


Dyssynergic defecation: The not so hidden partner in constipation

Kewin Tien Ho Siah^{1,2} 

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Dyssynergic defecation (DD) is one of the commonest causes of chronic constipation (CC). It is primarily characterized by impaired rectal evacuation (paradoxical contraction and/or inadequate relaxation of the pelvic floor muscles and/or inadequate propulsive forces during attempted defecation), with normal or delayed colonic transit. In the West, the prevalence of DD among patients with CC ranges from 27% to 59% [1]. The gold standard for diagnosis relies on both symptoms and physiological testing. DD is also known to adversely affect the quality of life of patients; in particular, a study by Rao et al. reported that 69% and 76% of DD patients suffered from worse work life and social life, respectively [2]. When compared with patients with slow transit constipation, patients with DD had reported greater psychological distress and impaired health-related quality of life (QOL) [3].

Existing data regarding constipation and DD in Asian population is limited. Rising healthcare costs, the lack of awareness about DD, and the availability of lower gastrointestinal (GI) testing only in tertiary centers are likely to be the main reasons accounting for the under-diagnosis of DD. In Thailand, a study performed by Gonlachanvit and Patcharatrakul showed that 40% of 103 patients with CC had DD [4]. In India, a few studies reported the prevalence of DD among patients with CC. A study from India by Shah et al. showed that 40% of patients with chronic constipation had DD [5]. Ghoshal et al. investigated 249 consecutive patients with CC by the ROME III criteria and found 55.8%, 22.9%, and 61% had abnormal balloon expulsion test, anorectal manometry, and defecography, respectively. All in all, 34% had more than two abnormalities [6].

DD belongs to one of the two subtypes of ROME IV functional defecation disorders. To be categorized as functional defecation disorders, the patient must satisfy diagnostic criteria for functional constipation (FC) and/or irritable bowel syndrome (IBS) with constipation. Patient must also demonstrate at least two features of impaired evacuation during defecation using balloon expulsion test, manometry or anal surface electromyography (EMG), and imaging test. ROME IV DD must fulfill criteria of inappropriate contraction of the pelvic floor as measured with anal surface EMG or manometry with adequate propulsive forces during attempted defecation [7]. Unfortunately, until now, DD remains the single least diagnosed cause of refractory constipation. The astute readers are referred to reviews written by Ghoshal (for ROME IV constipation) [8] and Rao and Patcharatrakul (for DD) for more in-depth reading on the topics [1].

Biofeedback therapy has been shown to be effective in both FC and irritable bowel syndrome with constipation (IBS-C) subjects with DD. Biofeedback involves a learning and training process which aims to teach patients technique to relax, instead of contracting, their pelvic floor including the anal sphincter muscles during defecation. In 2007, Rao et al. performed a randomized controlled trial of biofeedback, standard treatment vs sham biofeedback. He recruited 77 patients (69 women). The biofeedback was performed by biofeedback nurse therapist. Dyssynergia was corrected in 79% with feedback vs. 4% in sham ($p < 0.05$) [9]. The American Neurogastroenterology and Motility Society (ANMS) and the European Society of Neurogastroenterology and Motility (ESNM) in a joint consensus guidelines recommended biofeedback therapy for the short-term and long-term treatment for DD [10].

Similar treatment efficacy was also seen in trials performed in Asia. In an Indian study, 62% patients with DD reported satisfactory symptomatic improvement with biofeedback at 1-month follow up [11]. In Korea, Lee et al. evaluated the result of 347 DD patients and showed that the initial response rate was 72.3%. In the 103 patients who were followed up for more than 6 months, 82.5% remained

✉ Kewin Tien Ho Siah
kewin_siah@nuhs.edu.sg

¹ Division of Gastroenterology and Hepatology, University Medicine Cluster, National University Hospital, 1E, Kent Ridge Road, NUHS Tower Block Level 10, Singapore 119228, Singapore

² Department of Internal Medicine, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

successful during a median of 44 months [12]. In Thailand, biofeedback therapy was shown to be effective in both DD patients with and without IBS [13]. For these reasons, it is important to identify patients who may benefit from early tests and treatment for DD.

History, history, history

Multiple studies tried to identify key symptoms that can identify DD; however, until now there is no single symptom or symptoms cluster that can discriminate CC due to DD and those without it confidently. Rao et al. performed a questionnaire-based study on 118 subjects with DD; the commonest symptoms were excessive straining (84%) and feeling of incomplete evacuation (76%) [2]. In a study performed in Lucknow, India, the most common symptoms reported were incomplete evacuation (98%), straining (93%), and feeling of outlet obstruction [11]. Other studies in India showed that manual evacuation and more than three stools per week were also more prevalent in DD [5, 6].

The current study [14] is a prospective study of patients with FC and IBS-C based on ROME III criteria, referred to three regional centers in India for anorectal manometry. The authors tried to identify the clinical predictors of DD based on clinical history and colonoscopic findings. In this study, 45% of patients referred for anorectal manometry had DD. The authors reported that male sex, straining, and bleeding per rectum were more common in DD compared to those without. The authors also reported gender differences in DD presentation. Male patients tended to have more bleeding per rectum and absence of urge to defecate while female patients had more straining, digital evacuation, and hard stools. The same findings were also reported by a study in the West; Rao et al. similarly found that more women than men used digital evacuation, had infrequent bowel movements, and needed to strain excessively ($p < 0.05$) [2]. Interestingly, DD patients also had more benign colonoscopy findings such as solitary rectal ulcer (SRUS), fissure, and hemorrhoids. The authors suggested that these abnormal colonoscopic findings may serve as new indicators for DD.

Digital aids

Sometimes, a simple bedside examination, in this case, digital rectal examination (DRE), is all it takes to raise suspicion of DD in a constipated patient. DD patients may have high anal resting tone (increased resistance to insertion of the examining finger into the anal canal) and poor relaxation or paradoxical contraction of the sphincter complex with reduced perineal descent during the simulated evacuation [15]. In India, a study was done at Choithram Hospital and Research Centre, Indore.

Sixty patients with constipation referred for anorectal manometry (ARM) were recruited. The sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of DRE in the detection of DD were 69.7%, 81.5%, 82.1%, and 68.75%, respectively. The detection rate of DRE for DD was 69.7% (23/33). The percentage of the agreement was 75% with a Cohen kappa coefficient of 0.5 [16]. Another study performed in Iowa, USA, where 209 chronic constipated patients underwent DREs. Eighty-seven percent of patients had confirmed DD; 73% were identified to have DD based on DRE, with a positive predictive value of 97% [17]. In a similar study in Korea, Soh et al. performed a prospective study of 309 consecutive patients with CC; 77.2% were diagnosed with DD using high-resolution anorectal manometry. The positive predictive value of DRE for DD was 91% [18]. Unfortunately, a normal digital rectal examination does not exclude defecatory disorders [15]. Furthermore, a survey performed in the USA of 652 faculty, fellows, and medical students showed that not everyone perform DRE religiously and correctly [19].

From dyssynergy to synergy

Unfortunately, the current strategy of identifying patients suspected to have DD using either symptoms or DRE remains far from ideal. AGA suggested that patients with high suspicion for DD should be referred for early anorectal testing [16]. Asian Neurogastroenterology and Motility Association (ANMA) Chronic Constipation tool suggested that lower GI physiological evaluation should be considered when a patient fails to respond to conventional laxative therapy [20]. In a multicenter study involving 1376 patients with functional GI disorders from 11 cities across Asia, it was found that constipation had the lowest satisfaction with previous consultation (29.2%) and the most bothersome symptom was straining (37.5%) [21]. Clearly, more effort should be spent in harnessing technology and making lower GI physiological evaluation more accessible to the primary healthcare. Until then, we need to be vigilant and mindful that patients that we label with “refractory constipation” may be suffering from DD.

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