

Digestive Thickening on Cross-Sectional Imaging: Etiological Assessment of Endoscopy

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DOI: <https://doi.org/10.36347/sasjm.2024.v10i12.004>

| Received: 15.10.2024 | Accepted: 27.11.2024 | Published: 07.12.2024

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Abstract

Original Research Article

Introduction: Digestive thickening on cross-sectional imaging is a challenge for gastroenterologists in cancer diagnosis. The aim is to study the contribution of ileocolonoscopy in the etiological assessment of digestive thickening visualized on imaging. **Materials and Methods:** This was a single-center study conducted from February 2019 to July 2024, including all patients with digestive thickening on cross-sectional imaging who underwent ileocolonoscopy. **Results:** Of a total of 2030 patients who underwent colonoscopy, 145 patients (7.14%) had digestive thickening on imaging. The mean age was 50.5 years, with a female predominance (sex ratio 0.82). 18 patients (12.5%) had a pathological history. Digestive thickening was discovered incidentally on imaging in 36 cases (24.8%), while 109 patients (75.2%) were symptomatic: 29% with abdominal pain, 19.3% with transit disorders, 11% with rectal syndrome, 7.6% with occlusive syndrome, 2.8% with iron-deficiency anemia, 2% with rectal bleeding, and 3.5% of patients had melaena. Colonoscopy was pathological in 83 cases (57.2%) and revealed the following lesions: ulcerative-bourgeoning tumor in 44 cases (30%) (of these, 15.8% in caecum, 11.8% in right colon, 38.16% in sigmoide, 13.16% left colon, 2.6% in transverse colon and 18.4% in recta), terminal ileitis in 18 cases (12.4%) (ulcerated in 54.8% of cases, stenosing in 32.2% and nodular in 13%), inflammatory colonic stenosis in 11 cases (7.6%), inflammatory pancolitis in 2 case (1.4%) and ulcerative rectitis in 8 cases (5.5%). Colonoscopy was normal in 62 cases (42.8%). **Conclusion:** Digestive thickening on cross-sectional imaging requires rigorous exploration to avoid missing a cancer. However, in our study, colonoscopy did not reveal a pathological lesion in more than a third of cases, requiring a review of the imaging technique and results. **Keywords:** Digestive thickening, Ileocolonoscopy, Cancer diagnosis, Cross-sectional imaging, Gastrointestinal pathology.

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INTRODUCTION

Computed tomography (CT) is widely available and being increasingly used to evaluate patients who present with abdominal symptoms [1]. One of the common findings on abdominal-pelvic CT, is that of bowel-wall thickening (BWT), especially in patients who present with abdominal pain [2]. It is a frequent reason for gastroenterologic consultation in our institution and request for endoscopic evaluation. Although clinicians' general approach to BWT is to perform colonoscopic examination to determine the aetiology, there is a lack of definitive recommendation guidelines [2]. The mural thickening (MT) may be a reflection of inflammatory, infective, ischaemic and neoplastic pathologies [3]. On the other hand, it may simply be due to benign strictures or collapsed segments of the colon.

Multiple studies have investigated the clinical significance of MT observed on CT imaging and its correlation with subsequent colonoscopic findings. In the present study, we aimed to determine the significance of BWT on CT by performing colonoscopy.

MATERIELS AND METHODS

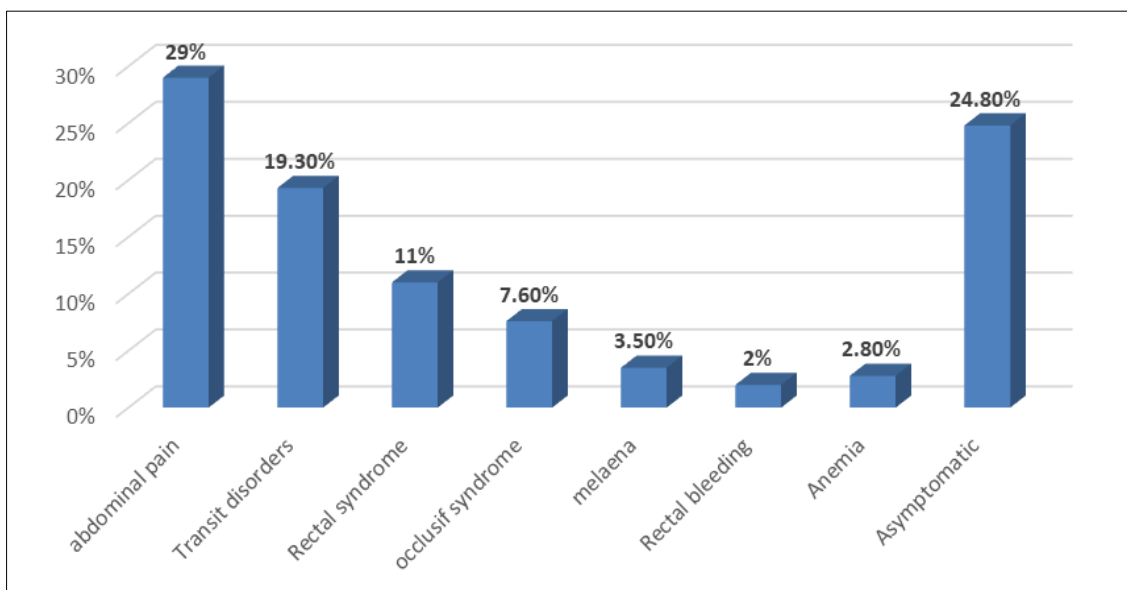
This was a single-center study performed retrospectively at our Gastroenterology department, conducted from February 2019 to July 2024, including all patients with digestive thickening on cross-sectional imaging who underwent ileocolonoscopy. Patients with clinical conditions that can make BWT, such as cancer and inflammatory bowel disease (IBD), were excluded. Data were collected from colonoscopy registries. All patients underwent a residue-free diet 3 days prior to colonoscopy, preparation with 4 liters of polyethylene glycol the day before the examination for total colonoscopy. Morphological findings of intestine during

endoscopy, including normal, skip lesions; deep ulcers; aphthous ulcers; stricture; and site of involvement, were carefully identified and noted.

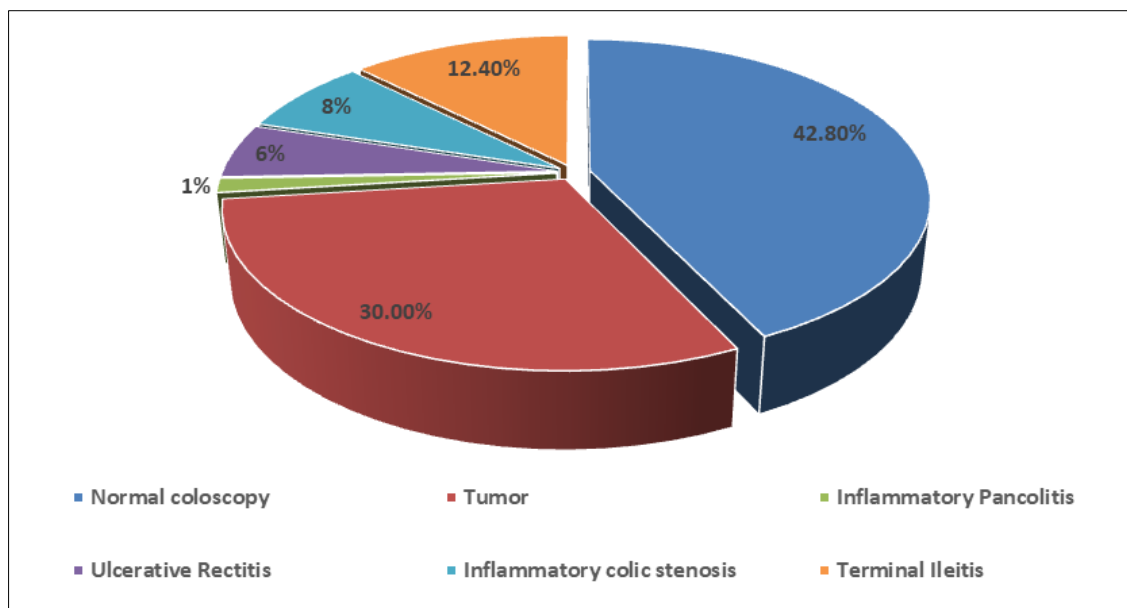
RESULTS

Of a total of 2030 patients who underwent colonoscopy, 145 patients (7.14%) had digestive thickening on imaging. The mean age was 50.5 years, with a female predominance (sex ratio 0.82). 18 patients (12.5%) had a pathological history: 1.4% were being followed for cholangiocarcinoma, 2% for peritoneal tuberculosis, 1.4% for celiac disease, 2.8% had first-degree family history of colorectal cancer, 3.5% had a history of extra-digestive neoplasia, and 1.4% had nephrotic syndrome. Digestive thickening was

discovered incidentally on imaging in 36 cases (24.8%), while 109 patients (75.2%) were symptomatic: 29% with abdominal pain, 19.3% with transit disorders, 11% with rectal syndrome, 7.6% with occlusive syndrome, 2.8% with iron-deficiency anemia, 2% with rectal bleeding, and 3.5% of patients had melaena. Colonoscopy was pathological in 83 cases (57.2%) and revealed the following lesions: ulcerative-bourgeoning tumor in 44 cases (30%) (of these, 15.8% in caecum, 11.8% in right colon, 38.16% in sigmoide, 13.16% left colon, 2.6% in transverse colon and 18.4% in recta), terminal ileitis in 18 cases (12.4%) (ulcerated in 54.8% of cases, stenosing in 32.2% and nodular in 13%), inflammatory colonic stenosis in 11 cases (7.6%), inflammatory pancolitis in 2 case (1.4%) and ulcerative rectitis in 8 cases (5.5%). Colonoscopy was normal in 62 cases (42.8%).



Graphic 1: Discovery circumstances of BWT



Graphic2: Results of colonoscopy

DISCUSSION

CT, especially after the introduction of multidetector helical scanning, has led to the increased detection of subtle gastrointestinal tract abnormal findings [3]. BWT is one of the important gastrointestinal tract abnormalities increasingly being detected on CT. It could be a manifestation of underlying infectious, inflammatory, ischemic, or neoplastic disease or may represent normal findings because of inadequate distension of the bowel [4]. Previously, the significance of intestinal wall thickness was evaluated by various studies, and most of the studies have concluded that patients with BWT on CT should undergo colonoscopy and biopsy as a majority of these patients will have an underlying disease [4]. This recommendation of endoscopy has been made because of the increased risk of neoplastic diseases. A study by Rockey *et al.*, [5], has shown BWT to be associated with significant pathology on colonoscopy in approximately 67% of patients. Moraitis *et al.*, [6], reported a positive correlation rate of 72%, while Wolff *et al.*, [7], reported that 73.9% of patients with MT had abnormalities on colonoscopy. Nicholson *et al.*, [8], reported a PPV of 72% for CT. In our study, we found that the PPV of BWT on CT scan for abnormal colonoscopic examination is 57.2%.

The incidence of colorectal cancer in patients with MT on CT has been variable, ranging from 14% to 27% [5-10], and most of the cancer patients included in such studies were asymptomatic. Moraitis *et al.*, [1], observed a neoplasia rate of 23% and a colon cancer rate of 14% in their small study. Tellez-Avila *et al.*, [10] reported a colon cancer rate of 20%. Patel *et al.*, [11], noted neoplasia in 13% and colon cancer in 8%. Uzzaman *et al.*, [9], reported a neoplasia rate of 35.7% and a cancer rate of 21.8%. In our study, we detected the neoplasia rate of 30%, while inflammatory disease ranged second with 26.9% of cases.

This study has some limitations, including selection bias because of a retrospective design and the lack of colonoscopy in all patients with BWT incidentally detected via CT. In addition, CTs were evaluated by only one radiologist, which might have had a negative effect on an objective interpretation of BWT characteristics. Furthermore, certain factors affect the appreciation of MT, such as the degree of distension and the presence or absence of oral contrast material, a variable not controlled in this study. Another foreseeable limitation was the variability of the time between CT and subsequent endoscopy. Some pathologies, for example, infectious colitis, may have resolved by the time the colonoscopy was performed.

CONCLUSION

In conclusion, the finding of BWT on CT scan had a high correlation with abnormal colonoscopic results. More than half of patients have a significant finding mainly cancer. Therefore, we suggest systematic

endoscopic evaluation for patients with BWT, even those who are asymptomatic.

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