



Review Article

Evaluation of the Constipation in Relation to Physiological Concepts of Guda (Rectum and Anus)

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Aims and Objectives: To understand the physiology of defecation by Ayurvedic and modern science perspective and to evaluate a patient of constipation to devise a good modality of effective management of constipation.

Material and methods: Ayurvedic and modern scientific aspects of defecation and constipation have been analyzed. Constipation in general denotes the inadequate evacuation of the bowel. It may be associated with no bowel movement to even multiple bowel movements. A normal individual may have evacuation of bowel in two or three days without any physiological changes; whereas, another one may have physiological problems even in multiple evacuation per day.

Discussion: Normal rectum doesn't have the faecal matter inside it, as soon as faecal matter enters in rectum, there is desire to defecate. In cases of incomplete evacuation of bowel, traces of faeces to a fecolith may be present in the rectum. The sensation to stool thus plays an important role in the act of defecation, so also the constipation. In Ayurveda classics, constipation has been enumerated a symptom of many diseases.

Conclusion: Apana vayu plays an important role in the act of evacuation of bowel; hence, it signifies the neurological aspects of defecation and constipation. Basti is termed as a model management of pacification or regulation of this vayu and it is also a good modality to control the constipation in natural way.

Keywords: Guda, Defecation, excretion of faeces, constipation, physiology of defecation.

1. INTRODUCTION

Sushruta has described the Guda as a terminal portion of Sthulantra (large intestines) and it excretes the faeces and flatus.¹ All the scholars of Ayurveda have mentioned the same functions of Guda as to dispose-of excreta outside the body. Guda is one among nine bahya srotasa (external openings).² In the same way Sharangdhar included it among 10 randhras (openings).³ The opening is terminal part of Purishavaha srotasa serves as an excretory channel for excretion of faeces and flatus. According to Charaka and

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Sushruta, Purishavaha srotasa have two roots e.g. pakvashaya and guda which serves as storage and excretion of faeces respectively. The presence of purishadharakala in koshta serves as to separate refuse from food.

Guda is also included under panchakarmendriyas (motor part) of the body. As per the ancient Indian acharyas, these activities are maintained by vayu, a principal motivating humour. Pakvashaya is the seat of vayu. It has five varieties which are located at their specific sites in the body and contributes towards integration and maintenance of body by virtue of their physical as well as mental characteristics.

Functions of Guda are mainly governed by Apanavayu apart from Samanavayu which contributes the functions of gastrointestinal tract such as digestion, absorption, separation of nutritional assimilated material from wastage and finally to move waste products for excretion.⁴

When Apanavayu gets vitiated then it causes various disorders of Guda and Basti such as Bhagandara, Arsha, Ashmari etc.⁵ On critical analysis, vayu resembles the activities of nervous system. Apanavayu is one which is responsible for observation of act of defecation. Goligher and Hughes (1951) conducted a number of experiments thereby concluded that by section of sacral plexus there was complete loss of reflexes for defecation and micturition. It was in contrast to the section of spinal cord at higher level resulted in no loss of above mentioned reflexes. By this experiment, it can be concluded that Apanavayu acts at the level of sacral plexus.⁶

In Ayurveda, excretory mechanism of faeces has been described in a lucid manner. The three gudavahies play key role in the mechanism of defecation. These are three named as Pravahini, Visarjani and Samvarani from proximal to distal in the anal canal. Pravahini is one which compresses and pushes the stool downwards as spiral movement of middle Houston valve. Visarjani is one which relaxes and initiates the reflexes of defecation in the presence of rich stretch nerve endings in ampulla of rectum and region of anorectal junction. Samvarani is the sphincteric continence under the control of reflex mechanism by the presence of external and internal anal sphincters which is opening and closing during the passage of faeces and flatus.⁷ Guda is the place where vayu can be controlled easily as it is the chief site of vayu. Ayurveda advocates the use of bastikarma for amelioration of vatika disorders; therefore, it looks that Guda also has property of absorption.

2. METHODS

Physiology of defecation:

The function of the colon is to absorb water and electrolytes and mix and propel its contents. The motility of colon and rectum is influenced by parasympathetic and sympathetic nervous systems through enteric nervous system. Food and emotions play an important role in motility of colon. The act of defecation is preceded by a wave of peristalsis which passes down the descending and pelvic parts of the colon.

The rectum becomes distended by the entrance of faeces and it initiates the desire of defecation. The time, place and frequency of defecation are very much a matter of habit. Some individuals defecate once a day, some many times a day and some perfectly normal individuals defecate once in several days.⁸

Assuming that the time and place are favourable, a coordinate reflex act occurs. It results in the emptying of the descending colon, sigmoid colon, rectum and anal canal. The intra-abdominal pressure is raised by the descent of the diaphragm, the closure of the glottis and the contraction of the muscles such as muscles of anterior abdominal wall and levator ani. The external pressure applied to the colon and the waves of peristalsis in the wall of the colon force the faeces onwards. The tonic contraction of the internal and external anal sphincters including the puborectalis muscle is now voluntarily inhibited. The faeces is now evacuated through the anal canal. Depending on the laxity of the submucous coat, the mucous membrane of the lower part of the anal canal is extruded through the anus ahead of the faecal mass.

At the end of the act, the mucosa is returned to the anal canal by the tone of the longitudinal fibres of the anal walls and the contraction and upward pull of the puborectalis muscle. The empty lumen of the anal canal is now closed to the tonic contraction of the anal sphincters.⁹

Faeces enter rectum – reflex relaxation of sphincters – raised intra-abdominal pressure – straightening of anorectal angle – contraction of gut – emptiness of left colon into rectum – faeces comes through anus

Constipation:

Constipation has not any generalized definition but if a patient has to strain for evacuation it may be termed as constipation. The rectum can accommodate passively a considerable amount of faeces. The faeces may even be propelled back in to the sigmoid colon. Chronic tolerance of faeces in the rectum may be associated with severe constipation.

Causes of constipation:

Colon related: Irritable bowel syndrome, diverticular disease, Strictures, carcinoma, amoebiasis, tuberculosis, volvulus, intussusception, idiopathic slow transit constipation

Pelvic causes: pregnancy and the puerperium, ovarian and uterine tumours, endometriosis

Anorectal causes: Anal fissure, anal stenosis, anterior mucosal prolapse, descending perineum syndrome, haemorrhoids, perianal abscess, rectocele, tumours

Neural causes: Hirschsprung's disease, Chagas' disease, Parkinson's disease, multiple sclerosis, tabes dorsalis, paraplegia, cauda equina tumour, Shy-drager syndrome

Muscular causes: dermatomyositis, progressive systemic sclerosis

Psychogenic causes: anorexia nervosa, depression, suppression of urge

Endocrine causes: Diabetes mellitus, hypothyroidism, pheochromocytoma

Metabolic causes: Lead poisoning, uraemia, porphyria, hypokalaemia

Environmental causes: immobilization, debility, dehydration

Drug induced: Laxative abuse, antidepressants, iron, antacids and anticholinergics

3. ASSESSMENT OF CONSTIPATION

Simple idiopathic constipation:¹⁰ It is very common in persons having low intake of dietary fibres, those who hold urge of defecation, in shift workers and because of lack of exercise. Idiopathic slow transit constipation occurs mainly in young women and may be confirmed by marker study.

Secondary constipation: If it is associated with any disease, then a detailed workout should be carried out. Change in bowel habit or alternate diarrhea and constipation should be worked out with colonoscopy or barium enema for colonic disorders such as tumours, diverticulum, strictures, tuberculosis and other abnormalities.

If the constipation is of acute onset, then barium enema or colonoscopy is mandatory. If a stricture is present during the colonoscopy, a biopsy should be carried out. In women, constipation may occur in later stage if pregnancy and in cases of uterine and ovarian tumours. A pelvic examination is therefore necessary to rule out any pathology.

Hirschsprung's disease is characterized by an aganglionic rectosigmoidal segment with inefficient motility, proximal to which the colon is dilated. It is a disorder in infants but may manifests in later life. A full thickness rectal biopsy is needed to confirm diagnosis.

Management of constipation:¹¹

The assessment of constipation should be done prior to providing any treatment. A detailed clinical history along with lifestyle, clinical examination and investigations such as colonoscopy or barium enema may be carried out according to the symptoms and clinical findings. Purgatives are ought to be avoided as they cause more harm than good. If necessary, short treatment may be prescribed.

In the beginning, dietary fibres should be added in food. Adequate vegetables, fruits, milk along with jaggery and ghee are some natural measures to combat constipation. Bulk forming laxatives such as ispaghula husk may be used as first line treatment of constipation. Osmotic laxatives such as lactulose and magnesium sulphate may also be good for management of constipation. Faecal softeners such as liquid paraffin are also used. In case of difficult constipation, contact purgatives may be used but for a short term. Some of these are Senna, sodium picosulphate, bisacodyl and castor oil etc. If constipation is still not relieved then rectal administration of bisacodyl, glycerol or phosphate enema may be tried. The treatment of Hirschsprung's disease is surgical.

Laxative abuse is a condition where excessive use of these laxatives may result in decreased sensation of rectum and

stenosis of anal mucosa. It results in the increment in the constipation. It is a vicious cycle which increases with the increasing dose of laxatives. Basti therapy is by far the most effective mode of management of various forms of constipation. It corrects the normal mechanism of defecation thereby corrects the underlying causes of constipation in natural way.

4. CONCLUSION

Guda or rectum and anus is an important organ for the act of defecation. The normal act of defecation is governed by the Apanavayu situated in this region. The Apanavayu is correlated with the neurological mechanism in this area. Constipation should be properly evaluated prior to prescribing any pharmacological or non pharmacological treatment. The better understanding of constipation is the mainstay of management of it. Prior to prescribing any medication, diet and regime should be followed. The use of laxatives and purgative should be for a shorter period. The longer use of such laxative may lead to laxative abuse. Basti therapy of Ayurveda is by far the most effective mode of management of constipation.

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