



# The importance of defecography in the assessment of the etiology of chronic constipation: An analysis of 630 patients

Mehmet Abdussamet Bozkurt, Ali Kocataş, Ahmet Sürek, Burak Kankaya, Mustafa U. Kalaycı, Halil Alıç

## ABSTRACT

**Objective:** Chronic constipation is an entity with a high prevalence in the community. In our study, we analyzed the importance of defecography in the assessment of the etiology of chronic constipation.

**Material and Methods:** Patients who were admitted to our hospital outpatient general surgery clinic with complaints of constipation between July 2010 and January 2014, and who had their demographic data and defecography results recorded were included in the study. The demographic data of patients who underwent defecography and their results were recorded along with patient gender and age.

**Results:** The defecography was abnormal in 573 patients (90.9%) while it was normal in 57 patients (9.1%).

**Conclusion:** Defecography is the current standard method of examination in etiological investigations for constipation, and it should be performed in each patient with a diagnosis of chronic constipation.

**Key Words:** Chronic constipation, defecography, rectocele

## INTRODUCTION

Chronic constipation is a frequent condition (1, 2). Colonic transit time measurement, defecography and anal manometry can all be used to determine the etiology of chronic constipation (3). Although it is assumed that the measurement of the colonic transit time distinguishes between slow passage constipation and outlet obstruction, the test may not be helpful in differentiation of these causes depending on the patient's diet (4).

Defecography may enable the identification of pathologies that cause outlet obstruction (5). There are studies supporting the usefulness of defecography in demonstrating the etiology in patients with normal colonic transit time and those with outlet obstruction (6).

In our study, we investigated the requirement for defecography, independent of other etiological examination tests, for patients diagnosed with chronic constipation according to the Rome III criteria.

## MATERIAL AND METHODS

Patients who presented to the general surgery outpatient clinic of our hospital between July 2010 and January 2014 were included in the study. The diagnosis of constipation was made according to the Rome III criteria. The patients with a Rome III assessment score of 2 and above underwent defecography in order to investigate the etiology of constipation.

As part of the etiological examination for chronic constipation, the patients initially received a test demonstrating the colonic transit time. Patients who were diagnosed with obstructive defecation or with a normal colonic transit time underwent defecography in the second stage.

Defecography was conducted in the endoscopy unit of our hospital by general surgeons. For the procedure, the contrast material was mixed with starch flour to provide a consistency similar to stool, and was administered via 50 cc cone tip injectors. Then, a series of images were captured while the patients were being asked to repeat the straining-retaining processes for three times.

Defecography results were recorded as well as gender and age.

## RESULTS

Between July, 2010 and January, 2014, 715 patients presented to the general surgery outpatient clinic with a complaint of constipation. When assessed as per the Rome III criteria, 85 patients were assessed as not having chronic constipation. 630 patients with a Rome III score of 2 and above were included in the study.

Clinic of General Surgery, Dr. Sadi Konuk Training and Research Hospital, İstanbul, Turkey

### Address for Correspondence Mehmet Abdussamet Bozkurt

Clinic of General Surgery, Dr. Sadi Konuk Training and Research Hospital, İstanbul, Turkey  
Phone: +90 212 414 71 59  
e-mail: msametbozkurt@yahoo.com

Received: 12.05.2014  
Accepted: 29.07.2014

©Copyright 2014  
by Turkish Surgical Association  
Available online at  
www.ulusalcerahidergisi.org

585 (92.8%) of the patients were female and 45 (7.1%) were male. The mean age of patients was 46.3.

According to the colonic transit time measurements, 36 patients had prolonged colonic transit, 78 patients had outlet obstructions, while the results were normal for the remaining 516 patients.

On defecography, 573 (90.9%) patients were observed to have pathology, while 57 patients (9.1%) were evaluated as normal.

The most frequently identified pathology among 585 female patients was anterior rectocele, which was observed in 460 patients (78.6%). While anterior rectocele was accompanied by mucosal intussusception in 221 patients (37.7%), 26 patients (4%) were observed to have only internal mucosal intussusception. Fifty one patients (8%) were observed to have puborectal spasm and 16 patients (2.7%) had total pelvic floor descensus. Thirty patients (5.4%) were observed to have no pathologies.

Among patients with a normal colonic transit time, a pathology was identified in 345 patients by defecography. No pathologies were observed in 25 out of 45 male patients (55.5%), whereas 14 patients (31.1%) were observed to have internal mucosal intussusception and 6 patients (13.3%) puborectal spasm.

## DISCUSSION

Defecography is an important diagnostic method that provides information on anorectal anatomy and function. The high frequency of factors that are effective in the development of pelvic floor diseases such as giving birth, obesity and elderly age, result in an incidence as high as 24% among women, whereas this rate is 2% among men. This data supports the view that patients present with constipation, secondary to outlet obstruction, and that defecography is the essential diagnostic tool.

The incidence of rectocele on defecography among asymptomatic patients is reported to be 80% (8). However, no symptoms are observed especially for rectoceles that are below 2 cm and operation is generally not required. Even though the presence of rectocele is identified at a rate of 40% with rectal examination, defecography is necessary in order to determine the range of the defect (9). Furthermore, patients with both internal mucosal intussusception and rectocele on defecography may benefit from biofeedback treatment at a rate of up to 70% (10). The follow-up of these patients is also similarly conducted by means of defecography.

Approximately 20% of patients with slow colonic transit have an accompanying obstructive defecation syndrome, and this situation should be kept in mind especially during the decision to choose surgical treatment. This accompanying pathology may lead to failure of operation in especially patients who have slow colonic transit, or an unnecessary surgery (11).

Defecography has an undeniable value for the diagnosis of pelvic discharge syndrome. The diagnosis of patients with pathologies causing outlet obstruction such as rectocele, enterocele and internal intussusception is made only on the basis of

defecography. Defecography aids in verification of the diagnosis of recto-anal inhibitory reflex loss that is identified with anorectal manometry (12).

While intussusception is observed in at least one third of patients presenting with the complaint of constipation, it was seen in 68% of the patients in our series (13). Since external prolapsus is seen in only 2% of the constipated patients with intussusception, only 2% of them can be diagnosed via examination. In such a situation, defecography enables diagnosis at a rate of nearly 100% (14).

## CONCLUSION

Although alternatives such as MR-defecography, which eliminate exposure to radiation as in conventional defecography imaging, and three-dimensional, high-resolution methods enabling images to be received simultaneously with anorectal manometry have been studied, defecography is currently the standard in the etiological examination of constipation and it should be performed on all patients regardless of the measurement of colonic transit time.

**Ethics Committee Approval:** Ethics Committee approval was not required as the study was retrospective.

**Informed Consent:** Informed patient consent form including their treatment protocol was taken from all patients included in this study.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept - M.A.B., A.K., H.A.; Design - M.A.B., A.K., B.K., A.S.; Supervision - M.A.B., H.A., M.U.K.; Funding - M.A.B., A.S., B.K.; Materials - M.A.B., A.K., H.A.; Data Collection and/or Processing - M.A.B., A.S., B.K.; Analysis and/or Interpretation - M.A.B., H.A., A.K.; Literature Review - M.A.B., H.A., A.K.; Writer - M.A.B., H.A., A.K., M.U.K.; Critical Review - M.A.B., A.K., A.S.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

## REFERENCES

1. American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol* 2005; 100 (Suppl 1): S1-4. [\[CrossRef\]](#)
2. Yurdakul İ. Frequent diseases in Turkey II. İ.Ü. Cerrahpaşa Tıp Fakültesi Sürekli Tıp Eğitimi Etkinlikleri. November 2007.s.43-58. [\[CrossRef\]](#)
3. Zhang SC, Wang WL, Su PJ, Jiang KL, Yuan ZW. Decreased enteric fatty acid amide hydrolase activity is associated with colonic inertia in slow transit constipation. *J Gastroenterol Hepatol* 2014; 29: 276-283.
4. Bozkurt MA, Kalaycı MU, Gemici E, Dilege E, Alış H. Is colonic transit-time measurement valuable in the etiological evaluation of constipation? *Ulusal Cer Derg* 2012; 28: 31-33.
5. Hedrick TL, Friel CM. Constipation and pelvic outlet obstruction. *Gastroenterol Clin North Am* 2013; 42: 863-876. [\[CrossRef\]](#)
6. Bozkurt MA, Sürek A, Gönenc M, Kalaycı MU, Alış H. Significance of defecography and the role of rectocele in constipated patients. *Open Journal of Gastroenterology* 2012; 2: 40-44. [\[CrossRef\]](#)
7. McNevin MS. Overview of pelvic floor disorders. *Surg Clin N Am* 2010; 90: 195-205. [\[CrossRef\]](#)
8. Hedrick TL, Friel CM. Constipation and pelvic outlet obstruction. *Gastroenterol Clin N Am* 2013; 42: 863-876. [\[CrossRef\]](#)

9. Lam TJ, Felt-Bersma RJ. Clinical examination remains more important than anorectal function tests to identify treatable conditions in women with constipation. *Int Urogynecol J* 2013; 24: 67-72. [\[CrossRef\]](#)
10. Hicks CW, Weinstein M, Wakamatsu M, Savitt L, Pulliam S, Bordenianou L. In patients with rectoceles and obstructed defecation syndrome, surgery should be the option of last resort. *Surgery* 2014; 155: 659-667. [\[CrossRef\]](#)
11. Bernini A, Madoff RD, Lowry AC, Spencer MP, Gemlo BT, Jensen LL, et al. Should patients with combined colonic inertia and non-relaxing pelvic floor undergo subtotal colectomy? *Dis Colon Rectum* 1998; 41: 1363-1366. [\[CrossRef\]](#)
12. Chiarioni G, Salandini L, Whitehead WE. Biofeedback benefits only patients with outlet dysfunction, not patients with isolated slow transit constipation. *Gastroenterology* 2005; 129: 86-97. [\[CrossRef\]](#)
13. Shorvon PJ, McHugh S, Diamant NE. Defecography in normal volunteers: results and implications. *Gut* 1989; 30: 1737-1749. [\[CrossRef\]](#)
14. Ellis CN, Essani R. Treatment of obstructed defecation. *Clin Colon Rectal Surg* 2012; 25: 24-33. [\[CrossRef\]](#)
15. Benezech A, Bouvier M, Grimaud JC, Baumstarck K, Vitton V. Three-dimensional high-resolution anorectal manometry and diagnosis of excessive perineal descent: a comparative pilot study with defaecography. *Colorectal Dis* 2014; 16: 170-175. [\[CrossRef\]](#)