluated 76 consecutive FAP patients who were treated by colectomy and reported that 69 (90.8%) patients had gastric polyps (13).

Limitations

The low number of subjects was the limitation of this study. The low incidence of gastric polyps even in this long period resulted in our low sample size.

Conclusions

In our study, most subjects were females and middle aged. In addition, the drug history of taking the PPI and past medical history of gastritis were positive in different patients. The most common anatomical site was the body of the stomach. Further, most male patients had antral whereas most of the female patients had body-sited polyps and the polyps were usually single. Morphology wise, most polyps were superficial, and pathology wise, most polyps were hyperplastic. Some gastric polyps are more at the risk of malignancy. Therefore, such polyps

must be followed up in the patients. Considering that the prevalence of gastric polyps is low, decreasing the usage of PPI is not suggested because such drugs have various benefits for gastrointestinal patients. Hence, this finding is just a scientific model regarding obtaining some knowledge about the physiopathology of gastric polyps.

Conflict of Interests

Authors have no conflict of interests.

Ethical Issues

The study was approved by the Ethics Committee of Lorestan University of Medical Sciences under the registration number of IR.LUMS.REC.1395.165. The figures were originally prepared during gastric endoscopy. Informed consent was obtained.

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