

## A Study of Gastric Polyps in Albania

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### Abstract

**Background and aim:** Gastric polyps are usually asymptomatic and incidentally discovered during endoscopic procedure. Determination of gastric polyp type is important as the risk for malignant transformation. The polyps behavior and the risk for malignant transformation depends on their histopathological type. To this point, there are no other studies presented in Albania about the gastric polyps. The aim of the study is to assess the prevalence and histological characteristics of gastric polyps in patients underwent endoscopic polypectomy or forceps biopsy.

**Methods:** This study covers the period from January 2008 to December 2013, during which 6985 patients underwent a gastroscopy examination (EGD). During these procedures, 159 gastric polyps were discovered. After excluding from database patients with a history of prior gastrectomy, Crohn's disease, and treatment over a year with PPI and polyposis syndromes the remaining 89 from them were assessed. Medical history and demographic data were obtained from each patient. Forceps biopsy or polypectomy was performed and the tissue fragments were sent for histopathological evaluation.

**Results:** In this period 159 gastric polyps were discovered and 89 patients were included in the study. Histopathologically, the predominant type of polyps were hyperplastic (69) followed by adenomatous (9), inflammatory (9) and juvenile (2) polyps.

**Conclusion:** This study has shown a significant number of hyperplastic polyps. The number of female patients slightly higher than male patients.

**Keywords:** Stomach; Polyps; Endoscopy; Gastrointestinal

### Introduction

Gastric polyps are now diagnosed more frequently with the techniques for digestive endoscopy and can be studied using the material obtained by biopsy or polypectomy. In this study were analyzed the features of the polyps examined including size, morphological alterations and histological classification.

### Methods

#### Study population

The data of this study recorded 89 symptomatic patients referred in the period between January 2008 and December 2013 to perform an upper endoscopy examination (EGD) to one of two Endoscopic Clinic in Tirana, Albania. Demographic and clinical data, including endoscopic findings, clinical diagnosis or suspicion and histopathological diagnosis were registered in all cases.

Excluding criteria: history of prior gastrectomy, Crohn's disease, treatment over a year with PPI and polyposis syndromes.

### Endoscopy procedure

Endoscopy examinations were performed by two endoscopists using Narrow band Imaging NBI, EVIS EXERA II CV-180 Olympus™, high definition endoscopes. An opened biopsy forceps, measured 7 mm and opened polypectomy snare with known diameter were used for measuring the polyps before piecemeal resection. Small polyps were resected using cold forceps; meanwhile for medium-size polyps, cold snare polypectomy was used. On the other hand, snare supplemented with electrocauterization was used in case of supracentimeter polyps [1,2]. Finally, for large sessile polyps (>2 cm) endoscopic mucosal resection (EMR) was performed, using submucosal injection of saline creating a cushion for the polyp and then hot snaring the polyp either *en bloc* or piecemeal [3]

### Histopathological specimen examination

All specimens were histologically examined by two pathologists. The polypectomy specimens were carefully oriented, measured and processed. After fixation in 10% formalin, the specimens were embedded in paraffin and serial sections were stained with hematoxylin and eosin and other stains, as required. Afterwards, all

slides were examined under a light microscope, using 4×, 10× and 40× dry objectives.

### Classification of polyps

Polyps were classified as epithelial or nonepithelial based on the lesion site. Adenomatous polyps can be categorized as tubular, villous and tubulovillous [4]. These one were then divided into low-grade dysplasia adenomatous polyps, high-grade dysplasia adenomatous polyps. Presence of hypercellular stroma, large mucin-filled cysts, lack of smooth muscle core and flattened epithelium were used as criteria to diagnose a juvenile polyp. Finally, variable level of inflammatory infiltrate, ulceration, edema and granulation tissue were the criteria based on which the diagnosis of inflammatory polyp was made.

### Results

A total of 89 patients, of which 44 (49.4%) males, aged 57.5 ± 15.5 [standard deviation 15.5 years] and 45 (51.6%) females, aged 53.9 ± 14.5 [standard deviation 14.5 years] were examined and their data inserted in the statistical analysis. Non-adenomatous polyps accounted for 80 while adenomatous polyps accounted for 9 of study population. The most frequent polyp type by histopathological classification was hyperplastic (n=69), followed by the same number for adenomatous (n=9) and inflammatory (n=9), and juvenile (n=2) polyps. In total, the numbers of female patients were slightly higher than male patients. But this fact was different for adenomatous polyps with a significant number of male patients predominant (Tables 1 and 2).

	Total	Male	Female
Hyperplastic	69 (100.0)	35 (50.7)	34 (49.3)
Adenomatous	9 (100.0)	7 (77.7)	2 (22.3)
Inflammatory	9 (100.0)	2 (22.3)	7 (77.7)
Juvenile	2 (100.0)	0 (0.0)	2 (100.0)
Total	89 (100.0)	44 (49.4)	45 (51.6)

**Table 1:** Relationship between polyp type, age and gender

Polyp type	Total	Age average		P value *
		Male (44)	Female (45)	
Hyperplastic	69 (100.0)	59.5 ± 12.7	54.9 ± 15.6	0.3
Adenomatous	9 (100.0)	66 ± 12.9	33.0 ± 22.6	0.026
Inflammatory	9 (100.0)	51 ± 12.7	55.8 ± 9.2	0.5
Juvenile	2 (100.0)	0 ± 0	57 ± 15.5	N/A
Total	89 (100.0)	57.5 ± 15.5	53.9 ± 14.5	0.1

P value ≤0.05 is consider as statistical significance.

Size: Polyps were 0.5-4.0 cm in size. The most of them measured less than 1 cm (hyperplastic polyps 63 (91.3%); adenomatous polyps 5 (55.4%); inflammatory polyps 8 (88.9%) and juvenile polyps 2 (100.0%). In this study there was only one hyperplastic polyp 4 cm in size, four adenomatous polyps over 1.5 cm in size and one inflammatory polyp 1.6 cm in size.

**Table 2:** Mean age and standard deviation by types of polyps.

### Polyps size

Polyps were 0.5-4.0 cm in size. The majority 87.6 % of polyps were small (<1 cm), 9% were medium-sized (1-2 cm) and the rest 3.4% >2 cm (Table 3).

Small polyps (<1 cm) covered the absolute majority of all polyp types. In this study there was only one hyperplastic polyp 4 cm in size, four adenomatous polyps over 1.5 cm in size and one inflammatory polyp 1.6 cm in size (Table 4).

P value ≤0.05 is consider as statistical significance.

Polyp type	Polyp size			
	0.5-≤1 cm	<1 cm-2 cm	>2 cm	Total
Hyperplastic	63 (91.3)	5 (7.2)	1 (1.4)	69 (100.0)
Adenomatous	5 (55.4)	2 (22.3)	2 (22.3)	9 (100.0)
Inflammatory	8 (88.9)	1 (11.2)	0 (0.0)	9 (100.0)
Juvenile	2 (100.0)	0 (0.0)	0 (0.0)	2 (100.0)
Total	78 (87.6)	8 (9.0)	3 (3.4)	89 (100.0)

**Table 3:** Relationship between polyp type and size; the values indicate number of cases and percentage.

Tubular adenomatous polyps	Nr (%)	Polyp size
Low grade dysplasia	5 (55.5)	0.5-≤1.5 cm
High grade dysplasia	4 (44.5)	>1.5-4.0 cm
Total	9 (100.0)	

Adenomatous polyps were all tubular. Low grade dysplasia was found in 5 (55.5%) adenomatous polyps and high grade dysplasia foci were found in 4(44.5%) adenomatous polyps.

**Table 4:** Distribution of adenomatous polyps.

### Discussion

This study, the first conducted in in Albania, showed that hyperplastic polyps were the most frequent type. Establishing a diagnosis, classifying it into one of the general polyp categories and determining whether the lesion has been adequately excised, is important for the clinical management. Incidence of adenomatous polyps and their malignant potential is a concern as they are precursors of gastric cancers.

No association between gender and polyp size was observed in this study.

Gastric polyps are small lesions, which are asymptomatic in most cases and are generally discovered incidentally during endoscopic procedure. The clinical decisions related to the gastric polyps are generally disposed from the polyp size and the stomach region [5]. The gastric polyp may be found anywhere in the gastric mucosa. Clinically, some patients might have symptoms such as pain, nausea and vomiting. Superficial erosions of the polyp surface may affect occult bleeding. Anemia and digestive hemorrhage may happen in case of large ulcerated lesions. The hyperplastic polyp is the predominant gastric polyp in the study. Gastric hyperplastic polyps are frequently

associated with inflammatory disorders such as chronic gastritis, *H. pylori* gastritis, and reactive or chemical gastritis [6] and 80% of hyperplastic polyps will regress with *H. pylori* eradication, prior to endoscopic removal [7]. Hyperplastic polyps are usually sessile or pedunculated, are less than 2 cm in diameter [8]. In this study, HP were more frequent in the antrum, followed by the body and fundus.

Histologically HP introduce a proliferation of well-formed, elongated glands and crypts with serrated (saw tooth) or star-shaped appearance. Polyp formation is strongly associated with chronic gastritis; Helicobacter associated gastritis, pernicious anemia and reactive or chemical gastritis around gastroenterostomy stomas [9].

Hyperplastic polyps rarely become malignant, so they, generally, do not have neoplastic/ dysplastic changes. DAIBO et al. [10] submitted that HP could become malignant, although this was uncommon. Malignant transformation development is poorly agreed and few researchers have studied its histogenesis [11,12]. This makes difficult the decision if hyperplastic polyps should be endoscopically resected or simply biopsied. There is an absence of agreement that forceps biopsy sampling may miss the dysplastic foci within a hyperplastic polyp or not [13]. Some authors recommending a 2-cm minimum for polypectomy [14], while some others recommend resection of all polyps greater than 0.5 cm [15].

Gastric adenomas, or gastric polypoid dysplasia are true neoplasms and precursors to gastric cancer. Although commonly seen in countries with high gastric cancer rates (eg, Korea, Japan, and China), the management of small or asymptomatic a gastric polyp remains controversial [16].

Gastric adenomas are frequently solitary and most commonly found in the antrum. They are often flat or sessile and can range greatly in size, but most are greater than 1 cm. Polyps that are greater than 2 cm and have a higher risk of neoplasia (28%-40%) [17,18]. The presence of high-grade dysplasia is associated with an increased risk of invasive gastric cancer [19].

### Histopathological examination

There were 5 (55.5%) low grade tubular adenomas in this study and 4 (44.5%) high grade dysplasia, more than 1.5 cm in diameter. Only one was 4 cm in size, semi-pedunculated, with a central depression. Complete polypectomy of all epithelial gastric polyps larger than 5 mm is recommended by the experienced endoscopists, after thorough individualized risk-benefit analysis. All AP were removed by endoscopic snare polypectomy or partial gastrectomy (one polyp 4 cm). Nine inflammatory polyps (IP) and two juvenile polyps (JP) were removed by endoscopic snare polypectomy.

### Surveillance

Due to the increased risk of malignancy associated with these polyps, recommendations include complete removal of the adenoma, with further examination of the entire gastric mucosa for abnormalities, all of which should be biopsied. Additionally, endoscopic follow-up is required after resection at 6 months (for incompletely resected polyps or high-grade dysplasia) or 1 year (for all other polyps). However, the most effective and optimal surveillance protocol for adenomatous polyps is yet to be established.

### Conclusion

Gastric epithelial polyps are infrequent and most of them measure less than 1 cm. The digestive endoscopy is the safest and efficient method for the diagnosis of the gastric polyps that in most of the patients does not show characteristic symptoms. The histopathological definition of gastrointestinal polyps and recognizing the premalignant lesions is important for the clinical management of the patient. This study has shown a significant number of hyperplastic polyps. The number of female patient's slightly higher than male patients.

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