



Rajiv Baijal<sup>1</sup> and Mayank Jain<sup>2\*</sup>

<sup>1</sup>Consultant, Gastroenterologist, Pushpavati Singhania Research Institute, New Delhi, India

<sup>2</sup>Choithram Hospital and Research Centre, India

**Dates:** Received: 07 November, 2016; **Accepted:** 30 January, 2017; **Published:** 31 January, 2017

**\*Corresponding author:** Mayank Jain, Consultant, Choithram Hospital and Research Centre, India, Tel: 8959245040; E-mail: mayank4670@rediffmail.com

**Keywords:** Manometry; Anorectum; Defecation

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Case Report

Analysis of Indications and Results of Anorectal Manometry in Two Tertiary Hospitals in India

Short Communication

The anorectum plays an important role in regulation of defecation and in maintenance of continence [1]. The most widely used test for anorectal function is anorectal manometry. It measures pressures of the anal sphincter muscles, sensation in the rectum, and neural reflexes that are needed for normal bowel movements. This test is mainly used in evaluation of constipation, fecal incontinence, anal sphincter tone, functional anorectal pain, pelvic floor dyssynergia and diagnosis of Hirschsprung's Disease [2]. Parameters studied by anorectal manometry are the rectoanal inhibitory reflex, anal resting pressure, sustained voluntary contraction of anal canal and rectal sensation [3]. Anorectal manometry is now available at multiple centres in India. However, the awareness regarding the procedure and its uses is limited. This study was done with the aim to analyse the indications for referral and results of anorectal manometry in two teaching hospitals in India.

We reviewed the data of two centres in India over a period of 18 months from May 2015 to September 2016. Both the hospitals are teaching hospitals and cater to middle class population. The indications, findings and results of all patients undergoing anorectal manometry at the two centres were recorded. Detailed history, clinical examination and per rectal examination was done in all patients. A clinical diagnosis based on the above was made using Rome III Criteria. The data was entered in Microsoft excel sheets and analyzed. All procedures were done and reported by a single gastroenterologist at each centre.

A total of 178 patients underwent anorectal manometry during the study period. Most of the patients were males (135, 75.8%). The mean age of patients was 39.4 years (range 3 months - 76 years). The major indications for the study included - constipation (145, 81.5%), incomplete evacuation (74, 41.6%), straining during defecation (58, 32.6%), digital evacuation (31, 17.4%), fecal incontinence (11, 6.17%) and to rule out Hirschsprung's disease (4, 2.24%). Very few patients (3 each, 1.68%) reported severe lower abdominal pain

and regular use of enemas. The clinical diagnosis in patients presenting with anorectal disorders included - fecal incontinence (11, 6.17%), functional constipation (104, 58.4%), irritable bowel syndrome - constipation predominant (53, 29.7%), Hirschsprung's disease (4, 2.24%) and IBS with pain (4, 2.24%). Based on the manometric evaluation, the diagnosis of these patients is mentioned in Figure 1.

Anorectal manometry is an important tool for the diagnosis and management of pelvic floor disorders. However, the number of patients referred for evaluation was low in the study period. This could be related to lack of awareness regarding the procedure, social embarrassment and unwillingness to consult doctors for the same. The main indication of referral in our study was evaluation of constipation. A study from North India has reported that the prevalence of self-reported constipation within 1 year is 24.8%. The study also reports that constipation was significantly more frequent in females and non-working

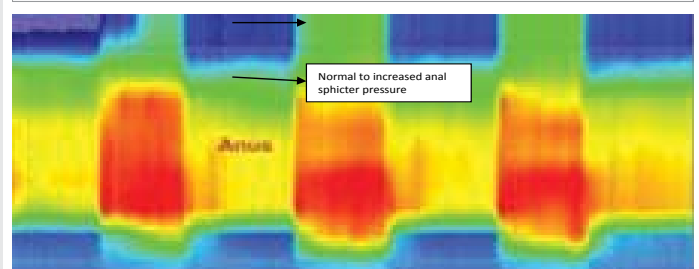
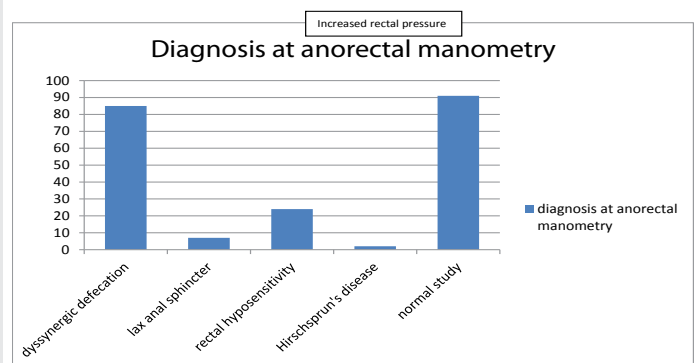


Figure 1: Anorectal manometry showing pelvic floor dyssynergia.

population. Only 18% of constipated patients took medical advice while 8% reported the use of laxatives to relieve their constipation [4]. In our study, we noted that only a few patients came for evaluation of fecal incontinence. Though, fecal incontinence is common in post-partum women [5] and post-menopausal status, it is seldom reported to doctors due to social stigma and is infrequently investigated. The study group had only 4 children who were all referred for evaluation of Hirschsprung's disease. Functional constipation is commonest in children while organic causes account for up to 5% of cases [6].

Half of the patients had a normal study while 47% patients had pelvic floor dyssynergia. When an individual bears down, the normal response consists of an increase in rectal pressure that is coordinated with a relaxation of the external anal sphincter. Inability to perform this coordinated maneuver suggests a diagnosis of dyssynergic or obstructive defecation, a common cause of constipation. Balloon expulsion test is used to assess rectoanal co-ordination during defecatory maneuvers. The test evaluates a patient's ability to expel a water filled balloon from the rectum, providing a simple and more physiologic assessment of defecation dynamics. Most normal subjects can expel the balloon within one minute. If the patient is unable to expel the balloon within 1 minute, dyssynergic defecation should be suspected [7,8]. Three types of dyssynergic defecation are recognized. Most patients show paradoxical increase in anal sphincter pressure during attempted defecation with normal adequate pushing force (type 1). Some patients are unable to generate an adequate pushing force, and exhibit a paradoxical anal contraction (type 2). In type 3, the patient can generate an adequate pushing force, but has absent or incomplete (20%) sphincter relaxation. In the present study, type 1 dyssynergic defecation was the commonest (41.50%), followed by type 3 (24, 28.4%) and type 2 (18, 21.6%) respectively.

Fecal incontinence was diagnosed in eleven patients. The manometry findings described in incontinence include—decrease in resting pressure, decrease in maximum squeeze pressure, decrease in maximum tolerable rectal volume, reduced rectal volume necessary to induce sphincter relaxation (RAIR) and impaired external anal sphincter response to rectal distention.

Hirschsprung disease was suggested on anorectal manometry in two cases. This was suggested on the basis of

absence of RAIR in these patients. However, false negative results due to probe movements, passage of flatus or feces, or external anal sphincter relaxation are well documented [9]. False-positive results may be caused by the immaturity of ganglion cells in premature infants and full-term neonates, high relaxation threshold in some children, and technical errors in which the relaxation zone is missed [9].

Anorectal manometry is an important tool for assessment of defecatory disorders and should be routinely included in the evaluation of chronic constipation. Constipation is the most common indication for referral. Normal study, followed by pelvic floor dyssynergia, is the most common reported finding in our setting.

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