



The necessity of routine terminal ileum intubation in patients undergoing routine colonoscopy: Is it a must?

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Abstract

Objectives

Terminal ileal intubation (TII) is a useful procedure during colonoscopy, but its clinical value is controversial in the literature. The aim of this study is to investigate the necessity of terminal ileal intubation during colonoscopy in patients not suspected of having inflammatory bowel disease.

Methods

This study was conducted by retrospectively reviewing data from 872 colonoscopies. Patients with inflammatory bowel disease and those with inadequate bowel preparation were excluded from the study. The demographic data of the patients, colonoscopy results, macroscopic and microscopic findings, and complications were recorded.

Results

The average age of the 763 patients included in the study was 53.26±23.82 years, with 429 (56.22%) male and 334 (43.78%) female patients. A total of 107 patients (14.02%) underwent TII. Of the 107 patients who underwent TII, 56 (52.33%) were female, and 51 (47.67%) were male, with an average age of 49.52±21.69 years. The colonoscopy indications for patients who underwent TII were diarrhea in 46 patients, rectal bleeding in 38 patients, and abdominal pain in 23 patients. Macroscopic pathological findings were observed in 8 patients (7.46%), and microscopic pathological findings in 3 patients (2.80%). The proportion of patients with microscopic pathological findings accounted for 0.39% of all colonoscopies.

Conclusions

Our study suggests that while TII, which requires experience and extends the duration of colonoscopy, may be beneficial for the diagnosis of selected patients, it may not be necessary in routine colonoscopies given its very low diagnostic value.

Keywords: Colonoscopy; terminal ileum; inflammatory bowel disease

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Introduction

Today, colonoscopy is considered the gold standard method for the diagnosis and treatment of colon diseases. The most common reason for performing a colonoscopy is colorectal cancer screening [1]. In addition, colonoscopy is used for the diagnosis of symptoms of irritable bowel syndrome, chronic constipation and diarrhea, iron deficiency anemia, differential diagnosis of abnormal radiological findings in the colon, investigation of occult blood in stool, removal of colon polyps, follow-up after colon cancer treatment, and diagnosis and follow-up of inflammatory bowel diseases [1,2]. Although colonoscopy is a common procedure, it can also lead to many complications [3].

There is uncertainty about whether the terminal ileum (the last part of the ileum) should be routinely intubated during colonoscopy, as its diagnostic value is unclear [4]. Current guidelines do not provide any recommendations for terminal ileum intubation (TII) if there is no suspicion for inflammatory bowel diseases [5]. Although, ileoscopy is not routinely performed, it may be beneficial for some patients in cases such as right lower quadrant pain, unexplained diarrhea, inflammatory bowel disease, hematochezia, and suspected ileocecal tuberculosis [6,7]. Ileocolonoscopy is the preferred procedure for chronic non-bloody diarrhea of unknown origin. Histopathological examination from multiple sites is crucial for diagnosing microscopic colitis [8]. The reported rates of TII during colonoscopy vary widely. Many endoscopy guidelines do not specify a particular rate for TII [9,10].

Given that TII prolongs the duration of colonoscopy and studies have shown that routine TII in patients without symptoms of inflammatory bowel disease does not contribute diagnostically, it becomes clearer why there is debate about the necessity of routine TII during colonoscopy [6,7,11,13]. Therefore, it is often thought that a colonoscopy limited to the cecum meets expectations.

The aim of this study is to determine whether routine TII is necessary in patients without a diagnosis of inflammatory bowel disease.

Methods

This study was conducted by retrospectively reviewing the medical records of patients who underwent colonoscopy at Özel Aktif Hospital between January 2021 and January 2024. The study commenced after receiving approval from the Clinical Studies Ethics Committee (date: 09.08.2024, No: 56). A total of 872 patients who underwent colonoscopy within the specified period were included in the study. Exclusion criteria were defined as having a known history of inflammatory bowel disease or having an incomplete colonoscopy due to contamination or other reasons. As part of our center's routine procedure, informed consent about the colonoscopy procedure is obtained from every patient prior to the colonoscopy. Colonoscopy procedures were performed by three different endoscopist with experienced at least two years and more than 1000 colonoscopy procedures.

For all colonoscopy procedures, patients were positioned in the left lateral position on the examination table, and anal inspection and digital rectal examination were performed before the procedure. The colonoscopy procedures were carried out using the single-hand technique. The colonoscopy was considered successful if the anatomical landmark of the cecum (Mercedes sign), the appendix orifice, or the ileocecal valve was visualized. The decision to perform TII was made by the endoscopist based on the patient's clinical condition. The demographic data of the patients, colonoscopy results, post-colonoscopy complications, and pathology reports if biopsies were taken during the colonoscopy were evaluated and recorded.

Results

A total of 763 patients were included in the study, with an average age of 53.26 ± 23.82 years; 429 patients

Table 1: The results of terminal ileum entubation (SD: standard derivation)

	Total Colonoscopy (n:762)	Terminal Ileum Entubation (n:107)
Age (year) (mean \pm SD)	53.26 \pm 23.82	49.52 \pm 21.69
Gender (Female) (n,%)	334 (43.78%)	56 (52.33%)
Macroscopic ileal pathology (n,%)	8 (1.04%)	8 (7.46%)
Microscopic ileal pathology (n,%)	3 (2.80%)	3 (0.39)

(56.22%) were male, and 334 patients (43.78%) were female. TII was performed in a total of 107 patients (14.02%). Of the 107 patients who underwent TII, 56 (52.33%) were female, and 51 (47.67%) were male, with an average age of 49.52 ± 21.69 years. Colonoscopy was performed for 46 (43.00%) patients due to bloody or non-bloody diarrhea, for 38 (35.50%) patients due to rectal bleeding, and for 23 (21.50%) patients due to isolated abdominal pain. No complications were observed after the colonoscopy, except for one patient who experienced spontaneous rectal bleeding following polypectomy, which resolved on its own.

In patients who underwent TII, biopsies were taken from the terminal ileum in 8 patients (7.46%) with ulcerative lesions or erythematous mucosa observed macroscopically in the ileum (figure 1). The rate of detecting macroscopic pathology in the terminal ileum among all colonoscopy patients was 1.04%. Histopathological examination in three patients with detected macroscopic pathology and who underwent TII revealed terminal ileitis, while no pathological findings were observed in other patients. The rate of pathological findings in microscopic examination was 2.80% among all TII patients, and 0.39% among all patients who underwent colonoscopy.

Discussion

Although TII is not a difficult procedure in experienced

hands, its low diagnostic value, the need for specific experience, the extension of the colonoscopy duration, and the requirement for certain maneuvers and learning curves make it impractical for many centers to implement in clinical practice [14]. In our study, diarrhea was the most common indication for TII, with macroscopic pathology observed in the terminal ileum in 7.46% of patients who underwent TII, and in 1% of all patients. The rate of patients with histopathological findings dropped to 0.4%.

While the current guidelines in the literature recommend routine TII during colonoscopy in patients with suspected inflammatory bowel disease, there is no recommendation regarding TII in colonoscopies performed for reasons other than inflammatory bowel disease [5].

In a large-scale study conducted for colorectal cancer screening, TII was performed in 21% of 6408 colonoscopies, with pathological findings in the terminal ileum observed in 68 patients (1%). Among these 68 patients, abnormal pathological findings were observed in 22 patients (32%) during histopathological examination, and only 3 of them (4.4%) required treatment. When considering all screening colonoscopies, the efficiency of TII was determined to be 0.04% [15]. In our study, the efficiency of TII was found to be 0.39% and had low values as reported in the literature.

In a study evaluating the results of patients who

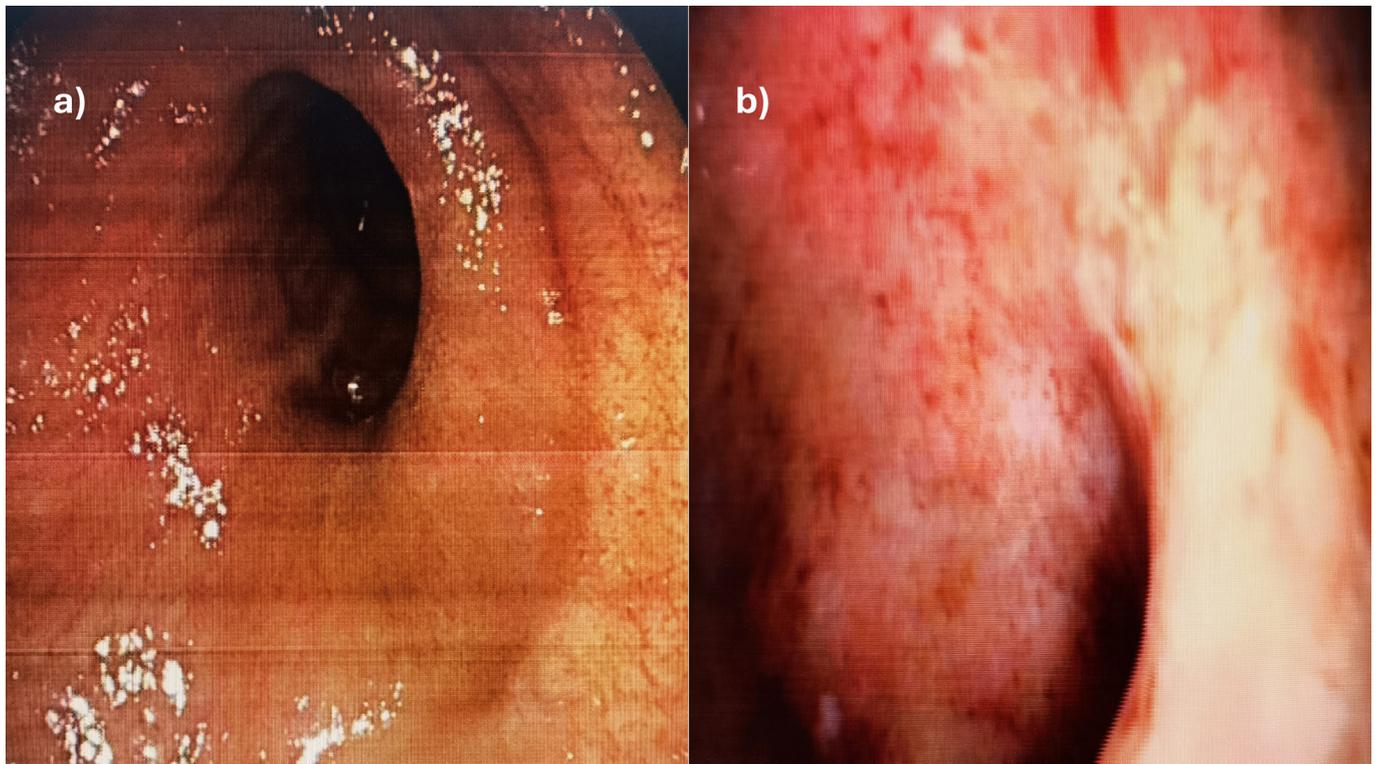


Figure 1: Examples of patients with terminal ileum intubation (a: Normal ileum, b: Ileum with inflamed)

underwent TII, macroscopic abnormalities in the terminal ileum were observed in 54 (20%) of 269 patients who successfully underwent TII, and biopsies in 4 (7.4%) of these 54 patients, and in 1.48% of all TII patients, were positive for Crohn's disease [6]. In a study assessing the necessity of TII in routine colonoscopy procedures, TII was performed in 511 (9.5%) of 5355 colonoscopies, with macroscopic findings identified in 3.52% of these patients. Histopathological examinations of biopsies from patients who underwent TII revealed terminal ileitis in 0.97% of TII patients, and in only 0.09% of all colonoscopies [7]. In a study evaluating 2473 colonoscopies of pediatric and adult patients, the rate of TII was found to be 40.8%, while this rate was reported as 38.2% for adult patients. A macroscopic pathological finding was detected in 3.7%, and microscopic pathology was observed in 1.58% of patients who underwent TII [16]. In our study, macroscopic pathological findings were observed in 7.46% and microscopic pathological findings in 2.80% of patients who underwent TII, which is not much different from the literature.

The limitation of this study is the fact that we are not a center that routinely follows up inflammatory bowel diseases and that the necessity of TII is determined by the endoscopist based on colonoscopic findings may cause an unintentional bias in patient selection. Also, the experience of the endoscopist could influence the TII rates and could change the results.

Conclusion

Our study shows that even in patients who underwent TII, the rate of detecting pathological findings is very low, dropping below 1% when compared to routine colonoscopies. TII, which requires experience and prolongs the colonoscopy procedure, may be beneficial for diagnosing selected patients, but it should not be performed in routine colonoscopies due to its very low diagnostic value. Prospective studies evaluating the necessity and cost-effectiveness of TII, especially in adult patients without a diagnosis of inflammatory bowel disease, will contribute to the literature.

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Ethical Declaration: Ethics committee approval was obtained from local Clinical Studies Ethics Committee (date: 09.08.2024, No: 56).

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