

Control of Incontinence

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Faecal incontinence is the inability to control bowels. When one feels the urge to have a natural call, may not be able to hold it until he can reach to a toilet. Or the stool may leak unexpectedly on coughing or sneezing and cloths are spoiled. There may be degree of severity of incontinence depending on liquid to solid stool contents.

Incontinence affects any age. It is more common in females and in older people but it is not present as part of old age. Faecal incontinence is devastating condition for patient. They are usually ashamed and embarrassed and reluctant even informing doctors about their problem. They isolate from society due to even thought of accidental passing of stool and its smell. The close relations may try to avoid them.

There are several causes of Incontinence. Main causes are as follows,

Damage to the anal sphincter muscles

Damage to the nerves of the anal sphincter muscles or the rectum

Dysfunction of pelvic floor

Changed bowel habit

Loss of storage capacity in the rectum

The control of the continence is responsibility of the colon, rectum and anal canal and their sphincters. At ano rectal junction puborectalis sling has significant role in continence which is a part of the levator ani muscle of pelvic floor. The colon has large capacity to store faecal matter and convert

them into solid mass. The transit time in the colon is important factor in control. Ano rectal complex has external anal sphincter which is voluntary and internal sphincter is involuntary. The voluntary sphincter controls as per situation but involuntary sphincter keeps anal canal closed tightly with pressure. Perception of bowel movement depends on nerve complex in the rectum and around it and barometric receptors in the lower part of the rectum. They distinguish faeces flatus and liquids stool. The damage to any of these factors may lead to partial or complete incontinence. In women, the damage often occurs during child birth. The risk of injury is greatest if the forceps are applied for delivering the baby. During normal delivery episiotomy is a cut in the vaginal and perineal skin area to prevent injuring anal sphincters during birth. Haemorrhoid, fissure and fistula surgery can damage the sphincters as well.

Nerve Damage

Damage to the pudendal nerves that control the anal sphincters or the sympathetic nerves that sense stool in the rectum are injured or damaged, incontinence can occur. Injured sphincters cannot control and sensory loss will lose information about nature's call. Nerve damage can be caused by childbirth, a long-term habit of straining to pass stool, stroke, physical disability due to injury, and diseases that affect the nerves such as diabetes, multiple sclerosis and prolapse of the rectum

Dysfunction of pelvic floor

Abnormalities of the pelvic floor muscles and nerves can cause faecal incontinence.

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Which include impaired sensory as well as contractibility of muscles of the anal sphincters. There are certain abnormalities develop due to descending of pelvic floor are like prolapse rectum, rectocele and obstructive pelvic floor syndrome. Childbirth is often the cause of pelvic floor dysfunction, and incontinence usually doesn't appear until the mid forties or in old age.

Changed bowel Habits

Constipation is one of the most common causes of faecal incontinence. Constipation causes large and hard stools to become impacted in the rectum. It is possible that liquid stool can leak out around the hardened stool mass. Constipation also causes stretching of the muscles of the rectum and weakening of them so they lose their ability to hold stools in the rectum long enough to reach a person to toilet.

Diarrhoea

Diarrhoea, or loose stool, is more difficult to control than solid stool because with diarrhea the rectum fills with stool at a faster rate. Even people who don't have faecal incontinence can leak stool when they have watery stool.

Reduction in Storage Capacity of the rectum

The rectum distends and store stool until to reach to the toilet. The capacity of the rectum is reduced due to rectal surgery, radiation treatment, inflammatory bowel disease and various anastomosis to anal canal. It can cause fibrosis that of the walls which changes the rectum stiff and less elastic. The rectum then neither stretches nor holds normal amount of faecal mater can cause incontinence.

Investigations

Clinical examination includes, digital

examination of the anal canal and rectum

Usually patulous sphincter and impaired sensation around anal opening is found in incontinence.

- Anal manometry evaluates the strength of the anal sphincter and its ability to respond to signals, the sensitivity and function of the anus.
- Magnetic resonance imaging (MRI) is sometimes used to evaluate deficiency in the wall of the sphincter after injury.
- Endo anal ultrasonography evaluates defects in the structure of the anal sphincters.
- Proctoscopy is examination of the anal canal which reveals defects in anal canal.
- Sigmoidoscopy for the rectum and lower colon for signs of disease or other problems that can cause faecal incontinence, such as inflammatory bowel diseases, tumours, or scar tissue.
- Anal electromyography evaluates nerve damage, which is often associated with injury during childbirth or pudendal nerve injury .

Treatment of Incontinence

The effective treatment for faecal incontinence can improve or restore bowel control. The choice of treatment always depends on the causative factors and severity of faecal incontinence. As control of incontinence start from colon to the anal canal, which include change in diet, medical treatment, bowel training, and/or surgery. The combination of different modality of treatment may be necessary for successful control because continence is a complicated series of events.

Dietary Changes

Food content affects the consistency of stool and passage time depends on it. Watery

stools are difficult to control. Eating high-fibre diet increase bulk and solid bulky stools are easy to control. In the people with well formed stools, high-fibre foods act as a laxative and may increase the problem. Foods and drinks that may make the problem worse are those containing coffee, tea, or chocolate which relaxes the internal anal sphincter muscles.

As food is an important factor for conservative treatment and incurable causative factors of incontinence. Individual can find out himself, certain food items which can cause loose stool and get more trouble. The food and drinks cause diarrhea should be avoided; including spicy, containing caffeine, alcohol, dairy products, fatty and greasy food and sugar free sweeteners.

Large meals cause bowel contractions immediately that lead to diarrhoea. The same amount of food can be taken in a day, but space it out by eating several small meals.

Liquid assists to transfer food through the intestines, drinking of water half an hour before or after meals, slow down the transit time of stool.

The fibre makes stool soft, formed, and easier to control. Fibre is found in fruits, vegetables, and grains etc. Around 20 to 30 grams of fibre a day is needed, it should be increased slowly in the diet so body can adjust. Excessive fibre can cause bloating, gas, or even diarrhoea. Also, too much insoluble, or indigestible, fibre can contribute to diarrhoea.

The food items that contain soluble, or digestible, fibre increases transit time and the emptying of the bowels, including bananas, rice, tapioca, bread, potatoes, apple sauce, cheese, smooth peanut butter, yogurt, pasta, and oatmeal.

Drinking of eight big glasses of liquid a day to help to prevent dehydration and keep stool soft and formed. Avoid drinks with caffeine,

alcohol, milk, or carbonation if you find they trigger diarrhoea.

Medical Treatment

In the cases that diarrhoea is causative factor for incontinence, medication may help. In such patients antidiarrhoeal medicines, loperamide or diphenoxylate to slow down the bowel and help control the problem.

Bowel Training

Bowel training is a programme which trains the patient to pass stool at particular time of day, is called condition reflex of the bowel. It also involves strengthening muscles.

Biofeedback is special computerized equipment measures muscle contractions while you do exercises called Kegels. It increases strength of the rectum and improve rectal sensation. The computer guided exercises of muscles of the pelvic floor, including those involved in controlling stool. Computer feed back gives assessment of contraction of muscles and sensory perception about working. The biofeedback will work in the cases where muscles are intact.

Sacral Nerve Stimulation

Newer modality of treatment for faecal incontinence is sacral nerve stimulation. The sacral nerves S2, S3 and S4 supply muscles in pelvis; these nerves regulate the sensation and strength of the rectal and anal sphincter muscles. The electrical stimulation of these nerves directly is a useful treatment option for faecal incontinence. The sacral nerve stimulation is carried out in two stages. First, four to six small needles are positioned in the sacral foramina of nerves emerging for muscles of lower bowel, and these muscles are stimulated by an external pulse generator. After a successful response, we can have a permanent pulse generator implanted in the abdomen.

Stool impaction

Impacted stool acts as overflow incontinence. After taking laxative and enema if it dose not help, the impacted hard stools had to be removed manually.

Surgical options

The surgical treatment of faecal incontinence is indicated to correct an underlying problem; anal sphincter damage caused by childbirth or rectal prolapse or pelvic floor descent.

Sphincteroplasty is indicated in injured or damaged sphincters of anal canal and /or puborectalis sling. In this procedure, an injured area of muscle is identified and its edges are freed from the surrounding fibrous tissue. The muscle edges are then brought back and stitched together in an overlapping fashion. This strengthens the muscle, tightening the sphincter.

Procedure for rectal prolapse, a rectocele or haemorrhoids. Rectal prolapse, a condition in which a portion of the rectum protrudes through the anus, weakens the anal sphincter. In chronic constipation and straining, the ligaments of the rectum can become stretched and loose their ability to hold the rectum in place. Surgical repair of the rectal prolapse may be needed along with sphincter muscle repair.

In women, a protrusion of the rectum into the vaginal wall (rectocele) may need to be treated surgically to correct faecal incontinence.

Prolapsed internal haemorrhoids may not allow complete closure of the anal sphincter, leading to faecal incontinence. Haemorrhoids may be near the upper part or beginning of

the anal canal (internal haemorrhoids) or at the lower portion or anal opening (external haemorrhoids). Haemorrhoids can be treated by conventional haemorrhoidectomy, a surgical procedure to remove the haemorrhoidal tissue.

Sphincter replacement an artificial anal sphincter can be used to replace a damaged anal sphincter. The device is essentially an inflatable cuff, which is implanted around the anal canal. When inflated, the device keeps the anal sphincter close tight until toilets are available, for voiding stool. A small external pump is used to deflate the device and allow stool to be released.

Sphincter repair during a surgical procedure called a gracilis muscle transplant, a muscle is taken from inner thigh and wrapped around the sphincter. This restores muscle tone to the sphincter.

Colostomy is a last resort, a colostomy may be the most definitive way to correct faecal incontinence. Colostomy is generally considered only after other treatments have failed. A colostomy is an operation that diverts stool through an opening in the abdomen instead of through the rectum. A special bag is attached to this opening to collect the stool.

Conclusion

The faecal incontinence is complex phenomena. The sensory and motor system governs it. Conservative treatment is useful where sensory factors are damaged. In injured sphincter muscles surgical treatment improves significantly. And when sphincters are beyond repair muscle transposition is useful. In incurable cases colostomy may have certain benefit.