

The study presents a short historical background and practical application of intestinal ostomy as a treatment method of various intestinal disorders and injuries. Ostomy is a purposeful connection of the lumen of the intestine with abdominal integuments by surgery. After the surgical formation of the intestinal fistula, the patient must adjust to the new situation, gain basic knowledge and learn procedures of ostomy care. Thus, professional medical assistance is extremely important. The study aims to discuss basic notions concerning ostomy and ostomy equipment. Providing high-standard care and assistance for patients with ostomy requires both appropriate knowledge and practical skills.

Key words: colostomy, historical background, the supply of ostomy equipment.

Selected problems associated with the treatment and care for patients with colostomy – part 1

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Historical background

The first mention of the (post-injury) intestinal fistula can be found in the first part of the Book of Judges (Old Testament) from the period of 1010-930 B.C. Colostomy is regarded as one of the oldest operations performed by a surgeon. The first “intentional” ostomies were performed as a treatment of injuries or intestinal occlusion. In 1783 Dubois, a Parisian surgeon, performed colostomy in a newborn with ankyloproctia. Dubois treated the child’s occlusion but the child died 10 days after the surgery [1]. The first successful colostomy was performed ten years later, i.e. in 1793. This was a procedure performed in a 3-day newborn with ankyloproctia. The patient lived with the ostomy for 45 years [1, 2]. Since the beginning of the 19th century colostomy has become an accepted method of treating intestinal occlusion. In this period colostomy was applied mainly in the treatment of rectal cancer. At the beginning of the 20th century it was included as a method of surgical treatment of non-neoplastic diseases of the large intestine. An operation of creating a single-barrelled ostomy was first performed by Charles Mayo in 1904, and after that by Ernest Miles in 1908. Since then single-barrelled colostomy has been inseparably connected with treating rectal cancer [1].

The term “ostomy” was introduced into Polish medical practice quite recently, i.e. in 1979, by Roman Góral and co-workers. The term comes from Latin and means a mouth, an opening, and also a fistula. Ostomy in the last meaning, as one of the methods of treating intestinal disorders, began to be applied in the surgery of the alimentary system. Thus, gastrostomy means a gastric fistula, jejunostomy is a fistula on the jejunum, ileostomy is a fistula on the small intestine, and colostomy is a fistula on the large intestine [3].

Colostomy

It is created by the sigmoid section of the large intestine; the Latin name *anus praeter naturalis sigma eis* is also used. It is located in the left hypogastrium and excretes formed stools. The discussed fistula can be single-barrelled (the outlet of the alimentary system is in the abdominal integuments, and the remaining part is excised or sewn up blind, mainly after abdomino-perineal rectum excision) or double-barrelled (when inflammatory lesions in the intestine are left to heal, or in the case of an inoperable tumour, in which the closer opening is the end section of the intestine, and the further one is a natural path to the anus, from which only mucus comes out) [4, 5]. Depending on the primary disease and/or the operation method, ostomy can be permanent or temporary; in the second case, there is a possibility to postpone the next surgery [5]. According to various authors, restoring the continuity of the alimentary tract after this type of surgery (depending on the primary disease) occurs in 10–80%

of cases, usually at the terminal stage of the disease [1]. The ostomy reaches the final size about 2–3 months after the surgery. The ostomy directly after the surgery [6].

After designating the place of the artificial anus, individual factors are taken into account: it should be on an even surface of the stomach, far from iliac spikes, scars, skin folds, post-radiation lesions and skin grafts [7]. The ostomy should be made 4 cm from the main surgical incision. Colostomy should be protruding over abdominal integuments by approx. 0.5–1.5 cm [8]. The colour of the ostomy is red and it remains moist. Due to the fact that it has no nerve endings, it is not sensitive to external stimuli such as touch, cold or heat, pain, etc. [9]. The ostomy is not a wound or a disease but an artificial outlet for the intestinal matter. As a result of creating the ostomy, a loss or decrease in the ability to store intestinal matter takes place, and the control over excretion is lost [10, 11].

The most important indications for colostomy:

- large intestine (colon or rectum) cancer,
- acute cases of non-specific intestine inflammations (ulcerous inflammation of the large intestine, Crohn's disease),
- colonic diverticula with complications,
- large intestine occlusion (usually due to cancer),
- effects of colon or rectum injuries,
- diffuse faecal peritonitis resulting from large intestine injury or perforation caused by diverticulum inflammation,
- intestinal wall necrosis in the course of intestinal ischaemia (sigmoid volvulus, etc.) [12].

The choice of the proper ostomy equipment depends solely on the user; the nurse may only give advice on which type of ostomy equipment is the best choice for the patient with a given health status. A particular type of pouch is not suitable for every patient. This is conditioned not only by the user's personal preferences (such as the choice between beige and transparent pouches), but primarily by other factors including: 1) the type of the ostomy, 2) size, 3) location, 4) skin sensitivity, and 5) lifestyle of the person with the fistula [13]. The proper choice of ostomy equipment is essential for normal functioning at home, at work and in any other environment. It is also of key importance for the protection of skin around the ostomy. A suitable choice of equipment makes it possible to prevent complications such as skin inflammation around the ostomy.

Professional ostomy equipment with direct contact with the skin, such as plates or adhesives, should meet the following criteria: easily adhere to dry or moist skin for a long time, be hypoallergenic (not induce allergies) and air-permeable ("breathing"), absorb moisture from the skin surface, and have skin-healing properties. Moreover, it should maintain the natural skin pH (5.5), it should be possible to remove it easily and painlessly, it should be elastic and adhering to uneven surface of the skin, and ensure long-time protection of the skin around the ostomy against the irritating effect of faeces. It should not irritate or chafe the skin [6, 14].

Ostomy equipment consists of a pouch and an adhering device [4]. Basically, there are two solutions which can be recommended to a person with an ostomy [13]:

- a one-part system with an adhesive surface, creating one part with the pouch, is more convenient and hygienic, espe-

cially during a trip. This is a pouch with a permanent adhesive. Changing the pouch consists of unsticking the container and adhering a new pouch;

- a two-part system: the plate is adhered to the skin, and the pouch is attached to the plate or fitted on a ring. Only pouches are exchanged, and the plate is left on the skin for several days. The plate adheres to the skin, and the pouches are fitted to the plate using two plastic clamp rings, of which one is in the plate, and the other is attached to the pouch.

The synergy system is a type of two-part system. It consists of two separate elements, self-adhesive plates attached to the skin and a bag attached to it. It is intended for all types of intestinal ostomies, except for the concave ostomy. The lack of a plastic clamp ring makes it possible to attach the pouch to the plate without the necessity to pressure the abdominal integuments, which can be an advantage, especially directly after surgery. As the producer claims, the pouch can be repeatedly attached to and detached from the plate (even several dozen times a day) without decreasing the adhesion rate. The connection between the plate and the pouch can hold up to approx. 2 kg, while the average maximum weight of a full pouch never exceeds 200–300 g [15].

The parts of the ostomy equipment

1. Plates are changed every few days (usually every 3–4 days).

Types of plates:

- with an outlet cut to the proper diameter – practical for persons with an ostomy with regular (round) shape or for those whose manual skills are not sufficient to cut out a proper outlet,
- in a version for self-adjustment of the diameter – practical in the case of an irregular shape of the ostomy,
- a plastic plate is intended for concave and flat ostomies with an irregular shape.

The initial outlet in the plate can be easily and precisely formed with one's fingers; it adjusts to the size and shape of the ostomy without the necessity to use scissors [15].

2. Pouches on the side adhering to the body are covered with delicate and soft interfacing. Due to this they never chafe the skin and ensure high comfort of use. The pouches are changed when necessary, from 1 to 3 times a day. The foil from which the pouches are made does not rustle or pick up static. Inside there is a kind of a bubble foil muffling releases of gases and a filter neutralising the smell. One-part pouches with an adhesive are available: with an outlet cut to the proper diameter (they can be used only by persons with a regular shape of the ostomy) and in a version for self-adjustment. Types of pouches:

- with the possibility of repeated use after emptying – used when the secretion from the intestine is of loose consistency (it is infrequently applied in colostomy),
- closed – worn in the case of colostomy when the intestinal matter is formed,
- one-part with an oval shape for double-barrelled ostomies,
- transparent – practical in the post-operative period when the transparent walls of the pouch make it possible to observe the ostomy and the intestinal matter. This type of pouch makes it possible to check whether there are

any complications (without the necessity to detach the pouch from the plate),

- beige pouches – more discrete, with a colour close to the skin tone, are willingly chosen by patients with a longer history of ostomy use for whom discretion is a priority. Due to the lack of transparency, the intestinal matter is invisible from the outside,
- with non-standard capacity: higher, or lower (created mainly for children but adults can also use it when they need protection in the form of a small pouch [16].

A person should use a pouch with a diameter of the outlet 2–4 cm larger than the diameter of the ostomy. The free space is necessary so that after attaching the pouch the distance from the edge of the outlet and the mucosa of the ostomy to each point of the circumference does not exceed 1–2 mm [15]. The colostomy pouch is available in three sizes: up to 35 mm, up to 48 mm, and up to 61 mm [17].

3. Accessories [18–20]:

- A cap (faeces receiver) – a small pouch securing the outlet of the ostomy intended for persons using irrigation.
- The foam and tissues for washing the skin do not require draining after use.
- Pads with a protective liquid are small and easy to use. They are applied on previously washed (with water and soap or washing foam) and dried skin. The skin around the ostomy (but not the ostomy itself) is washed with the pads and left for around one minute before attaching a new plate or pouch. It is especially recommended as additional protection against potential irritation caused by contact of the intestinal matter with the skin.
- Anti-chafing cream is used on dry and irritated skin. A thin layer of cream is applied to washed and dried skin until it is absorbed. The unabsorbed cream should be removed before attaching the pouch.
- The sealing ring creating a barrier resistant to leaks absorbs moisture by forming a gel, prevents skin irritation, extends the time during which the pouch can be worn, is elastic, and does not get dry during forming, as happens in the case of the universal size.
- The healing powder is white and includes a hydrocolloid material. Its very strong healing properties are used in the treatment of skin-related complications around the ostomy (e.g. acute skin inflammation), accompanied by effusion (oozing) lesions. The powder should be applied in all cases when the skin around the ostomy is red, and when there are small drops of serum which cause it to be constantly moist. Apart from discomfort and pain, such lesions make it significantly more difficult to attach the ostomy equipment and shorten the adhesion time.
- The tightening and healing paste extends the adhesion time of plates and pouches on the skin. It improves the tightness and adhesion of the equipment to the skin, preventing leakage of intestinal matter. It can happen that after attaching the equipment the person with the ostomy feels a slight burning sensation but this reaction is usually momentary and passes after several seconds. The paste should be spread directly around the ostomy to form a protective ring directly before adhering the ostomy equipment.
- The healing paste should remain on the skin for approx. 15–20 minutes so that it can be effective (the longer, the bet-

ter). Because it has a greasy consistency, the ostomy equipment cannot be adhered to it directly. It should be carefully washed from the skin with water and soap or with a washing foam. The paste is particularly easy to use in the case of colostomy because there is no risk that the intestinal matter will get it wet during its application for healing purposes.

- Additional adhesion – the belt is particularly useful in the case of patients with a soft stomach or those whose ostomy is below the level of the stomach wall. The belt can be easily attached to special buttons in the pouch.

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