

Appendix 1: training guide for patient changing dressing

What is high anal fistula?

Anal fistula refers to an abnormal duct formed by the rectum or anal canal communicating with the perianal skin due to pathological reasons. It is also called anorectal fistula. Anal fistula is one of the most common anorectal diseases in China. The total incidence of anorectal diseases in China is 59.1% (33, 837/57, 297). The incidence of anal fistula is second only to hemorrhoids. The incidence of anal fistula in China accounts for 1.67% to 3.60% of the disease, 8.00% to 25.00% abroad, the majority of young and middle-aged people aged 20–40 years are affected, and the prevalence of males is higher than that of females. Among them, HAF is a type of anal fistula, which usually refers to a type of anal fistula in which the fistula of the anal fistula passes through the levator ani muscle. Most HAFs develop from perianal abscesses. If patients do not seek medical treatment in time, perianal abscesses will gradually form fistulas in the acute phase, which will not heal and recur. The main clinical symptoms are repeated perianal discharge or fecal discharge, pain, itching, rectal tenderness, and a sinking sensation. When the patient touches the anus and surrounding tissues, the perianal induration can be palpable, including the fistula leading to the anus. High anal fistulas often invade the puborectalis and levator ani muscles through the deep part of the external sphincter. High anal fistulas are almost impossible to heal by themselves and must be treated with surgery.

What is the LCCS method?

At present, the mainstream methods of threading HAF in clinical practice are divided into two types: real threading and virtual threading. Rubber bands are usually used for a hanging thread, which is used for cutting, and the thread will be tightened continuously after the operation, and thus the sphincter muscle will be slowly severed using the elastic force ensuing from contraction. The disadvantage is that the patient feels as though a foreign body is hanging on the thread, the pain is heavier, and the healing time is longer. The virtual thread only exerts the drainage effect of the silk thread and does not cut the sphincter. The patient's pain is significantly reduced compared with the cutting thread method, and the anus control function is better after the operation. Due to the incomplete treatment of the infection foci, as the follow-up time increases, the postoperative recurrence rate gradually increases, which leads to an

increased risk of the patient's second surgery.

The LCCS method combines the advantages of real thread and virtual thread. During the operation, the actual thread is threaded, and the silk thread has no elastic effect. Under anesthesia, the thread is tightened once to reduce the patient's pain. The necrotic tissue falls off after the operation, the silk thread becomes loose around 7 days after the operation, and thus the actual hanging becomes virtual hanging, and the drainage continues during the recovery process. At this time, the virtual hanging thread continues to be drained, and after the granulation tissue of the fistula has been filled, it is removed on the 20th day.

When will the dressing be changed?

The patient will begin to change the dressing twice a day 24 hours after the operation, once in the morning and once in the evening. (The dressing should be changed within half an hour after defecation every day. If there is no bowel movement that day, the first dressing change will be performed at 9–10 am and the second dressing change at 21–22 pm).

How to identify the type of thread-hanging in LCCS therapy?

There are three types of thread hanging after operation. The first type is the thread, which extends into the anus. This thread is hung on the sphincter to cut off part of the sphincter. When washing, this kind of thread only needs to be gently shaken to prevent the threads from being entangled. The second type of thread is the drainage thread. This thread generally loops around the anus and runs through the two incisions to provide smooth drainage. It is similar to a circular ring. It is necessary to gently rotate the thread during cleaning to help secretions and necrotic substances to discharge. The third type of thread is the intraoperative hemostatic thread. The ligation thread of this type of thread is short, and it is not easy to locate it. When washing and changing the dressing, it does not need to be processed. Vigorous wiping and tearing should be avoided to prevent the thread from falling off and bleeding.

How to wash the wound?

The flushing operation can be performed by the family or the patient him- or herself. The patient adjusts the water temperature and flushing intensity of the flusher. The water temperature is generally slightly higher than the

body temperature of 36 to 37 °C, such that there will be no irritation caused by the water temperature being too low or too high, and the flushing intensity should not cause any pain during washing. When washing, the patient takes a squatting or sitting position to fully expose the wound and wash by him- or herself or by a family member holding the showerhead. The washing height is about 5 cm away from the wound. The washing range is the wound and the skin around it, and the wounds are flushed under pressure. The wound should be washed with pressure, and the sequence is as follows: from top to bottom and from the inside to the outside. During the cleaning process, you can gently shake the solid line to locate the wound cavity and rotate the dashed line to wash the necrotic tissue attached to the line until the pus on the wound surface is completely washed out.

What are the specific steps to simplify the dressing change method?

(I) Remove the old dressing from the wound: The patient assumes a lateral position (to fully expose the perianal drainage wound), opens the disposable dressing pack, and puts the items in place. First, the outer dressing is removed manually, and then a pair of tweezers is used to remove the inner dressing and the stuffed cotton ball. If it adheres to the wound surface, do not peel it off too hard. Soak it with cotton ball with normal saline and remove it

to avoid injury and bleeding. (II) Wash the wound: After instructing the patient to sit in the bath, firmly move the contralateral buttocks muscle with one hand to fully expose the wound. Hold the shower head with the other hand or ask a family member to use the shower head with tap water (set temperature is 36–37 °C), 5 cm away from the wound, and wash the wound and the skin within 5 cm from the wound under pressure, in the order of from top to bottom and from the inside to the outside. Wash the wound surface with pressure, gently pull the solid line to locate the wound cavity and rotate the dotted line to wash the necrotic tissue attached to the line until the pus on the wound surface is completely washed out. (III) Change dressing: Place sterile cotton balls or sterile gauze in each wound cavity, whereby the outer layer does not need to be covered with sterile gauze. Instruct patients and family members to pay attention to the dry cotton balls placed in the wound cavity, and replace these balls once they are soaked with secretions. Because cotton balls and gauze fill the local wound defect around the anal area, prevent the wound from healing earlier than the wound cavity, which will lead to pseudo-healing and formation of a new sinus tract. A suspended thread can provide adequate drainage, allow excessive exudate and pus to be fully discharged, provide a relatively moist rather than humid environment for wound healing, and reduce edema of the tissue around the wound.