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Detection of polyps in the small bowel of patients with acromegaly via capsule endoscopy

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ABSTRACT

Background: the prevalence of small bowel (SB) polyps is unknown in acromegaly patients.

Objective: to evaluate the prevalence of polyps/tumors in SB of acromegaly patients.

Material: this was a prospective and observational study that compared the prevalence of polyps/tumors using capsule endoscopy with a standard protocol in asymptomatic acromegaly patients and non-acromegaly patients, with abdominal pain, diarrhea or anemia.

Results: one hundred and eighty-three cases were included (61 acromegaly and 122 non-acromegaly). Polyps were found in six (9.8%) and three (2.5%) patients, respectively (RR: 4

[95% CI, 1.03-15.45; $p = 0.038$]). There were no differences in the tumors ($n = 4$, 6.6% vs $n = 7$, 5.7%).

Conclusions: acromegaly may be associated with more polyps in SB.

Keywords: Acromegaly. Small bowel polyps. Capsule endoscopy.

INTRODUCTION

Acromegaly is an endocrinological disease mainly caused by a pituitary adenoma (1). It has been shown that these patients have a greater prevalence of colon polyps compared with the general population (2), with a relative risk (RR) of 6.21 (3). Nevertheless, polyps of the small bowel (SB) are less frequent and are generally found in association with polyposis syndrome (4). The estimated prevalence of sporadic polyps of the SB is 4.6% and is usually an incidental finding (5). The incidence of these lesions is not well known in patients with acromegaly.

Capsule endoscopy (CE) has been shown to have greater sensitivity than radiological studies for the detection of polyps of the SB (6), as well as a high concordance with device-assisted enteroscopy (7). The objective of this study was to comparatively describe the prevalence of polyps of the SB in acromegaly patients by CE.

METHODS

A prospective, observational and analytical study was performed, which was authorized by the hospital Ethics and Research Committee (R-2017-3601-230). There were two cohorts of asymptomatic patients, with and without acromegaly, and with other indications including abdominal pain, chronic diarrhea and anemia. All cases who underwent a CE (PillCam™ SB3; Given Imaging Yokneam, Israel) between January 2018 and March 2019 were included in the study. All patients were prepared with two liters of polyethyleneglycol and an eight-hour fast. The gastric transit time (GTT) and small bowel transit time (SBTT) of the CE were considered, as well as a complete visualization, findings and complications. All CE were read at ten frames per second by a single endoscopist (experience > 500 CE

read). Patients with family polyposis, small bowel stenosis, small bowel occlusion and pregnant cases were excluded.

Statistical analysis

Qualitative variables were expressed as proportions. Quantitative variables were expressed as the mean (standard deviation) or median (25-75 interquartile range) and were analyzed using the Student's t and Mann-Whitney U test, based on their distribution. RR was calculated for the presence of polyps in the SB. The SPSS version 21.0 (IBM, OH, USA) was used. A $p < 0.05$ was considered as significant, with a 95% confidence interval (CI).

A sample size was calculated with a ratio of 2 to 1 in 183 patients (122:61) based on the only similar published article, which identified polyps in 28% of patients with acromegaly (RR 2.5) (8).

RESULTS

One hundred and eighty-three cases were included (mean age: 55.64 ± 16.22 , males 50.8%) in two cohorts of 61 patients with acromegaly and 122 non-acromegaly cases. (Table 1). A total of six (9.8%) polyps were found in the group with acromegaly and three (2.5%) in the non-acromegaly group, with an RR of 4 (95% CI: 1.03-15.45; $p = 0.038$). Furthermore, four tumors were observed in the group with acromegaly and seven in the non-acromegaly group ($p = 0.530$) (Table 2 and Fig. 1). The tumors identified in patients with acromegaly were gastrointestinal stromal tumors. Diagnosis was confirmed by surgery in two cases and by endoscopic ultrasound in two other cases, which were classified as low grade. Other findings identified by CE in patients with acromegaly were erosions in 16 cases (26.2%), angioectasias in seven (11.5%) and ulcers in five cases (8.2%).

DISCUSSION

The prevalence of polyps in patients with acromegaly in our study was 9.8%, which is far less than the 28% reported in the study by Ronchi et al., which is the only publication

reported to date that evaluates the prevalence of polyps by CE in this population (8). However, our study also found a significant difference between the presence of polyps in patients with acromegaly compared with those without acromegaly ($p = 0.038$). Another relevant datum is that the prevalence of polyps in the non-acromegaly patients in our study (2.5%) was lower than the 4.6% reported by Pannala et al., and the 12% rate observed by Xavier et al. (9) in patients with obscure gastrointestinal bleeding. The GTT was equal in both groups, but the SBTT of the CE was longer in patients with acromegaly, which was statistically significant. However, this prolongation in SBTT did not influence the complete visualization of the SB.

The prevalence of tumors in the SB varies from 2.4 to 8.9% (10). Our study identified tumors in 6.6% of patients with acromegaly and 5.7% in the non-acromegalic patients. The main limitation of our study is that non-acromegalic patients were not healthy, although it has not been described that patients with anemia, abdominal pain or chronic diarrhea have a greater prevalence of polyps than the healthy population.

In conclusion, our study shows that the prevalence of polyps in the SB in patients with acromegaly is greater than in patients without acromegaly. More studies are needed to determine if CE should be included in the general screening of patients with acromegaly.

REFERENCES

1. Matyjaszek-Matuszek B, Obel E, Lewicki M, et al. Prevalence of neoplasms in patients with acromegaly - The need for a national registry. *Ann Agric Environ Med* 2018;25:559-61. DOI: 10.26444/aaem/85652
2. Prencipe N, Floriani I, Guaraldi F, et al. ACROSCORE: a new and simple tool for the diagnosis of acromegaly, a rare and underdiagnosed disease. *Clin Endocrinol (Oxf)* 2016;84:380-5. DOI: 10.1111/cen.12959
3. González B, Vargas G, Mendoza V, et al. The prevalence of colonic polyps in patients with acromegaly: a case-control, nested in a cohort colonoscopic study. *Endocr Pract* 2017;23:594-9. DOI: 10.4158/EP161724.OR

4. De Latour RA, Kilaru SM, Gross SA. Management of small bowel polyps: a literature review. *Best Pract Res Clin Gastroenterol* 2017;31:401-8. DOI: 10.1016/j.bpg.2017.06.003
5. Pannala R, Ross AS. Small bowel polyps, arteriovenous malformations, strictures, and miscellaneous lesions. *Gastrointest Endosc Clin N Am* 2013;23:111-21. DOI: 10.1016/j.giec.2012.10.007
6. Pourmand K, Itzkowitz SH. Small bowel neoplasms and polyps. *Curr Gastroenterol Rep* 2016;18:23. DOI: 10.1007/s11894-016-0497-x
7. Sulbaran M, De Moura E, Bernardo W, et al. Overtube-assisted enteroscopy and capsule endoscopy for the diagnosis of small-bowel polyps and tumors: a systematic review and meta-analysis. *Endosc Int Open* 2016;4:E151-63. DOI: 10.1055/s-0041-108261
8. Ronchi CL, Coletti F, Fesce E, et al. Detection of small bowel tumors by videocapsule endoscopy in patients with acromegaly. *J Endocrinol Invest* 2009;32:495-500. DOI: 10.1007/BF03346495
9. Xavier S, Monteiro S, Magalhães J, et al. Capsule endoscopy with PillCamSB2 versus PillCamSB3: has the improvement in technology resulted in a step forward? *Rev Esp Enferm Dig* 2018;110:155-9. DOI: 10.17235/reed.2017.5071/2017
10. Rodrigues JP, Pinho R, Rodrigues A, et al. Validation of SPICE, a method to differentiate small bowel submucosal lesions from innocent bulges on capsule endoscopy. *Rev Esp Enferm Dig* 2017;109:106-13. DOI: 10.17235/reed.2017.4629/2016

Table 1. Population characteristics and data from capsule endoscopy

	<i>Acromegaly</i> (<i>n</i> = 61)	<i>Non-acromegaly</i> (<i>n</i> = 122)	<i>p</i>
Age (years)	55.90 (± 11.80)	55.85 (± 18.07)	0.880
Male	38 (62.3)	55 (45.1)	0.028*
GTT (min)	26 (10, 96)	26 (12, 48)	0.927
SBTT (min)	302.26 (± 115.35)	258.97 (± 110.58)	0.017*
Complete visualization	52 (85.2)	106 (86.9)	0.761
Complications	0	0	0.478

*Statistically significant. GTT: gastric transit time; SBTT: small bowel transit time.

Table 2. Polyps and tumors identified by capsule endoscopy

	<i>Acromegaly</i> (n = 61)	<i>Non-acromegaly</i> (n = 122)	<i>p</i>
<i>Tumors</i>	4 (6.6)	7 (5.7)	0.530
Location			
Duodenum	2	1	
Jejunum	2	3	
Ileum	0	3	
Size (mm)	20 (± 0.4)	21.5 (± 0.74)	
Histopathology			
GIST	4	6	
Adenocarcinoma	0	1	
<i>Polyps</i>	6 (9.8)	3 (2.5)	0.038*
Location			
Duodenum	0	1	
Jejunum	6	2	
Size			
< 5 mm	6	3	
Morphology			
Sessile	0	1	
Pedunculated	6	2	

*Statistically significant. GIST: gastrointestinal stromal tumor.

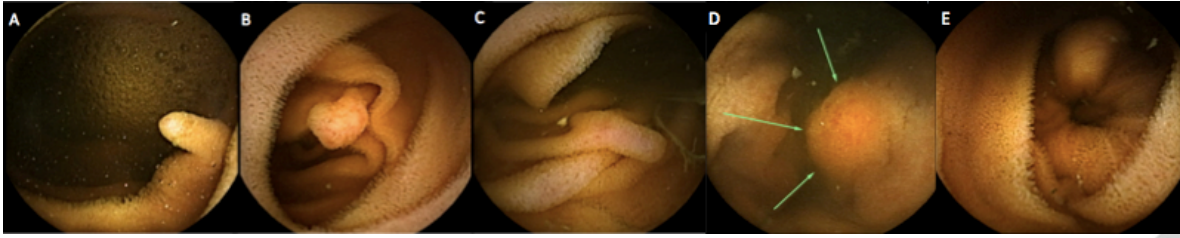


Fig. 1. A-C. Polyps in the small bowel of patients with acromegaly. D and E. Submucosal tumors in the small bowel of patients with acromegaly.

Accepted Article