

Benign Epithelial Gastric Polyps – Frequency, Location, and Age and Sex Distribution

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ABSTRACT

Prospective investigation has been undertaken with the aim to study the frequency, location and age and sex distribution of various histological types of benign gastric epithelial polyps. Histological type - adenomatous, hyperplastic and fundic gland polyps - was diagnosed on the basis of at least three histological samples taken from the polyp. Biopsy samples were also taken from the antrum and the body of the stomach so that gastritis could be graded and classified, and the presence of H. pylori could be determined by histology. All 6,700 patients, who had undergone upper gastrointestinal endoscopy in a one-year period, participated in this study. Among them 42 benign gastric epithelial polyp were found in 31 patients: adenomatous gastric polyps in 7 patients, hyperplastic gastric polyp in 21 and fundic gland polyp in 3 patients. All patients with hyperplastic polyps had chronic active superficial gastritis, whereas most of the patients with adenomatous polyps had a chronic atrophic gastritis with high prevalence of intestinal metaplasia. Among 21 patients with hyperplastic gastric polyps, 16 (76%) patients were positive for H. pylori infection in contrast to only 2 patients (29%) with adenomatous gastric polyps and 1 patient (33%) with fundic gland polyp. Presented data indicates that hyperplastic gastric polyps are the most common and they are associated with the presence of chronic active superficial gastritis and concomitant H. pylori infection. Adenomatous polyps are rarer and they tend to be associated with chronic atrophic gastritis and intestinal metaplasia. Fundic gland polyp is the rarest type of gastric polyps.

Introduction

Data regarding the frequency, location, size, and the sex and age of the patients affected with the various types of benign gastric epithelial polyps have been quite confusing. This has been due in part to the use of different classification systems over the years^{1–3}. Since the introduction of a uniform classification of gastric tumors, including benign gastric epithelial polyps, by the World Health Organization (WHO)⁴, the disadvantages resulting from different nomenclatures have been eliminated. Therefore, the aim of the present prospective study was to evaluate the frequency and distribution of various benign gastric epithelial polyps found in our patient population for a period of one year, and to determine the correlations between the various histotype polyps and demographic features of the patients.

Material and Methods

From November 1996 to December 1997, 6,700 patients who had undergone upper gastrointestinal endoscopy at the two centers in Zagreb, Croatia, were candidates for participation in the study. Whenever benign gastric epithelial polyp was diagnosed, the referring physician was asked to enroll the patient according to the protocol⁵. Provided that patients met the inclusion criteria (i.e., the presence of gastric polyp) and gave their informed consent, they were included in the study.

Almost all patients (6,683 out of 6,700 patients, 99.7%) had a prolonged history of gastric symptoms before diagnosis, and most of them (4,256 out of 6,700, 63.5%) had already been given antacids or H₂ receptor antagonists, or both. Benign gastric epithelial polyps (adenomatous, hyperplastic and fundic gland polyps) were diagnosed on the basis of at least three

histological samples taken from the polyp. In seven patients endoscopy had to be repeated because forceps biopsy samples were inadequate for correct histological diagnosis. In only one of the 21 patients in whom endoscopic snare polypectomy was done, the histological diagnosis was modified after the entire polyp was made available (patient with adenomatous polyp).

Endoscopic biopsy samples were taken from the antrum (two samples) and the body of the stomach (two samples) so that gastritis could be graded and classified⁶, and the presence of *H. pylori* could be determined by histologic examinations. Slides were stained with hematoxylin and eosin, as well as Giemsa stain. Two other samples were taken from the antrum and body for the rapid urease test (CLO test; Delta West Ltd., Perth, Australia). The patients were considered to be positive for *H. pylori* when both histology and the rapid urease test were positive.

Follow-up examinations were performed by endoscopy. The follow-up ranged from 4 to 17 months, with a median of 14 months. The same endoscopist was involved in the follow-up as in the initial histological diagnosis of the gastric polyp.

Results

Among 6,700 patients, 42 benign gastric epithelial polyps were found in 31 patients. Thirteen adenomatous gastric polyps were found in 7 patients (two women, five men; median age, 67 years). Twenty-six hyperplastic polyps were found in 21 patients (nine women, 12 men; median age, 52 years). Three fundic gland polyps were found in 3 patients (two women and one man; median age 53 years). All patients except one with a solitary adenomatous polyp and one with a fundic gland polyp were symptomatic at presentation; the main symptoms were dyspepsia, pain and nausea. Two patients with hyper-

plastic polyps and one patient with adenomatous gastric polyp had associated with duodenal and gastric ulcer, respectively.

Frequency and location of benign epithelial gastric polyps were demonstrated in Table 1. All patients with hyperplastic polyps had chronic active superficial gastritis, whereas five (71.4%) of the patients with adenomatous polyps had a chronic

atrophic gastritis with high prevalence of intestinal metaplasia (Table 2). Four of the 21 patients (19%) with hyperplastic gastric polyps and two of the 7 patients (29%) with adenomatous polyps harbored multiple polyps. All patients with fundic gland polyp had solitary polyp each. Among 21 patients with hyperplastic gastric polyps, 16 patients (76%) were positive for *H. pylori* infection. Only two of

TABLE 1
FREQUENCY AND LOCATION OF BENIGN EPITHELIAL GASTRIC POLYPS

	Frequency (%) (N=42)	Location			
		Antrum	Body	Fundus	Cardia
Hyperplastic	26 (62)	19	5	2	–
Adenomatous	13 (31)	8	5	–	–
Fundic gland	3 (7)	–	–	3	–

TABLE 2
THE RELATION BETWEEN HISTOLOGICAL TYPE AND SIZE OF THE BENIGN EPITHELIAL GASTRIC POLYP, AND VARIOUS FORMS OF ASSOCIATED MUCOSAL CHANGES

	Hyperplastic (N=26)	Adenomatous (N=13)	Fundic gland (N=3)
Size of polyp (cm)			
< 1	19	3	3
1–2	5	7	0
> 1	2	3	0
Number of polyp			
Solitary	17	5	3
Multiple	9	8	0
Associated mucosal changes			
Chronic superficial gastritis	21/21	2/7	1/3
Chronic atrophic gastritis	0/21	5/7	0/3
Intestinal metaplasia	8/21	7/7	1/3
Dysplasia within the polyp			
Mild	0	6	0
Moderate	0	1	0
<i>Helicobacter pylori</i> infection			
Positive	16	2	1
Negative	5	5	2

TABLE 3
 RECURRENCE OF BENIGN EPITHELIAL GASTRIC POLYPS AFTER THERAPY WITH ENDOSCOPIC SNARE POLYPECTOMY OR ARGON PLASMA COAGULATION* DURING FOLLOW-UP

	Recurrence N (%)	No recurrence N (%)
Hyperplastic (N = 14)	1 (7.1)	13 (92.9)
Adenomatous (N = 6)	0	6 (100)
Fundic gland* (N = 3)	0	3 (100)

the 7 patients (29%) with adenomatous gastric polyps, and one of the 3 patients (33%) with fundic gland polyp were infected with *H. pylori*.

Endoscopic snare polypectomy was carried out in 9 patients with hyperplastic polyps in whom regression of the polyp was not observed after *H. pylori* eradication, as well as in 5 patients with hyperplastic gastric polyps who were *H. pylori* negative. Endoscopic snare polypectomy has been performed in 6 patients with adenomatous gastric polyps, whereas exploratory laparotomy and gastrotomy with polyp excision were carried out in one patient with multiple adenomatous polyps. Argon plasma coagulation of the gastric polyps has been performed in 3 patients with fundic gland polyp.

Recurrence of hyperplastic gastric polyp was recorded in only one patient, who was negative for *H. pylori*, during follow-up. No recurrence of adenomatous polyps, as well as of fundic gland polyp has been observed during the follow-up period (Table 3).

Discussion

Benign gastric epithelial polyps are uncommon lesions. Out of 6,700 gastroscopies performed over a period of one year, only 42 polyps were found in 31 patients (0.5%). Most of the benign epithelial gastric polyps belong to the category of hyperplastic polyps as has been previously reported^{7,8}. Among our patients

with benign epithelial gastric polyps there was a slight predominance of male which is different from the results of other authors suggesting that hyperplastic gastric polyps are significantly more common in women, while the other polyps are more or less equally distributed between the sexes⁸. However, no significant difference in the median age of the various groups of patients with gastric polyps were observed, so we agreed with the statement that it is not possible to distinguish histologic types of polyps by the demographic features of the patients^{9,10}.

The concept of a causal correlation between *H. pylori* positive chronic superficial active gastritis and hyperplastic gastric polyps has been suggested^{5,11}. It has been demonstrated that eradication of the *H. pylori* infection can lead to a complete regression of hyperplastic gastric polyps, particularly of those smaller than one centimeter in diameter⁵. Among the patients with adenomatous gastric polyps, the prevalence of *H. pylori* infection seems to be relatively low. In such patients, the successful eradication of the *H. pylori* infection did not lead to regression of polyps.

Gastric adenomas have a reported incidence of malignant transformation ranging from 6% to 75%^{12,13}. The risk of carcinomatous transformation is size-dependent, with a polyp size greater than 2cm suggested as being critical in the determination of malignant potential for

adenomatous polyps¹⁴. Malignant transformation of hyperplastic polyps ranges from 1.5% to 3%^{15,16}. Strong relationship between malignant transformation and the size of hyperplastic gastric polyps has not been elucidated as for adenomatous polyps. Dysplasia and carcinoma are more likely to be found on the surface of larger hyperplastic gastric polyps¹⁶.

The incidence of polyp recurrence after endoscopic snare polypectomy is relatively low, ranging from 0% to 16%^{8,9,15}. Our findings demonstrate that in great majority of patients no recurrence of either hyperplastic, adenomatous, or fundic gland polyps was recorded after successful endoscopic snare polypectomy.

In conclusion, our data indicates that hyperplastic gastric polyps are the most common, associated with the presence of chronic active superficial gastritis and concomitant *H. pylori* infection. Adenomatous polyps are rare, associated with chronic atrophic gastritis and intestinal metaplasia. Fundic gland polyps are very rare.

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BENIGNI EPITELIJALNI POLIPI ŽELUCA – UČESTALOST, LOKALIZACIJA TE NJIHOVA RASPODJELA PO DOBI I SPOLU

S A Ž E T A K

Literaturni podaci glede preraspodjele prema spolu i dobi te učestalosti, lokalizaciji i veličini benignih epitelijalnih polipa želuca nisu sukladni. Cilj ovog istraživanja bio je odrediti odnos između različitih histoloških tipova benignih epitelijalnih polipa želuca i demografskih karakteristika bolesnika s osvrtnom na recidive polipa nakon endoskopske polipektomije. U razdoblju između studenog 1996. i prosinca 1997. godine, 6700 bolesnika je gastroskopirano. Benigni epitelijalni polipi želuca (adenomatozni, hiperplastični i žljezdani polipi fundusa želuca) su dijagnosticirani histološki. Biopsije su također uzimane iz antruma i korpusa želuca kako bi se gastritis mogao klasificirati i stupnjevati, a istodobno odrediti i nazočnost infekcije s *H. pylori*. Bolesnici su praćeni tijekom razdoblja od 4 do 17 mjeseci s medijanom od 14 mjeseci. Između 6700 gastroskopija načinjenih tijekom jednogodišnjeg razdoblja, 42 benigna epitelijalna polipa želuca su nađena u sveukupno 31 bolesnika. Adenomatozni polipi želuca su nađeni u sedam bolesnika (dvije žene i pet muškaraca, prosječne dobi od 67 godina) dok je u 21 bolesnika (devet žena i 12 muškaraca prosječne dobi od 52 godine) histološki dokazan hiperplastični polip želuca. Žljezdani polip želuca nađen je u tri bolesnika (dvije žene i jedan muškarac prosječne dobi od 53 godine). Svi bolesnici s hiperplastičnim polipima želuca su imali kronični aktivni superficijalni gastritis. Većina bolesnika s adenomatoznim polipima želuca imala je kronični atrofični gastritis. Od 21 bolesnika s hiperplastičnim polipima želuca, 16 (76%) bolesnika je bilo pozitivno na *H. pylori*. Dva (29%) bolesnika s adenomatoznim polipima želuca i jedan (33%) bolesnik sa žljezdanim polipom fundusa želuca su bili pozitivni na *H. pylori*. Endoskopska polipektomija je načinjena u 14 bolesnika s hiperplastičnim polipima želuca i u 6 bolesnika s adenomatoznim polipima želuca. Recidiv nakon polipektomije je zabilježen u jednog bolesnika s hiperplastičnim polipima želuca. U zaključku možemo ustvrditi da su hiperplastični polipi najčešći među benignim epitelijalnim polipima želuca, udruženi s kroničnim aktivnim superficijalnim gastritisom i infekcijom s *H. pylori*. Adenomatozni polipi su rijetki, udruženi s kroničnim atrofičnim gastritisom i intestinalnom metaplazijom. Žljezdani polipi fundusa želuca su izuzetno rijetki.