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Gastrointestinal Polypoid Lesions: The Albanian Reality

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Research Article

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ABSTRACT

Background: Gastrointestinal polypoid lesions are a well-known cause of possible future malignant lesions. Screening for these lesions, especially for colon polyps, has reduced morbidity and mortality from malignant tumors. To our best knowledge, no screening program on gastrointestinal polypoid lesions exists in Albania and no former study has been performed to check the distribution of these lesions. Therefore, our aim was to study the distribution of gastrointestinal polypoid lesions in a symptomatic outpatient population.

Methods: This study included five hundred seventy five consecutive patients referred to perform an endoscopic examination, regardless of their specific complains and of their possible diagnosis, to one of the two Endoscopy Centers in Tirana in the period between January 1st 2008 and December 31st 2013. At least one polyp was resected and histologically examined in all included patients.

Results: A total of 575 patients, of which 345 males (60.0%), aged 51.9 years (standard deviation 16.97 years), were examined and their data inserted in the statistical analysis. In total, 88 cases were identified with malignant pathologies of which 50 cases (56.8%) were males. No case of malignancy was diagnosed among the nine esophageal specimens, but among the specimens resected from the stomach, small intestine and large intestine, were respectively diagnosed 21 (20.0%), 9 (40.9%) and 58 (13.2%) malignant lesions. Patients with malignant lesions were older (57.4 ± 16.8 years old) in contrast to those with benign lesions (50.5 ± 17.0 years old) ($p = 0.004$).

Conclusion: Our study is the first one to offer figures on the polypoid lesions distribution and characteristics in the Albanian population. Large intestine is the main site where such lesions occur, but anyhow the small intestine presented a larger proportion of malignancy.

INTRODUCTION

Gastrointestinal polypoid lesions are a well-known cause of possible future malignant lesions. [1] Prevalence of such lesions is increasing in the Western Countries due not only to aging, but also to lack of physical activity and to diet poor in fibers and rich in lipids.[2] Screening for these lesions, especially for colon polyps, has reduced morbidity and mortality from malignant tumors.[3] Nevertheless, knowledge about distribution of the disease is a must for such screening program to be efficient and cost effective in a specific country.[4] Albania, a Western-Balkan post-communist country, is transiting towards EU accession, which also leads towards a western lifestyle and diet.[5] Albania also present a majority of Muslim residents, which may have a different diet pattern, totally excluding from it some sources of red meat, as pork meat, and alcohol. In such a country, to our best knowledge, no

screening program on gastrointestinal polypoid lesions exists and no former study has been performed to check the distribution of these lesions. Therefore, our aim was to study the distribution of gastrointestinal polypoid lesions in a symptomatic outpatient population.

METHODS

Study Population

This study included five hundred seventy five consecutive patients referred to perform an endoscopic examination, regardless of their specific complains and of their possible diagnosis, to one of the two Endoscopy Centers in Tirana in the period between January 1st 2008 and December 31st 2013. Only patients from whom a polyp was resected and histologically examined were included. After subscribing the informed consent form, all patients underwent physical examination, as well as endoscopic examination. Demographic and clinical data, including anatomic site, endoscopic findings and clinical diagnosis or suspicion, were registered in all cases. At least one polyp was resected and histologically examined in all included patient.

Endoscopy Procedure

Endoscopy examinations were performed by two independent endoscopists in two clinics 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 (1-3 mm) were resected using cold forceps; meanwhile for medium-size polyps (4-10 mm) cold snare polypectomy was used. [6,7,8]

Histopathological Specimen Examination

All specimens were histologically examined at the Department of Pathology, University Hospital Center "Mother Teresa", Tirana, Albania, by two independent pathologists. The polypectomy specimens were carefully oriented and processed. Hematoxylin and eosin staining was used on all sections. Immunostains were applied in all lymphoma cases. Afterwards, all slides were examined under a light microscope, using 4X, 10X and 40X dry objectives. Polypoid lesions were classified as epithelial or nonepithelial based on the lesion site. The next step was classifying polypoid lesions into neoplastic or non-neoplastic lesions. Finally, the World Health Organization (WHO) criteria were applied in order to assess dysplasia and architecture for adenomatous polyps.[9] These one were then divided into low-grade dysplasia adenomatous polyps, high-grade dysplasia adenomatous polyps, or invasive carcinoma (malignant lesion). Depending on the presence and volume of villous tissue, adenomatous polyps low or high grade, were classified as tubular, tubulovillous, or villous by the architecture. Adenomatous polyps invading across the muscularis mucosae layer were classified as malignant 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.

Statistical Methods

Categorical variables were described as frequencies; meanwhile continuous variables were described as means. Independent samples t-test was used to test for presence of statistically significant differences between groups, and the statistic value was chosen after testing the equality of variances using the Levene's test. Moreover, partial correlation was employed to check correlation between gender and age and the lesion type, size and anatomical site. Finally, 3 logistic regressions were performed to determine predicting risk factors for malignancy. In the analysis process, Statistical Program for Social Sciences (SPSS), version 21.0, was used.

RESULTS

A total of 575 patients, of which 345 males (60.0%), aged 51.9 years (standard deviation 16.97 years), were examined and their data inserted in the statistical analysis. Gender made showed no difference in terms of polypoid lesion size **(Table 1). Figures 1 and 2** display the distribution of the different types of polyps in the four segments of the gastrointestinal tract under study, which was significantly different between genders (Pearson chi-square, $p < 0.001$).g In partial correlation analyses, after adjusting for age, gender was associated with polypoid lesions anatomical site ($p = 0.001$) and polypoid lesions type ($p < 0.001$), but was not significantly associated to malignancy status and size of the polypoid lesions **(Table 2)**. The same associations appeared after correlating age, adjusting for gender **(Table 2)**. In total, 88 cases were identified with malignant pathologies of which 50 cases (56.8%) were males. No case of malignancy was diagnosed among the nine esophageal specimens, but among the specimens resected from the stomach, small intestine and large intestine, were respectively diagnosed 21 (20.0%), 9 (40.9%) and 58 (13.2%) malignant lesions. The Pearson chi-square test showed a significant association of malignancy with the anatomical site ($p = 0.001$), that was also confirmed by the one-way Anova test ($p = 0.001$). In independent samples t-test analyses, as expected malignancy was associated with the polypoid lesions size. In fact, 97.7% of the malignant lesions had a supracentimeter size, against 42.1% of the benign lesions ($p < 0.001$). There was no significant association between malignancy and gender. Regarding age, testing malignancy against it failed to show a significant association in the specimens resected from the stomach and small

intestine. Nevertheless, specimens resected from the colon demonstrated a highly significant association. In fact, patients with malignant lesions were older (57.4 ± 16.8 years old) in contrast to those with benign lesions (50.5 ± 17.0 years old) (p = 0.004). In the basic logistic regression model, adjusted only for age and gender, after defining the colon derived specimens as the reference category, malignancy resulted to have higher odds ratio in polypoid lesions resected from the small intestine (OR 4.96, 95%CI 2.00-12.33, p = 0.001), meanwhile no significant difference was shown with stomach polypoid lesions (p = 0.133). After further adjusting for polypoid lesions size, compared to colon specimens, not only the association became stronger for small intestine specimens (OR 29.68, 95% CI 5.32-165.54, p < 0.001), but also the association for stomach specimens became significant (OR 2.32, 95% CI 1.22- 4.42, p = 0.011) **(Table 3)**. Besides, the full model demonstrated a very strong association between polyps' size and malignancy (OR 109.47, 95% CI 21.15-566.47, p < 0.001). When an interaction term between size and localization was introduced into the model, it failed to show any significance (data not shown).

Table1. "Distribution by gender of polypoid lesions according to their anatomical site."

	Males	Females	Significance (p-value)
Number	345 (60%)	230 (40%)	
Age (mean ± sd) (years)	53.2 ± 16.1	49.8 ± 18.1	0.02
Polyp size >1 cm (%)	50.7	50.4	0.946
Esophagus polyps (%)	1.1	2.2	0.001
Stomach polyps (%)	14.5	23.9	
Small intestine polyps (%)	3.5	4.3	
Large intestine polyps (%)	80.9	69.6	

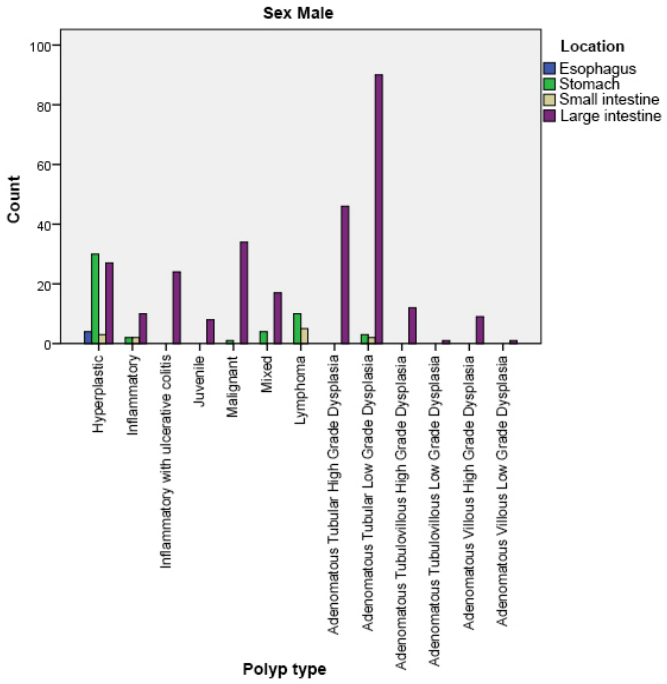

Figure 1

DISCUSSION

In our study we described for the first time the distribution and characteristics of the gastrointestinal polypoid lesions in the Albanian population. As depicted above, the main gastrointestinal segment affected by polypoid lesions is the large intestine, followed by the stomach, and a very small number of cases in the small intestine and esophagus, figures that run in line with data reported in former studies. Importantly, no malignancy was discovered in the esophagus, but especially the small intestine, followed by the stomach and the large intestine presented a high rate of malignant lesions. This has already been observed in former studies. Interestingly, the small intestine and the stomach resulted in a higher proportion of malignant lesions, compared to the large intestine. As we studied patients presenting intestinal symptoms of complains, this phenomenon may be due to the more serious and severe symptoms and signs connected to the development of polypoid lesions in a narrower anatomical segment of the intestinal tube, as the small intestine is compared to the large intestine.

The major strength of the study is the enrollment of all consecutive patients presented during a six-year long period in two different and independent Endoscopic Centers. This was followed by the examination of the specimens by two different pathologists at the same Pathological Laboratory that confirmed the diagnosis independently. The study also presents some limitations. First of all, the population may not be representative of the general healthy Albanian population, as the patients were referred for endoscopic evaluation due to gastrointestinal complains, therefore we cannot state that patient sampling was random. Besides,

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the catchment area of the two Endoscopic Centers can be hardly defined, but the total number of gastrointestinal polypoid lesions examined at our only national tertiary Pathological Laboratory roughly doubles our sample size, therefore limiting such a bias. Nevertheless, future research in random population-based samples may offer more accurate figures on the polypoid pathology.

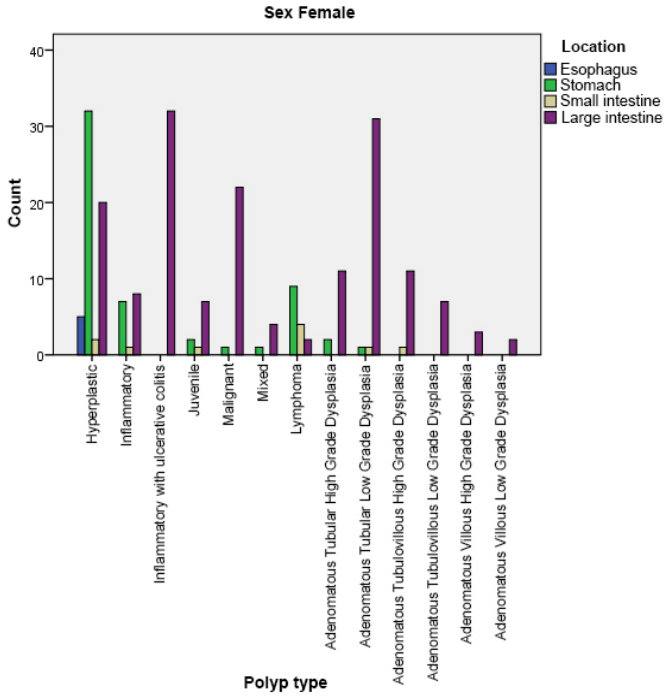

Figure 2

Table 2. "Correlations of age and gender with polypoid lesions characteristics."

		Age*	Gender**
Localization	Correlation	0.085	0.141
	p-value	0.041	0.001
Polyp type	Correlation	0.125	0.144
	p-value	0.003	0.001
Size >1 cm	Correlation	0.051	0.002
	p-value	0.224	0.960
Malignant lesions	Correlation	0.058	0.033
	p-value	0.165	0.428

* adjusted for gender. ** adjusted for age.

Table 3. "Association of the anatomical localization with malignancy."

Basic model*	Exponential beta	95 % CI	P value
Large intestine (reference)			
Small intestine	4.959	1.995, 12.326	0.001
Stomach	1.537	0.877, 2.696	0.133
Full model**	Exponential Beta	95 % CI	P value
Large intestine (reference)			
Small intestine	29.680	5.321, 165.539	<0.001
Stomach	2.319	1.217, 4.418	0.011

CONCLUSIONS

Our study is the first one to offer figures on the polypoid lesions' distribution and characteristics in the Albanian population. Large intestine is the main site where such lesions occur, but anyhow the small intestine presented a larger proportion of malignancy. Aging was associated to a higher rate of malignancy only in the large intestine; meanwhile there were no gender differences in malignant lesions.

REFERENCES

1. Najib YH, et al. Talbot Gastrointestinal Polyps December 2001. Cambridge University Press.
2. World Cancer Research Fund / American Institute for Cancer Research. Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective; Washington DC: AICR, 2007.
3. Mc Loughlin R and Morain CO. screening for colorectal cancer. Modern Medicine. 2004;34:19-28.

4. Joseph DA, King JB, et al. Prevalence of colorectal cancer screening among adults–Behavioral Risk Factor Surveillance System, United States, 2010. MMWR Morb Mortal Wkly Rep. 2012;61:51-56.

5. Paresh KN. Post-Communist Health Transitions in Central and Eastern Europe. Economics Research International. 2012;2012.

6. Tappero G, et al. Cold snare excision of small colorectal polyps. Gastrointest Endo. 1992;38:310-313.

7. Peluso F and Goldner R. Follow-up of hot biopsy forceps treatment of diminutive colon polyps. Gastrointest Endo. 1991;37:604-606.

8. Miller K and Waye J. Polyp retreival after colonoscopic polypectomy: use of the Roth retrieval net. Gastroint Endo. 2001;54:505-507.

9. Morson BC and Sobin LH. Histological typing of intestinal tumours. In: International Histological Classification of Tumours, No. 15. Geneva: World Health Organization, 1976.