

# Prevalence and histopathological condition of gastric polyps in Central Anatolia

## Orta Anadolu bölgesinde gastrik polip prevalansı ve histopatolojik durumları

Ahmet KARAMAN<sup>1</sup>, Kemal DENİZ<sup>2</sup>, Hatice KARAMAN<sup>3</sup>, Şebnem GÜRSOY<sup>1</sup>, Mevlüt BAŞKOL<sup>1</sup>, Kadri GÜVEN<sup>1</sup>, Ömer ÖZBAKIR<sup>1</sup>, Mehmet YÜCESOY<sup>1</sup>

Departments of <sup>1</sup>Gastroenterology and <sup>2</sup>Pathology, Erciyes University, School of Medicine, Kayseri

Department of <sup>3</sup>Pathology, Kayseri Education and Research Hospital, Kayseri

**Background and Aims:** Gastric polyps are important, as some have malignant potential. If such polyps are left untreated, gastric cancer may develop. The prevalence and histopathological condition of gastric polyps vary between populations. We designed this study to evaluate the prevalence and histopathological behavior of gastric polyps in Central Anatolia in Turkey. **Materials and Methods:** The medical records of patients who underwent esophagogastroduodenoscopy in Erciyes University, Department of Gastroenterology, between August 2007 and August 2009 were reviewed. **Results:** A total of 11,598 patients (5,582 males, 6,016 females) were reviewed between August 2007 and August 2009. Sixty-nine (25 males, 44 females) of the 11,598 patients underwent biopsy for histopathological evaluation of gastric polyps. The overall prevalence of gastric polyps was found to be 0.59% in our study. Statistical analysis showed no correlation between polyp location and histopathological type of polyps. **Conclusions:** There is a high prevalence of malignant and premalignant histopathological types of gastric polyps in our region. A larger prospective study that evaluates the prevalence of *Helicobacter pylori* and more data are needed for a full understanding of the high incidence of gastric polyps.

**Keywords:** Gastric polyps, prevalence, histopathological behavior

## INTRODUCTION

A gastrointestinal polyp is a discrete mass of tissue that protrudes into the lumen of the stomach. Gastric polyps are typically found incidentally when an upper gastrointestinal endoscopy is performed for an unrelated indication. They rarely cause symptoms or other clinical signs. Gastric polyps are found in approximately 6% of upper gastrointestinal endoscopic procedures (1). They are important, as some have malignant potential. If such polyps are left untreated, gastric cancer may develop. The malignant potential depends on the histological type of the polyp. Gastric polyps are sessile or pedunculated lesions that originate in the gastric epithelium or submucosa and protrude into the gastric lumen. Histopathologically, they are separated into several groups, some of which are hyperplastic polyps, fundic gland polyps, gastric adenomas, and gastric carcinoid tumors. Hyperplastic polyps account for the majority (75%) of gastric polyps (2,3). They have a small but well-defined malignant potential, with an incidence of malignant change in the range of 0.5 to 7.1% (4). In addition, they may also indicate an increased risk of intestinal or extra-intestinal malignancy.

**Giriş ve Amaç:** Gastrik polipler bazılarında malign potansiyel olduğu için önem arzederler. Bazı polipler çıkarılmaz ise mide kanseri gelişebilir. Mide polibi prevalansı ve histopatolojik durumları toplumlara göre değişim gösterir. Bu çalışma Orta Anadolu Bölgesi'nde mide polibi prevalansı ve histopatolojik durumları değerlendirilmek için planlandı. **Gereç ve Yöntem:** Erciyes Üniversitesi Tıp Fakültesi Gastroenteroloji kliniğinde Ağustos 2007-2009 yılları arasında üst endoskopi yapılan hastaların tıbbi kayıtları taranarak yapıldı. **Bulgular:** Üst endoskopi yapılan 5582 erkek, 6016 kadın olmak üzere toplam 11598 hasta incelendi. 69 hastada (25 erkek, 44 kadın) mide polibi görülerek biyopsi alındığı tespit edildi. Buna göre gastrik polip prevalansı yaklaşık %0.59 olarak tespit edildi. İstatistiksel analizler polip yerleşim yeri ile histopatolojik durum arasında korelasyon olmadığını gösterdi. **Sonuç:** Bölgemizde malign ve premalign polip oranı tüm mide poliplerinin içinde oldukça yüksektir. Bu tür poliplerin yüksek sıklığının sebebini araştıran *H. pylori* ve daha fazla verinin değerlendirildiği geniş prospektif çalışmalara ihtiyaç vardır.

**Anahtar kelimeler:** Gastrik polip, malign polip, histopatolojik durumlar

tinal or extra-intestinal malignancy. Sporadic fundic gland polyps are benign lesions with little or no neoplastic potential. Gastric adenomas are often associated with underlying chronic gastritis with intestinal metaplasia and a higher incidence of malignant transformation than adenomatous polyps in the colon (5). Gastric carcinoid tumors may grow as a polypoid lesion in the stomach. They are subdivided into three groups, with type III gastric carcinoid being the most aggressive with high malignant potential.

The prevalence and histopathological condition of gastric polyps vary between populations. We designed this study to evaluate the prevalence and histopathological behavior of gastric polyps in Central Anatolia in Turkey.

## MATERIALS AND METHODS

The medical records of patients who underwent esophagogastroduodenoscopy in Erciyes University, Department of Gastroenterology, between August 2007 and August 2009 were

**Correspondence:** Ahmet KARAMAN

Alpaslan Mahallesi, Emrah Caddesi, Beyoğlu Apt. 21/3

Melikgazi/Kayseri/Turkey Postal Code: 38030

Fax: +90-352-437527 • E-mail: drkaraman@hotmail.com

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reviewed. The biopsy specimens of patients with gastric polyps were also reviewed in Erciyes University, Department of Pathology. All the specimens were reevaluated and classified by the same pathologist. Polyps were classified according to their layout in the stomach and histopathological diagnosis. Exclusion criteria were gastric mass and gastric carcinoma. This study was approved by the Erciyes University Ethics Committee.

## RESULTS

A total of 11,598 patients (5,582 males, 6,016 females) were reviewed between August 2007 and August 2009 (Table 1). Sixty-nine (25 males, 44 females) of 11,598 patients underwent biopsy for histopathological evaluation of gastric polyps. The mean age of patients with polyps was 58.7±13 years. Polyp location in the stomach was as follows: fundus in 7 (10.1%), corpus in 36 (52.2%), antrum in 25 (36.2%), and pylorus in 1 (1.4%). Hyperplastic polyps were observed in 47 (68%) cases, fundic gland polyps in 7 (10%) cases, villous adenoma in 1 (1.5%) case, high grade dysplasia (in the base of tubular adenoma) in 3 (4.5%) cases, neuroendocrine tumor in 8 (11.5%) cases, and adenocarcinoma in 3 (4.5%) cases. The overall prevalence of gastric polyps was found to be 0.69% in our study. Statistical analysis showed no correlation between polyp location and histopathological type of polyps.

## DISCUSSION

In a large series retrospectively evaluating gastric polyps that had been removed over a 20-year period from 4,852 patients, the incidence of hyperplastic polyps was 75.3%, and the incidence of adenomatous polyps was 10%. The major discrepancy was that 7.2% of the polyps were malignant (3). Car-

mack et al. (1) reported a large series of gastric polyp prevalence in the United States. The prevalence of gastric polyps was 6.35% in their study, and they found the relative prevalence of fundic gland polyps in their population was much higher than that reported earlier. They thought this was most likely due to the widespread use of proton pump inhibitors. Borch et al. (6) evaluated 85 patients with gastric polyps and found the risk of malignant gastric neoplasia increased in patients with hyperplastic polyps or adenomas. Ljubcic et al. (7) investigated the frequency, location, age, and sex distribution of various histological types of benign gastric epithelial polyps and found 42 benign gastric epithelial polyps in 31 patients, adenomatous gastric polyps in 7 patients, hyperplastic gastric polyps in 21 patients, and fundic gland polyps in 3 patients. All patients with hyperplastic polyps had chronic active superficial gastritis, whereas most of the patients with adenomatous polyps had chronic atrophic gastritis with a high prevalence of intestinal metaplasia. Among 21 patients with hyperplastic gastric polyps, 16 (76%) were positive for *Helicobacter pylori* infection in contrast to only 2 (29%) with adenomatous gastric polyps and 1 (33%) with fundic gland polyp. Rattan et al. (8) reported another study on gastric polyps. They evaluated 188 gastric polyps and found similar results with the literature. Archimandritis et al. (2) from Greece reported that the majority of polyps (75%) were hyperplastic, while noninvasive intraepithelial neoplasias, also called adenomas, were found in approximately 7% of patients. Similarly, in a study from Brazil, gastric polyps were found in 0.6% of 26,000 endoscopies (9). About 70% of gastric polyps were hyperplastic, while 12% were noninvasive intramucosal neoplasias (adenomas), and 16% were fundic gland polyps. In Western countries, the most commonly encountered polyps are fundic gland polyps because *H. pylori* infection is less frequent and proton pump inhibitor use is common (10). The frequency and most common type of gastric polyp vary widely depending upon the population studied. Hyperplastic polyps and adenomas are relatively more frequent than fundic gland polyps in regions where *H. pylori* infection is common (2,9). Although the prevalence of gastric polyps was lower in our study (0.59%) than in other studies (1), the ratio of premalignant and malignant type polyps was quite high (22%). If we consider that some hyperplastic polyps and adenomas arise in an atrophic stomach and are markers for cancer risk, this ratio will increase. Another point to be considered is the high ratio of neuroendocrine tumors. All the neuroendocrine tumors in our study were type 1 gastric neuroendocrine tumor.

We know that polyps related with proton pump inhibitor use are located in the fundal region of the stomach. In our study, the majority of the polyps were located in the corpus and the antrum (87.6%), and this data is in agreement with the literature but a bit higher than in other series.

**Table 1.** Demographic data and histopathological types of polyps

	N (%)
Total	11 598
Male	5 582 (48)
Female	6 016 (52)
Patients with polyp	69 (0.6)
Male	25 (36.2)
Female	44 (63.8)
Age	58.7±13
Polyp location	
Fundus-cardia	7 (10.1)
Corpus	36 (52.2)
Antrum	25 (36.2)
Pylorus	1 (1.4)
Histopathology	
Hyperplastic polyp	47 (68)
Fundic gland polyp	7 (10)
Villous adenoma	1 (1.5)
High grade dysplasia (Tubular adenoma)	3 (4.5)
Neuroendocrine tumor	8 (11.5)
Adenocarcinoma	3 (4.5)

Although we did not evaluate *H. pylori* prevalence in this study, some studies have reported a decrease in *H. pylori* seroprevalence in Turkey (11), but a high ratio (66.3% to 85%) still exists, and we know that some polyps have a close relationship with *H. pylori* infection. The cause of the high malignant and

pre-malignant polyp ratio in this study may be explained by the high ratio of *H. pylori* infection in Turkey. A larger prospective study that evaluates the prevalence of *H. pylori* and more data are needed for a full understanding of the high prevalence of malignant and pre-malignant gastric polyps in Turkey.

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