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Original Research Article

A Clinico-Pathological Study of Gastric Polyps and their Relationship with Helicobacter Pylori Infection at Katihar Medical College, Katihar, Bihar

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Abstract

Background: Stomach polyps are uncommon gastric abnormalities that are often asymptomatic and discovered by accident during an endoscopy. This study conducts a clinicopathological analysis of gastric polyps in hospitals in Katihar, Bihar, in light of the fact that some polyps are connected to Helicobacter pylori infection and can be a sign of upcoming malignancies.

Materials and Methods: From the archives of the pathology department of KMCH, Katihar, Bihar, the records of all the patients who had undergone endoscopy between January 2018 and March 2019 and had pathology reports of gastric polyps were extracted. Their demographic information, including age, gender, the anatomic site of the polyp, clinical symptoms, Helicobacter pylori infection, and the histopathology of the polyp, was examined and recorded in a pre-developed checklist. At a significance level of $P < 0.05$, the collected data were examined in SPSS-17.

Results: 25 (34.7% of the 72 patients investigated) were men, and 47 (65.3%) were women. In the group of people over 60, polyps were most common (n=33, 45.8%). The stomach body (n=38, 52.8%) was the anatomic region where the removed polyps were found most frequently. The most common clinical symptom among the patients (n=37, 51.4%) was abdominal pain, while the most common form of polyps found (n=46, 63.9%) was hyperplastic polyps. The majority of the polyps (n=41, 56.9%) lacked comorbid diseases. H. pylori infection was only found in 12 instances, nine of which were women. Most H. pylori infections were found in people between the ages of 45 and 60. Gender and gastric polyp H. Pylori infection did not significantly correlate.

Conclusion: According to the findings of earlier research on the subject, the likelihood of developing polyps rises with age, and since the majority of polyps are hyperplastic, there is a low likelihood that they would develop into cancer. Nevertheless, gastric polyps should be checked in everyone with idiopathic abdominal pain.

Keywords: Gastric, polyp, Helicobacter pylori, infection

Introduction

A polyp is an outgrowth from the mucosal surface that can be seen. The most prevalent benign gastric tumours that frequently form in the stomach antrum are epithelial polyps [1]. Gastric polyps are most commonly of the adenomatous, hyperplastic, hamartomatous,

inflammatory, and heterotopic (ectopic pancreas) types, and their prevalence in the general population ranges from 0.8% to 2.4% [2]. The majority of gastric polyps, called hyperplastic polyps (75%), are benign and can come in numerous forms. They typically arise in response to chronic inflammatory diseases and are less likely to progress to malignancy [2,3]. Although polyps can shrink, stay the same size, or grow over time, they frequently do so after the H. pylori infection has been treated [2,4]. Equally afflicted are men and women, who are most affected in mid- to late-adulthood. Even while adenomatous polyps have the potential to develop into cancer, very few of these lesions do so. H. pylori is a gram-negative, curved, flagellated bacillus that only lives in the stomach's epithelium or metaplastic epithelium and primarily settles in the innermost mucosal gel. This bacterium initially colonises the gastric antrum before moving laterally to additional nearby regions of the stomach. The most typical bacterial infection in the globe is caused by Helicobacter pylori (H. pylori). The prevalence of it is strongly correlated with age and ranges from 10% in those under 30 to 60% in those over 60 [4,5]. By the time people reach the age of 20, this virus affects more than 80% of the population and is more common in developing nations. A persistent active gastritis is always a contributing factor to H. pylori infection. Gastritis, peptic ulcers, mucosal associated lymphoid tumour (MALT) lymphoma, and stomach cancer can all be brought on by H. pylori infection [1,3,6]. Over time, the site of gastric polyps has shifted from the corpus to the antrum [7]. However, the majority of gastric polyps are connected with H. pylori infection, and half of hyperplastic gastric polyps are, too, according to published articles and past studies. The current study was done to look at the gastric polyps found in hospitals in terms of anatomic site, clinical symptoms, types, and concurrent H. pylori infection because hyperplastic gastric polyps frequently develop with an underlying gastritis and because gastritis is brought on by H. pylori infection.

Material and Methods

The pathology records of gastric polyps were put into the current retrospective, descriptive, and analytical investigation, which was carried out at Department of Pathology, Katihar Medical College, Katihar, Bihar from January 2018 to March 2019 utilising convenience sampling. Two pathologists took pathology slides out of the archives and checked them over for type. The patients underwent an examination in accordance with a predetermined checklist that included questions about age, gender, the year of the biopsy, endoscopic findings, biopsy results (type of polyp), the presence or absence of H. pylori infection, the anatomic site of the polyp, concurrent pathologies (such as intestinal metaplasia, acute and chronic gastritis, H. pylori infection, polyps in other sites, and celiac disease), and clinical symptoms (abdominal pain, vomiting, dysphagia, diarrhea, anaemic reflux, gastrointestinal bleeding, history of polyp and history of surgery). The collected data were entered into the checklist and subjected to Chi-square and Fisher's exact tests in SPSS-17 at the significance level of $P<0.05$.

Results

72 patients who had visited the pathology department of the Katihar Medical College in Katihar, Bihar, were the subjects of this study. Male patients made up 25 (34.7%), while female patients made up 47 (65.3%). Table 1 shows that 45.8% of the patients were over the age of 60. The stomach's body was most frequently impacted anatomically (n=38, 52.8%), while the pyloric region was least frequently (n=1, 1.4%). The majority of clinical symptoms (n=37, 51.4%) were reflux, dysphagia, diarrhoea, and abdominal pain (Table 2). The most frequent types of polyps were hyperplastic (n=46, 63.9%), while angiomatous and hamartomatous types

were less common (1.4% for each type; Table 1). Of the total number of polyps, 41 (56.9%) were free of concurrent diseases (Table 3). Epigastric pain was the most common clinical symptom in individuals with hyperplastic polyps (n=22; 47.8%), followed by melena and lower gastrointestinal haemorrhage (n=10; 21.8%). Upper gastrointestinal bleeding was the least prevalent clinical symptom (n=1, 2.2%). In both males (n=16, 34.8%) and women (n=30, 65.2%), hyperplastic gastric polyps were the most often discovered form (Table 4). Twelve of the 72 polyps had H. Pylori, with 75% of the female cases (n=9) and 25% of the male cases (n=3). Gender and gastric polyp H. Pylori infection did not significantly correlate.

Table1: Demographic characteristics of patients with gastric polyps

	Frequency N%
Gender	
Male	25(34.7%)
Female	47(65.3%)
Age group	
<45	13(18.1%)
45-60	26(36%)
>60	33(45.8%)
Anatomical site of polyps	
Body	38(52.8%)
antrum	18(25%)
Fundus	13(18.1%)
cardia	2(2.8%)
Pylorus	1(1.4%)
Polyp type	
Hyperplastic	46(63.9%)
inflammatory	16(22.2%)
Adenomatous	8(11.1%)
Angiomatous	1(1.4%)
hamartomatous	1(1.4%)
Helicobacter pylori infection	
Male	3(25%)
Female	9(75%)
Total	72(100%)

Table 2: Clinical characteristics of patients with gastric polyps

Related Clinical history	**Frequency (N)**	**%**
Abdominal pain, dysphagia, reflux	37	51.4
Anemia and melena	11	15.3
Previous Polyp or surgery	5	6.9
Without clinical symptoms	19	26.4
Total	72	100

Table 3: Pathology findings in gastric polyps

Concomitant pathology	Frequency (N)	%
Active and chronic gastritis	16	22.2
H. pylori infection	12	16.7
Additional polyps in other areas of GI	2	2.8
Celiac disease	1	1.4
Without any other pathology	41	56.9
Total	72	100

Table 4: Frequency distribution of gastric polyps based on gender

Polyp Type	Male N (%)	Female N (%)	Total
Hyperplastic	16(34.8)	30(65.2	46
Inflammatory	6	10(62.5	16
Adenomatous	2	6(75	8
Angiomatous	1	0(0	1
Hamartomatous	0	1(100)	1
Total	25(34.7)	47(65.3)	72

Discussion

In this study, female patients made up the majority of those with polyps. Similar to this, Cao *et al* study found that women were more likely than men to develop polyps [8]. They identified a correlation between polyps and gender in their analysis because the majority of the lesions were fundus gland polyps (FGPs), but in the current investigation, despite the higher incidence of female patients, there was no such correlation. The small sample size used in the current investigation may be to blame for the discrepancy between these two studies [8]. The majority of the polyps in the current study were in the stomach's body, which is consistent with the findings of Markowski *et al*., despite prior claims that the majority of gastric polyps form in the antral area [8,9].

The over-60 age group was the most frequently affected age group in this study, which contrasts with the findings of Fan N-N *et al*. (2015), who found that the 45 to 60 age group was most affected by gastric polyps and reported that the incidence of these growths decreased after the age of 60. In the current study, however, the incidence of polyps increased with age [7]. Despite there being no correlation between gender and the type of polyp, women were three times more likely than men to have H. pylori infection. Hyperplastic polyps were the most prevalent kind of polyp associated with H. pylori infection, according to a review of the literature [3,4,6]. The majority of polyps in the current study had no concurrent diseases, which is consistent with earlier investigations. The majority of polyps were found to be asymptomatic and were discovered incidentally in a study on the clinical symptoms of polyps by Markowski AR *et al*. Additionally, in the current study, abdominal pain was the most frequently reported clinical symptom [9]. The time factor, or the length of time since the development of the polyp, may be to blame for the discrepancy between the results of the current study and those of other studies, as most polyps manifest clinical symptoms decades after their incidence, whereas in hospitals that provide endoscopy services, polyps are discovered when they are smaller and still asymptomatic [8,9]. The age range of 45 to 60 was the one most commonly

infected with H. pylori in the current investigation. Although dyspepsia, heartburn, and upper gastrointestinal bleeding were the most common clinical symptoms linked to hyperplastic polyps in the study by Islam *et al*., and even though these symptoms were relatively common in the current study, no significant associations between the type of polyp and clinical symptoms were found in this investigation [10]. Hyperplastic polyps can appear as a single or many growths, either alone or in conjunction with familial polyposis syndrome (FPS) [6,7].

The majority of stomach polyps in the US are of the fundus type, while 25% to 71% of the polyps observed in the Markowski AR *et al* study were hyperplastic [9]. Hyperplastic polyps accounted up 69.3% of all the gastric polyps described in the current study. Hyperplastic polyps are more common in older adults than in younger adults and their prevalence rises with age [1,4]. These results are in line with the current findings that the age group over 60 has a higher prevalence of polyps and that hyperplastic polyps are the most common kind of polyp. Although studies have suggested a link between H. pylori infection and hyperplastic polyps, no significant associations between the kind of polyp found in the current study and H. pylori infection were found.

This result may be attributed to the study's small sample size. The majority of stomach polyps are asymptomatic and discovered by chance during endoscopic procedures carried out for other reasons. Some polyps appear as plaques in the endoscopic view, while others take the nodular or lobular forms or are attached without a stalk [7,9].

Contrary to the findings of comparable research, the majority of the patients in the current investigation reported clinical symptoms like abdominal discomfort, vomiting, dysphagia, diarrhoea, and reflux when they were first assessed. In the endoscopic view, gastric polyps do not significantly differ from one another in terms of type, so a histological analysis is necessary for their differentiation. However, the anatomic location of the polyps can help the endoscopist because fundus type polyps are not typically present in the antral area but adenomatous polyps are[5,7]. Based on their pathologic appearance, gastric polyps are separated into epithelial, hamartomatous, and mesenchymal types. In the current investigation, the patients' polyps had only been identified as gastric polyps after an endoscopic examination, and only the pathology report had made a distinction between them.

Conclusion

According to the findings of earlier research on the subject, the likelihood of developing polyps rises with age, and since the majority of polyps are hyperplastic, it is unlikely that they would develop into cancer. Nevertheless, gastric polyps should be checked in everyone with idiopathic abdominal pain. Gastric polyps do not appear to be primarily caused by H. pylori infection.

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