ORIGINAL ARTICLE

Role of defecation postures on the outcome of chronic anal fissure

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Abstract

Objective: To evaluate the effect of defecation postures on the outcome of chronic anal fissure.

Methods: Hundred patients were evaluated with signs and symptom of chronic anal fissure. They were assessed before and after changing their defecation postures. In our study we compared commode & squatting versus modified commode squatting pattern.

Results: Total 100 patients were subjected for the trial and they were divided equally in two groups according to their pattern of defecation posture, commode & squatting. Patients who did not respond in both the groups were subjected to modified commode squatting posture, which has the advantage of both the groups. Our result clearly shows that modified commode squatting posture has the highest success rate for the treatment of chronic anal fissure.

Conclusion: Our study concludes that changing defecation pattern results in complete emptying of rectum in a shorter time with less application of expulsive force. This leads to reduction of symptoms and healing of chronic anal fissure.

Keywords: Anal fissure, Defecation, Squatting, Sitting posture, Modified commode squatting

Introduction:

Normal defecation is initiated by three components (a) spontaneous phasic contraction of rectum starting during filling[1-4] (b) smooth muscle relaxation of the anal canal with an increased recto anal angle[5, 6] (c) application of voluntary expulsive force as straining.[7,8] Out of these, straining constitutes the most important factor leading to the development of anal fissure.[9]

In Asia the most popular method of defecation is squatting posture in comparison to sitting posture, which is popular in western world. Excessive straining during defecation with hard stool is one of the major factors in the development of anal fissure.[10] Our study evaluated the effect of decreased expulsive effort required by using modified defecation position on the progression of chronic anal fissure.[11]

Methodology:

We inducted fifty patients for commode (C) & fifty for squatting (S) group with symptoms of chronic anal fissure. Both the groups were subjected to conservative medical treatment (analgesia, sitz bath, 0.2 % Glyceryl Trinitrate Ointment, and stool softeners).[10,12] Patients who did not respond or those with recurrence of symptoms were referred for modified commode squatting defecation posture. The study continued for 12 months. Patients included in the study had chronic anal fissure characterized by painful defecation & passage of blood per rectum, & difficulty in sitting. Patients excluded from study were those being unable to maintain a squatting posture due to any cause and those with less than 1 or more than 3 defecations in a day. Patients with previous history of surgery were excluded from study. All patients were physically examined and clinical details of the fissure were recorded. A standardized questionnaire was filled out recording the type and severity of symptoms. The patients were informed about current conventional methods of treat-

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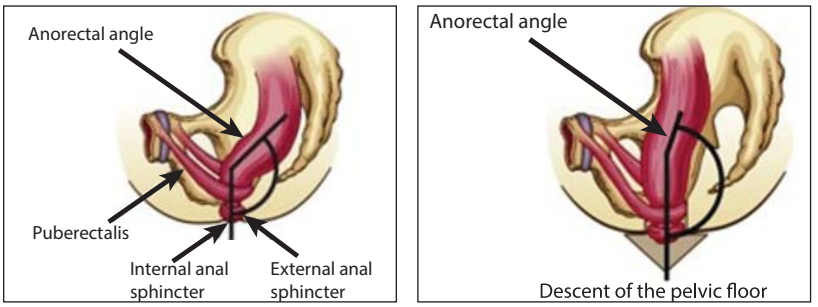

Figure 1: *(a) Sitting Posture ; (b) Squatting Posture*

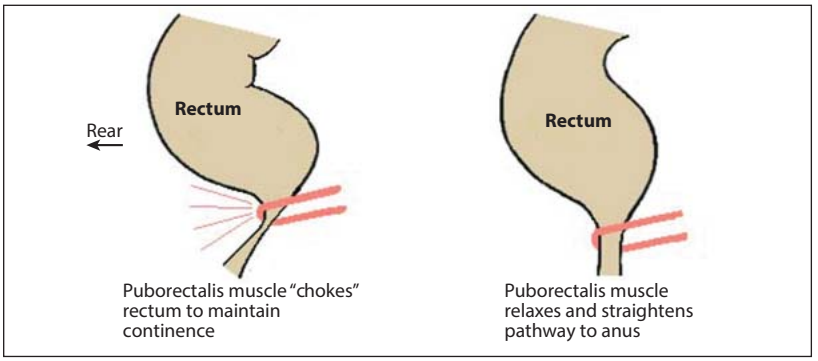

Figure 2: *(a) Sitting Posture ; (b) Squatting Posture*

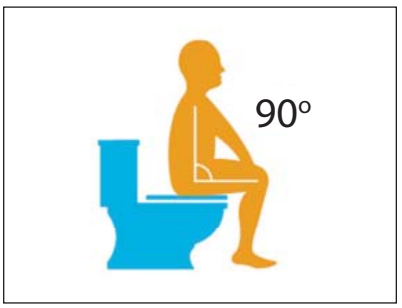

Figure 3: *Commode (Sitting) Posture*

Figure 4: *Modified Commode Squatting Posture*

Figure 5: *Modified Commode Squatting Posture*

ment. They were advised to use only the modified commode squatting position for defecation.

Results:

Hundred consecutive patients with chronic anal fissure lasting for several months were recruited for the trial, 50 patients for the commode and 50 for squatting. The patients presented with burning pain, bleeding & itching. There were 35 males and 15 females in the commode group and 22 males and 28 females in the squatting group. Mean age was 49 years for the commode group and 41 years for the squatting group.50 patients were subjected to commode group, 23 (46%) responded to the treatment & 27 (54%) did not respond. In squatting group 50 patients were subjected for the trial, out of them 28 (56 %) responded and 22 (44%) did not respond. Those patients who did not respond from both the groups were referred to modified commode squatting group i-e 49 (49%) patients. Our result shows 37 (75.5 %) patients responded and 12(24%) did not respond who were referred for lateral sphincterectomy. Comparison between two groups indicated that a change from commode & squatting to modified commode squatting position results in significant reduction in symptoms. The number of patients who had complete stoppage of bleeding and pain were significantly greater in the modified commode squatting posture group our results clearly indicate that two important factors for complete rectal evacuation are (a) Intra-abdominal pressure (b) Recto-anal angle. In sitting position intra-abdominal pressure is decreases & the Anorectal angle is formed at 900 (fig 1, 3), which makes difficult to straighten the "S" shape rectum & thus result in forceful or incomplete evacuation. On the other hand squatting position has its own limitation especially for the patients suffering from obesity, arthritis, & backache. This makes it difficult for them to defecate completely in a given time. However the patients who were referred to a modified commode squatting position have the benefit of both the positions (sitting & squatting) i-e patient can sit in comfort & yet generating the sufficient intra abdominal pressure necessary to defecate completely & thus the recto-anal angle which is formed at 350 (Fig: 4) facilitates less expulsive effort for complete emptying of rectum.

Discussion:

The most important conclusion of our study is that simply by changing the defecation posture from sitting or squatting position to a modified

commode squatting position reduces or almost totally eliminates the symptoms of chronic anal fissure. Patients who acquire a modified commode squatting defecation posture earlier, feel a more distinctly reduced severity in symptoms. Partial or complete resolution of symptoms among patients who switched from a commode and squatting to a modified commode squatting defecation posture may be explained by the less expulsive effort needed to defecate, thus preventing further injury to the anal mucosa. The explanation for the diminished expulsive defecation effort required in a modified commode squatting posture relates to the dynamic mechanics of the recto anal canal. The recto anal angle is greater with lower abdominal pressure in modified commode squatting posture than the corresponding values in sitting posture. The recto anal angle increases when hips are fully flexed corresponding to the modified commode squatting position thereby converting the recto anal canal to a straightened passage. This facilitates easier rectal emptying. A larger recto anal angle achieved in modified commode squatting position is due to the relaxed puborectalis and other muscles of the pelvic floor.[13,14,15] (Fig.1, 2, 3, 4, 5)

Conclusion:

Our results clearly conclude that by simply changing posture of defecation and keeping in view the anatomical angle formed during this posture not only cures but also prevents the occurrence of anal fissure in first hand and can save the patient from lot of agony, pain and loss of their industrial hours.

References:

1. 1.Sikirov D. Comparison of straining during defecation in three positions: results and implications for human health. Dig Dis Sci. 2003 Jul; 48(7): 1201-5.
2. Read NW, Haynes WG, Bartolo DCC et al. Use of anorectal manometry during rectal infusion of saline to investigate sphincter function in incontinent patients. Gastroenterology 1983; 85: 105–13.
3. Broens P, Vanbeckevoort D, Bellon E, Penninckx F. Combined radiographic and manometric study of rectal filling sensation. Dis Colon Rectum 2002; 45: 1016–22.
4. Ito T, Sakakibara R, Uchiyama T, Liu Z, Yamamoto T, Hattori T. Videomanometry of the pelvic organs; a comparison of the normal lower urinary and gastrointestinal tracts. Int J Urol 2006; 13: 29–35.
5. Mathers SE, Kempster PA, Law PJ et al. Anal sphincter dysfunction in Parkinson's disease. Arch Neurol 1989; 46: 1061–64.
6. Sorensen M, Lorentzen M, Petersen J, Christiansen J. Anorectal dysfunction in patients with urologic disturbance due to multiple sclerosis. Dis Colon Rectum. 1991; 34: 136–9.
7. Iscoe S. Control of abdominal muscles. Prog Neurobiol 1998; 56: 433–506.
8. Sakakibara R, Uchiyama T, Yamanishi T, Shirai K, Hattori T. Bladder and bowel dysfunction in Parkinson's disease. J Neural Transm 2008; 115: 443–60.
9. Gatewood WE. The mechanics of the colon. Northwest Med1930; 29: 1–7.
10. Mariusz H Madalinski. Identifying the best therapy for chronic anal fissure. World J Gastrointest Pharmacol Ther. 2011 April; 2(2): 9-16.
11. Ryuji SAKAKIBARA, Kuniko TSUNOYAMA, Hiroyasu HOSOI, Osamu AKAHASHI, Megumi SUGIYAM, Masahiko KISHI. Influence of Body Position on Defecation in Humans. LUTS: Lower Urinary Tract Symptoms. 2010 April; 2(1): 16-21.
12. Rosen L, Abel ME, Gordon PH, Denstman FJ, Fleshman JW, Hicks TC, Huber PJ, Kennedy HL, Levin SE, Nicholson JD, et al. Practice parameters for the management of anal fissure. The Standards Task Force American Society of Colon and Rectal Surgeons. Dis Colon Rectum. 1992 Feb; 35(2): 206–208.
13. Altomare DF, Rinaldi M, Veglia A, Guglielmi A, Sallustio PL, Tripoli G. Contribution of posture to the maintenance of anal continence. Int J Colorectal Dis 2001; 16: 51–4.
14. Welles, William. "The Importance of Squatting" chapter in Tissue Cleansing Through Bowel Management, Bernard Jensen Publisher; 10th edition (June 1981 58(1): 126–133.
15. Tagart REB. The Anal Canal and Rectum: Their Varying Relationship and Its Effect on Anal Continence. Diseases of the Colon and Rectum 1966: 9, 449-452.