



INTERNATIONAL
FEDERATION
for
SPINA BIFIDA
and
HYDROCEPHALUS

NEUROGENIC BOWEL MANAGEMENT

Training manual for nurses

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1. Introduction

Urinary and bowel control are important objectives in the development of the independence of children.

The children's need for help in emptying the bladder decreases with age, which is not the cause for evacuating faeces.

The bowel management programme is not an innovative method, but experiences show an enormous increase in the quality of life of people with faecal incontinence. This is extremely important for social inclusion of people with Spina Bifida and Hydrocephalus.

2. Neurogenic bowel problems

1. severe constipation: constipation is caused by poor peristalsis of the denervated bowel + inadequate water and fiber intake
2. continence: faecal incontinence is caused by poor or absent sphincter control + presence of solid faecal material that is 'stuck' in the distal bowel: leaking of the watery 'muc' around the solid stool

3. The goals of bowel management

1. to prevent constipation and to achieve continence
2. the child can learn to help the stool come out, with assistance, certain times of the day
3. the child is able to defecate at the time and place of his choosing and to be clean in between
4. to avoid gross constipation with megacolon, faecal impaction and overflow incontinence by regular emptying of the bowel

4. How does the body usually work and does it work in spina bifida?

The brain is controlling and commanding all muscles and feelings; signals are transferred by nerves, nerves can be compared with cables of old telephone lines. The brain is the central sending out and receiving signals.

There are two actions directed by the brain:

1. commands where the person consciously command and action like
 - walking
 - moving the fingers of his hand
 - biting
2. actions that occurs consciously like
 - stomach starting to work when food comes in
 - feelings of the skin (cold, warm, ...)
 - blushing

Food is taken into the bloodstream in the bowel.

The stool is the unused food.

The bloodstream feeds the functioning of the body, blood is like fuel for a car, urine and stool are what needs to get out. Kidneys are vital organs where the blood is washed out and cleaned; the rest products are leaving the body as urine. Without kidneys a person will be poisoned and will die in some days.

In Spina Bifida the nerves are not well functioning below the wound. Therefore the signals cannot pass trough or do not go back to the brain. This creates disturbed feeling and paralysis below the wound.

All children with Spina Bifida have problems with toileting; the natural way of urination and defecation is not functioning due to the paralysis caused by Spina Bifida.

Persons with Spina Bifida need to follow a continence management programme. This programme provides solutions as well for urinary as for stool management.

5. *How does the bowel and the digestive system work?*

1. General

The digestive channel is a long tube starting at the mouth and ending at the anus. When eating, our teeth grind the food. With our tongue, we taste differences in the food. The salivary glands produce a watery fluid which makes swallowing possible. The food passes through the gullet and is being transported to our stomach. The muscles of the stomach are a kind of giant mixer grinding and mixing food with acids and fluids. The small intestines are a kind of bridge pushing the food down and deliver converts waste into a solid mass: faeces. Faeces leave the body via the anus.

2. Colonic movement

Muscular movement in the wall of the colon mixes and propels faeces along the colon towards the rectum. The movement of faeces varies in rate, intensity and nature. Types of movement are haustral churning, peristaltic contractions and mass movements. As faecal material passes through the colon, approximately 1.4 litre of water is reabsorbed every day. The lining of the colon secretes mucus to lubricate the intestine and ease the passage of the faeces.

Haustral churning: is a process similar to segmentation, contractions occur at regular intervals. This mixes the faeces but propels them along very slowly.

Peristaltic contractions: waves of peristaltic contractions propel faeces towards the rectum. Circular muscles behind faecal matter and longitudinal muscles in front; occurs more slowly in the colon than it does in the small intestine.

Mass movements: mass movements are strong peristaltic waves that propel faeces relatively long distances: these movements occur about 2 or 3 times a day.

3. Large intestine: rectum and anus

The rectum is the final section of the large intestine. It is about 12cm long and is normally empty except just before and during defaecation. Below the rectum lies the anal canal or anus, which is about 4cm long and lined with vertical ridges called anal columns. In the walls of the anal canal are 2 strong, flat sheets of muscles called the internal and external sphincters. They act like valves and relax during defaecation.

4. Defaecation

Peristaltic waves in the colon push faeces into the rectum, which triggers the defaecation reflex.

Muscle contractions push the faeces along into the anal canal, and the anal sphincters relax to allow faeces to pass out of the body. The defaecation reflex may be aided by voluntary contraction of the abdominal muscles or overridden by conscious control that keeps the external anal sphincter closed.

6. *The problem of constipation*

It is only in the large intestine that water is taken out of the fluid and a solid mass (faeces) is formed.

When there is a problem of emptying the large intestine, the intestine keeps on extracting water out of the faeces, which results in the formation of hard balls of stool.

Constipation is often associated with bouts of diarrhoea, which is very confusing; the too hard stool blocks the bowel and very soft, runny stool cannot be processed properly anymore; it will flow around the hard material causing a bout of diarrhoea ("flow diarrhoea").

When the body keeps on producing and passing foods to the intestine but the intestine is not emptied anymore (because of too hard balls of stool that block everything), this will result in expansion of the large intestine.

The body can defaecate a small amount, but the large parts of stool remain in the intestines and the constipation continues. This will result in chronic constipation, stretching the bowel and leading to weakened sensation.

Primary causes of constipation are:

- poor diet and lack of exercise
- some medication

7. *How to manage bowel incontinence?*

1. even in the absence of sensation, sitting on a toilet and pushing is often all that is required
2. careful diet and if possible exercise to keep the stool at the right consistency
3. children < 2 years: digital peri-anal stimulation and digital faecal extraction
4. children > 2 years: learning the child how to extract the stool digitally combined with bowel washout on a regular basis.



8. *Digital faecal extraction: how to remove stool*

A digital regime of emptying stool from the rectum once or twice a day is essentially the bowel equivalent of CIC of the bladder and also similar to CIC, patients benefit most if this program is started at birth.

When the child is old enough, he or she can learn to do his own “bowel program”.



How to remove stool:

1. Cover your hand with a plastic or rubber glove or a plastic bag. Put oil on your index finger (vegetable or mineral oil work well)
2. Put your oiled finger into the anus about 2cm. Gently move the finger in circles for about 1 minutes, until the muscle relaxes and the stool pulses out.
3. If the stool does not come out by itself, remove as much as you can with your finger.
4. Clean the anus and the skin around it well, and wash your hands.

9. *The bowel washout programme*

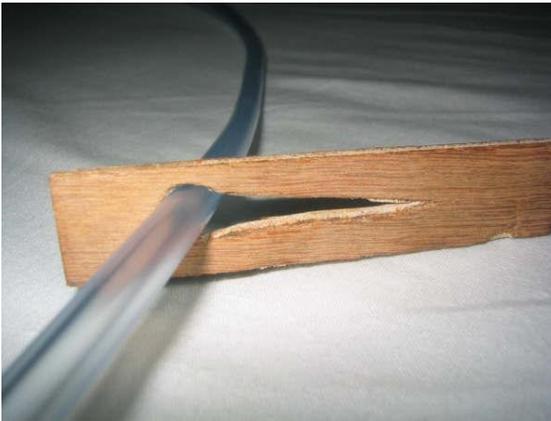
1. Material used:



Cone



Water reservoir, tube with clip and cone



Tube with clip



Water reservoir hung next to toilet facilities

2. Bowel washout program:



In order to carry out the cleansing in a safe and efficient manner, tepid / lukewarm water is used. Cold water will cause cramps; hot water can burn the walls of the anal canal.

The quantity of water used is according to age. Adults use approximately 1000ml to 1500ml water, young people 500 ml to 750ml and small children 250 ml to 500ml.



If the patient experiences violent cramps, feels faint, has to sit on the toilet for an extremely long time or still loses water a considerable time after rinsing, the quantity of water should be reduced. More water can be used if there is still loss of faeces between cleansings or when one loses water early due to difficulties in holding the cone during rinsing.



The tube is cleansed before use.



The cone is introduced more easily when moistened.



Insert the cone into the anus. Press the cone well against the anus to reduce the loss of water. Hold the water for 5 minutes by pushing the cone firmly. Water will stimulate the bowel to contract and moistens the faeces.

In the beginning, the patient might experience cramps and complain about feeling bloated.



In order to remove the cone, it is preferable to teach the patient to hold the cone himself. The most difficult aspect is pressing the cone well against the anus.



After removing the cone, the patient should still remain seated on the toilet for about 15 to 20 minutes. After the first cleansings, it is possible that a lot of faeces will be still accumulated in the intestines, causing faecal incontinence. Therefore, some extra protection should be arranged for the first couple of days.



If one cleanses daily during the first month, all accumulated faeces should have been removed and the technique will be mastered. Depending on the colonic transit, some people can become entirely clean by carrying out the cleansing routine every 2 days, others might need it daily.



The trainer can avoid back pains by kneeling besides the person in bowel management training.

10. *How to clean the bowel washout set?*

A good maintenance of the washout set prolongs the life span of the material and avoids infections.

1. Cleaning after every use

Clean all parts of the set after every use: wash with water and soap and rinse thoroughly with water

Dry all parts thoroughly after every use

2. Periodical cleaning

To avoid fungus, it is advised to clean the sets more thoroughly every month.

Use a solution of water with bleach/chlorine:

Rinse with clean water and dry thoroughly.

11. *Notes*
