

# Application of Bundle Strategy after Ileostomy in Neonatal Nursing

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## Abstract

**Objective:** To analyze the nursing methods of bundle strategy after neonatal ileostomy.

**Methods:** A total of 40 neonates who received ileostomy in our hospital from July 2020 to November 2021 were selected as study subjects and divided into control group (given routine nursing) and observation group (given bundle nursing under the premise of control group). The patients were divided into control group (n = 20) and observation group (n = 20) according to random number table. The incidence rate of complications and parents' satisfaction with nursing work were statistically analyzed and compared between the two groups.

**Results:** The complications of stoma prolapse, stoma retraction, stoma edema, para-hernia, fecal dermatitis, etc. in the observation group were less than those in the control group, and the differences had statistical significance ( $P < 0.05$ ); the total satisfaction rate of nursing care of parents in the observation group was higher than that in the control group, and the differences had statistical significance ( $P < 0.05$ ).

**Conclusion:** Bundle nursing care of neonates undergoing ileostomy can reduce the incidence of postoperative complications and improve parental satisfaction, which is worth adopting.

**Keywords** Ileostomy; newborn; bundle nursing

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Ileostomy is an important treatment usually used for the treatment of acute abdomen such as intestinal necrosis with shock and anorectal congenital malformations in clinical practice, which aims to cure intestinal obstruction, thereby accelerating the recovery of intestinal function and maintaining normal blood supply, and is an effective treatment for neonatal necrotizing enterocolitis, congenital intestinal atresia, Hirschsprung's disease and other diseases (1). However, children after ileostomy face a large number of water and electrolyte loss, nutrition, metabolism and dysplasia of the body, possible stoma retraction, prolapse, stenosis, obstruction and peristomal skin injury and other related complications are challenges

to clinical medical staff. At the same time, parents of newborns need to take care of their children at home after stage I enterostomy to stage II surgery, during which improper care can also cause various types of complications, increase the pain of children, and even lead to their death (2). Therefore, it is important to do a good job in the nursing of complications after neonatal ileostomy. In order to explore an effective nursing program, this paper studies 40 newborns who underwent ileostomy in our hospital from July 2020 to November 2021 and analyzes the role of bundle nursing nursing in reducing their postoperative complications, and the contents of the report are as follows:

## 1 Materials and Methods

1.1 General data 40 newborns who underwent ileostomy in our hospital from July 2020 to November 2021 were selected as the study subjects and divided into the control group ( $n = 20$ ) and the observation group ( $n = 20$ ) according to the random number table. The male to female ratios in the two groups were 9:11 and 12:8, respectively; the ages were 1 to 28 days and 1 to 29 days, respectively, with mean values of  $(3.41 \pm 1.11)$  d and  $(3.53 \pm 1.13)$  d, respectively; the primary disease syndromes: NEC, congenital intestinal atresia, and Hirschsprung's disease ratios were 8:7:5 and 7:7:6, respectively. There was no significant difference in the general data between the two groups ( $P > 0.05$ ), with some comparability. This study was approved by the medical ethics committee of the hospital.

Inclusion criteria (1) All patients underwent ileostomy in our hospital. (2) There are no contraindications to anesthesia and surgery. (3) Age  $\leq 30$  days. (4), informed consent was obtained from the parents of the children and relevant written instructions were signed.

Exclusion criteria : (1) Liver, kidney, heart and other important organs with severe disease. (2) Patients who cannot tolerate surgery; (3) Refuse or withdraw from the study halfway. (4) Patients without complete clinical data.

1.2 Methods Two groups of double lumen ileostomy, in which the control group used traditional nursing<sup>[3]</sup>, the contents included: the nursing staff should timely carry out stoma nursing for the newborn, and fully explain the relevant stoma knowledge to the children's families, including: (1) select and purchase stoma nursing products. (2), the family members were informed of the shape of the stoma in the form of pictures. (3) Correctly inform the family members of the fixation of the ostomy bag and the time of replacement, and timely provide psychological counseling for the family members. On the basis of the above, the observation group carried out bundle nursing for various complications that may occur after operation. First, the clinical manifestations and specific characteristics of complications of the children were analyzed. Combined with the relevant literature reports<sup>[4]</sup>, the corresponding summary and evaluation were carried out. At the same time, it was used as the evidence-based basis. The specific measures of bundle nursing were analyzed. The existing risk factors were used as the basis. Various nursing measures were implemented and implemented to prevent complications and promote the

rehabilitation of the children. The specific nursing contents were as follows: (1) Observation of the stoma: During the operation, the intestinal stoma site was covered with sterile gauze. Attention was paid to observe whether there was exudation in the gauze, and the amount, color and character of exudate. If there is fecal material exudation, it is necessary to timely clean it up and communicate with the doctor in charge to wear the ostomy bag when necessary. If there is a small amount of oozing, gauze can be used to stop bleeding by light pressure, or calcium alginate dressing can be used for hemostasis. If the amount of bleeding is large, surgical hemostasis is required, and bleeding due to coagulopathy is excluded. (2) Management of stoma: A large part of neonatal ileostomy surgery is emergency surgery, in addition to the small abdominal plane of newborns, so it is difficult to perform preoperative localization, which can only be decided by the doctor according to the intraoperative situation. At the first time when the child returns to the room after surgery, the doctor in charge should be actively informed of the child's surgical methods and approximate surgical procedures. The location of the stoma and the presence or absence of associated wounds were observed in the children, and all patients in this group had associated wounds. Therefore, after communication with the doctor in charge, the stoma was opened on the day after surgery in this group of patients. ① Periarthritis nursing: It is related to the stimulation of feces, sweat, digestive juice and chemicals after opening the stoma, improper placement of artificial anal bag resulting in leakage or compression friction. For patients with simple flushing, the ostomy bag with better durability can be selected after the ostomy bag is replaced, and skin protectants, such as zinc oxide ointment, can be applied to the erosive surface when erosion occurs, skin protectant scissors can be pasted afterwards to carry out double protection and assist the children in selecting appropriate nursing supplies; a complete skin protection program can be developed, and a reasonable ostomy bag size can be used to prevent dermatitis. ② Nursing of stoma stenosis: Stoma stenosis can be divided into two categories: early stoma stenosis and late stoma stenosis. The former is mostly caused by small abdominal incision, short free intestinal canal or too high tension, and the latter is mostly caused by repeated infection near the stoma, granulation tissue in exposed intestinal serosal inflammation, and local scar contraction. Most of the most obvious strictures were located at the junction of the mucosa and skin and rarely involved the entire layer of the abdominal wall. The core of prevention lies in reasonable incision size, primary suture of mucosa and skin, regular expansion through fingers until 1 week after operation, dipping of little finger with liquid paraffin or petrolatum and other lubricants, inserting into the stoma and expanding around at the same time, but it is necessary to avoid excessive depth and force and prevent damage to the stoma. Surgical treatment should be performed when finger dilatation is ineffective or the little finger cannot pass through for 1 month. ③ Nursing care of paracolic hernia of stoma: It mainly includes two categories: one is that the peritoneal incision and intestinal canal are not closely sutured, so that the intestinal canal protrudes from the space between the stoma colon and abdominal wall. For severe cases, the weak intestinal wall can be repaired and the stoma intestinal segment and peritoneal skin can be sutured in layers; the other is that the space between the stoma ileum and

lateral peritoneum is too large, the abdominal wall is weak, the abdominal pressure is increased, and the small intestine is embedded resulting in internal hernia. Close suture of the intestinal wall and abdominal wall space is required during surgery to prevent postoperative flatulence and infection. ④ Nursing care of stoma bleeding: Most of them are caused by friction of stoma mucosa. Dry cotton ball or 1:1000 epinephrine gauze can be used for compression hemostasis. For patients with large bleeding volume and deep site, ligation hemostasis should be carried out. 5 Stoma intestinal retraction nursing: the causes include insufficient mobilization of stoma intestinal segment during operation, high abdominal wall tension, and premature complete cutting of intestinal canal. Postoperative abdominal distension is severe, and premature removal of the glass rod, which plays a supportive role when carrying out the double-lumen stoma, can also cause such complications. After operation, it is necessary to strengthen the observation on the blood supply of external intestinal tube, the adhesion fastness of external intestinal cavity and abdominal wall. In case of suture loosening or detachment, it is necessary to timely notify the physician for suture fixation; in case of intestinal retraction and peritoneal irritation near the stoma, it is necessary to immediately inform the physician for treatment and re-stoma. Support with a glass rod needs to be firmly fixed at the adhesion attachment position of the intestinal wall and abdominal wall and can be removed until 7 to 10 days after surgery. Care should be taken to avoid compression of the external bowel during turning or feeding, and care should be taken to avoid glass rod detachment when using glass rod fixation to prevent intestinal retraction. (6) Nursing of stoma colon prolapse: Adopt the correct size of stoma bag and sticking method in nursing to reduce the frequency of bag change as far as possible. Mild prolapse is usually not treated, the prolapsed bowel is returned from the stoma to the abdominal cavity, and for those who fail to respond to repeated return, the excess bowel segment should be removed and the abdominal wall incision at the stoma should be sutured. ⑦ Nursing care of ostomy intestinal necrosis: Observe the blood supply of prolapsed ostomy intestinal canal, report that after the doctor gives manual reduction, use the patented "a new type of enterostomy anti-prolapse fixation auxiliary device" obtained by our hospital to fix the prolapsed intestinal canal, which can not only fix the prolapsed intestinal canal, but also not affect the discharge of ostomy fluid, avoiding the second operation in children. (3) Diet nursing: 5 ~ 7d after operation, according to the gastrointestinal decompression and recovery of intestinal function, the gastric tube was clamped for the child according to the doctor's advice. If the child had no vomiting, abdominal distension or other conditions, the child was fed with 5 ml of 5% glucose water every 3 hours on the second day. On the third day, the nutrition department would configure the child with formula milk with high calorie, high protein, less residue and less gas production. If the child is tolerable and does not experience vomiting, abdominal distension, or large stool volume, it will gradually increase to physiological requirements. During fasting, the child will be given parenteral nutrition support. (4) Psychological nursing: Neonatal necrotizing enterocolitis enterostomy surgery emergency surgery, surgery often let parents fear, anxiety, so we should take the initiative to enthusiastically receive parents, patiently talk to parents, let parents

understand the purpose and methods of surgery, inform them that this surgery is only temporary, to obtain the understanding and cooperation of parents. (5) Discharge instructions: First, parents should be taught hands-on how to correctly replace the ostomy bag, and second, parents should be informed of how to observe the stool and stoma and explain some common manifestations of stoma complications to parents. Furthermore, parents must be informed to select the correct stoma product and purchase channel to prevent improper selection of stoma product or buying false stoma product from causing some other damage to children. Finally, we will invite parents to join our department's ostomy communication WeChat group. In this way, they encounter any problems in the process of home care, and we can give guidance in the first place.

1.3 Statistical indicators (1) Complications: including stoma prolapse, stoma retraction, stoma edema, para-hernia, fecal dermatitis, etc.

(2) Nursing satisfaction: The self-made satisfaction questionnaire of our hospital was used to investigate the nursing satisfaction of parents in the two groups, including satisfactory, general and unsatisfactory options, and the total satisfaction was statistically analyzed. Total satisfaction rate = (general + satisfactory) cases/total cases  $\times 100\%$ .

1.4 SPSS 24.0 software was selected for data processing, enumeration data were expressed as (n,%), using  $\chi^2$  test; measurement data were expressed as ( $\bar{x} \pm s$ ), using t-test, and the difference was statistically significant at  $P < 0.05$ .

## 2 Results

2.1 Comparison of complications between the two groups: the observation group had fewer complications than the control group, and the difference had statistical significance ( $P < 0.05$ ), 1.

2.2 Comparison of nursing satisfaction between the two groups: The nursing satisfaction of the observation group was significantly higher than that of the control group ( $P < 0.05$ ).

## 3 Discussion

Bundle nursing is a new nursing model that has emerged in recent years. It has been widely recognized in clinical practice by bringing together many nursing measures that have been clinically confirmed to have a certain evidence-based basis and can improve the prognosis of patients. Compared with single implementation, the common implementation can improve the outcome of patients [5]. Neonatal enterostomy is usually a temporary stoma according to the child's condition, and then select the appropriate time to implement the second operation, complications should be actively prevented, in order to ensure that the second operation can be carried out smoothly. Enterostomy belongs to a common surgical treatment. The biggest difference between neonatal enterostomy and adult enterostomy is temporary. Three to six months after operation, stoma closure can be carried out until the clinical symptoms of the children are relieved or eliminated, so that the intestinal function

returns to normal [6]. Studies have found [7] that the incidence of complications after ileostomy is as high as 16.3% ~ 53.8%. The nursing work plays an important role in the prevention and prognosis of stoma complications. Therefore, it is very important to do a good job in the nursing work related to enterostomy complications.

Table 1 Comparison of complications between the two groups

Group	Stoma prolapse (case)	Stoma retraction (case)	Ostomy edema (case)	Para-hernia (case)	Stool dermatitis (case)	Total [case (%)]
Observation group (n = 25)	2	1	0	0	0	3 (12)
Control (n = 25)	4	2	1	1	6	14 (56)
X <sup>2</sup> value	-	-	-	-	-	12.38
P value	-	-	-	-	-	0.001

Table 2 Comparison of nursing satisfaction between the two groups

Group	Satisfied (case)	Fair (case)	Unsatisfactory (case)	Total satisfaction [case (%)]
Observation group (n = 25)	16	3	1	19 (95%)
Control (n = 25)	10	4	6	14 (70%)
X <sup>2</sup> value	-	-	-	4.33
P value	-	-	-	0.042

This study found that the incidence of complications in the observation group was much less than that in the control group, while the parental satisfaction was much higher than that in the control group, indicating that bundle nursing can reduce the occurrence of various complications and improve the parents' satisfaction with nursing services. The reason for consideration may be that the content is too single and lacks pertinence when traditional nursing is carried out in the past, and nurses perform various nursing operations according to the doctor's advice, so the nursing effect is often poor [8]. Bundle nursing has been widely used in China at present, and is a new type of health concept proposed by American Health. It is an intervention model that combines correct, with the same purpose and interrelated nursing measures confirmed by practice, has the characteristics of purpose, comprehensiveness, pertinence and integration, and has a better nursing effect [9-11]. According to relevant studies [12], bundle nursing can assist patients to obtain the expected effect, effectively reduce the occurrence of postoperative complications, and accelerate the recovery of psychological and physical function of patients. In this study, the comparison of bundle nursing and routine nursing adopted by the observation group was targeted and purposive, not to carry out nursing intervention in a wide range. It was to clarify the characteristics of postoperative complications and related risk factors in children under the premise of comprehensively understanding the data of children, find the data to obtain the best intervention method, and at the same time, do a good job in the summary of experience and method improvement and adjustment in the work; nurses implemented various nursing measures in strict accordance with the procedure, fully

reflecting the integrity of nursing, which helped to improve the efficacy of nursing intervention<sup>[13]</sup>. At the same time, by carrying out outpatient follow-up and WeChat group follow-up, the actual situation of children can be fully grasped, and some problems occurred in the nursing process can be solved in time, avoiding the occurrence of complications to a greater extent. In the implementation of ileostomy in children, because the children's families do not understand the surgical methods, they receive enterostomy surgery. However, the nursing staff can improve the compliance of the children's families by introducing the children's families in all aspects. In summary, bundle nursing for newborns undergoing ileostomy can reduce the occurrence of postoperative complications and improve parental nursing satisfaction, which is worthy of adoption.

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### Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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