

Painless Colonoscopy: A Pilot Study of a 5.9-mm Endoscope for Routine Colonoscopy

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To the Editor: Painless intubation is extremely important to avoid perforation during colonoscopy. Ultrathin colonoscopes and standard gastroscopes (9.2–9.8 mm) can increase the proportion of patients with painless intubation, but there remain approximately 10% patients who suffer from moderate or severe abdominal pain.^[1] Sedation and anesthesia during colonoscopy could alleviate patient's suffering and improve the success rate of colonoscopy, but warning effect of abdominal pain disappears and the risk of perforation is increasing.^[2] In this paper, a transnasal gastroscope (5.9 mm) was used to simulate the ultrathin colonoscope for examination. The authors hypothesized that none of the patients would have severe abdominal pain in this study, demonstrating good safety of transnasal gastroscope on colon examination.

One hundred patients scheduled for colorectal cancer screening and diagnostic examination at the First Affiliated Hospital of Harbin Medical University from December 2013 to February 2014 were sequentially enrolled. Inclusion criterion was patients aged 18–80 years old. Exclusion criteria were as follows: (1) poor bowel preparation, (2) history of colon resection, (3) recent intestinal obstruction, (4) inability to correctly understand the visual analog scale (VAS), and (5) inability to sign the informed consent. This study was approved by the ethics committee of our hospital (No. 201405). All patients signed informed consent before examination. The procedures were completed by an endoscopic expert who has performed more than 10,000 procedures. The colonoscopies were performed with the transnasal gastroscope (EG-530NW, Fujinon, Tokyo, Japan). The diameter of the insertion part was 5.9 mm. The water-aided method was employed under nonsedation or nonanesthetized conditions. Cecum intubation time over 30 min was defined as unsuccessful. Patients in whom there was a failure to reach the cecum with transnasal gastroscope would be examined again using standard colonoscopy. We calculated abdominal pain score using the VAS, cecal intubation time (min), success rate of cecum intubation (%), and adenoma detection rate (ADR; %) as observation indicators.

Ninety patients were included in the study at the end of the procedures. All subjects' abdominal pain scores were ≤ 2 points, median 0 (0–2) point. A total of 91.1% of patients (82/90) had zero points and 8.9% (8/90) had 1–2 points. The success rate of cecal intubation was 73.3% (66/90). In these 66 successful intubated patients, the proportion of cecal intubation time

within 15 and 15–30 min was 65.2% (43/66) and 34.8% (23/66), respectively. The median cecal intubation time was 13.8 (3.7–51.8) min among the 90 patients. The adenoma detection rate was 22.2% (20/90).

Abdominal pain during colonoscopy was mainly due to mesentery stretching. Excessive mesentery stretching may increase the risk of mesenteric tear and bowel perforation during insertion.^[3] In the present study, 91.1% of patients acquired painless intubation (VAS = 0), the VAS score of other patients is 1–2 points. These findings suggested that using transnasal gastroscope for colon examination was almost painless and was very safe.

The median time for reaching the cecum with a standard colonoscope is <10 min.^[4] Longer cecal intubation time is the disadvantage of transnasal gastroscope, with the median time of 13.8 min in this study. However, it was an almost painless examination, and 73.3% of patients were completed within 30 min, compared with the entire procedure duration involving sedation and anesthesia for standard colonoscopy (including preoperative preparation and postoperative recovery). Considering similar pain-free effects, the entire procedure did not require more time.

The ADR was 22.2% (20/90) in this study, substantially higher than that of the standard colonoscopy, which was 13.4–18.3% with water method in a recent report.^[5]

Therefore, transnasal gastroscope for colon examination was not only safe but also satisfactory in ADR.

The cecal intubation rate of 73.3% (66/90) with the transnasal gastroscope was low and disadvantageous, compared with the 90–95% rate for standard colonoscopy.^[6] Because soft insertion of a 5.9-mm transnasal endoscope allows easier looping while passing through the sigmoid colon, under the specific conditions of some patients, we were unable to prevent looping by manipulation attributed to the failure of cecum insertion.

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Access this article online

Quick Response Code:



Website:
www.cmj.org

DOI:
10.4103/0366-6999.228250

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Received: 29-12-2017 **Edited by:** Ning-Ning Wang
How to cite this article: Yang YL, Li SS, Wang XB, Li JN. Painless Colonoscopy: A Pilot Study of a 5.9-mm Endoscope for Routine Colonoscopy. Chin Med J 2018;131:857-8.

In conclusion, the 5.9-mm endoscope for colon examination is a painless and safe procedure, and it is worthy of further investigation.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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