Stomas in infants and children: Part II

STOMA CARE

Stoma care is a neglected part of stoma management, and has the most impact on the parent who will care for the child. Continued support after discharge from hospital is essential.

Cervical oesophagostomy

Saliva draining from the oesophagostomy is non-irritating to the skin. The stoma should be kept clean and dry, either with absorbent gauze or towelling. Pouching in the neonatal or infant period is unnecessary.

Children with a cervical oesophagostomy should be fed through a gastrostomy. They should have oral sham feeds at the same time as gastrostomy feeding to induce and maintain normal feeding skills. Toddlers should be encouraged to eat their normal full diet. The proximal oesophagus should be cleaned with water after each solid feed.

Gastrostomy

The gastrostomy site is washed with soap and lukewarm water, and the skin dried thoroughly afterwards. No gauze is needed around a gastrostomy tube. Leakage of the contents alongside the tube may result in skin excoriation. This can be prevented by using an appropriately sized tube, by gentle traction on the tube, or by inserting a slightly greater volume in the retaining intragastric balloon.

Fungal infection, in particular Candida species, is a common problem with longstanding gastrostomies and may lead to diarrhoea, malabsorption and disaccharide intolerance. Routine prophylactic antifungal therapy is indicated, usually with nystatin. The application of silver nitrate pencil is sufficient to treat granulation tissue that may develop around the gastrostomy.

Colostomy and ileostomy

Evaluating the stoma colour, size, suture line and skin integrity as well as the amount and consistency of effluent is an ongoing process, particularly during the immediate postoperative period.

In neonates, in the immediate postoperative period, the stoma is usually covered with Vaseline gauze, which should be changed at least every 4 hours to keep the stoma moist. This allows the nurse, caregiver or stoma therapist to observe the viability of the stoma, and it is the preferred method used by caregivers at the Red Cross Children’s Hospital.

Ileostomies need pouching once they start functioning because of the enzymatic activity of the effluent, which can rapidly cause skin excoriation. Sigmoid colostomies can easily be managed without pouching. The decision to manage the stoma by pouching, as opposed to using a diaper, is based primarily on the need for skin protection. The suture line should be intact. Skin protection is provided by using ointments, skin protection wafers or sealants. The pouching system is designed to protect the skin, provide a secure seal, control odour, and ensure comfort. Diaper nursing, particularly in the case of sigmoid colostomies, is cost effective and easy to manage.

General stoma care

Wash the stoma gently with a mild, non-oily soap and warm water. Avoid rubbing, as it may cause bleeding. A child with a stoma can enjoy a bath like any other child. It is important to reassure the mother or caregiver that there is no pain associated with a stoma. The infant or baby can lie on his/her stomach, which may be important for normal neurodevelopmental maturation.
No special diet is needed for a child with a stoma and where possible breastfeeding should be encouraged. If using a pouch, empty it before it becomes more than one-third full, and change it before leaking occurs. A pouch should be able to stay on for at least a few days.

Skin excoriation
This is usually due to the nature of the effluent, which may be acid or contain active enzymes or possibly be contaminated with bacterial overgrowth. Prevent skin irritation by cutting the skin barrier wafer to fit the stoma. Then apply the pouch correctly. Careful cleaning and drying of the skin around the stoma with every pouch change may also help to prevent excoriation. Contact dermatitis may develop from the pouch adhesive, in which case one should change to a different adhesive (Fig. 1).

Bleeding
Bleeding from the stoma site in the immediate postoperative period is caused by inadequate haemostasis during fashioning of the stoma. This can be dealt with in the ward by bipolar diathermy coagulation of bleeding points. Bleeding is also caused by portal hypertension. Trauma to the stoma itself may occur and is usually due to improperly sized or applied pouches that injure the mucosa. Minor superficial bleeding during pouch changing often stops spontaneously. Occasionally there may be recurrent disease in the bowel, e.g. inflammatory bowel disease.

Necrosis
A normal stoma should be moist and red. Stoma viability should be observed frequently in the immediate postoperative period. Necrosis is most frequent after necrotising enterocolitis and can be avoided by preserving vascular supply to the bowel ends and by bringing out at least 2 cm of bowel above the skin level at the time of surgery, as some distal necrosis is to be expected. If the stoma does become necrotic, this will require immediate re-operation and mobilisation of more viable bowel for refashioning of the stoma.

Prolapse
Prolapse usually results from mobility of the bowel within the peritoneal cavity or from an overly large opening in the abdominal wall, which allows the bowel to intussuscept and protrude. Occasionally there is poorly developed fascial support, as in small premature infants. Distal stomas in transverse colostomies are particularly prone to prolapse, hence our preference for a more distal stoma in the sigmoid colon. Mild prolapse can be treated conservatively, but if it becomes severe the blood supply may be compromised and immediate reduction, usually under anaesthesia, may be required. Bedside manoeuvres, such as placement of Thiersch’s sutures or attempts to tighten the fascial defect in the abdominal wall, are rarely successful in the long term. Other techniques have included suturing the colonic wall to the peritoneum and fascia, skin bridges, and tunnelling of the distal loop of the colostomy under the peritoneum. Our current technique of preventing prolapse by inversion and plication of the distal stoma with a relatively small distal aperture has been effective. Temporary management of established prolapse has been effected with U-type sutures or buttons or inserted bottle nipples, with relatively limited success (Fig. 2).

Fig. 1. Peristomal skin excoriation due to irritation from small-bowel contents.

Fig. 2. Significant prolapse in a child with transverse colostomy.

Stenosis and retraction
Stenosis may result if the stoma is not adequately matured at the time of initial surgery or if there is mucocutaneous separation of the stoma. Severe stenosis requires stomal revision. Retraction may be caused by insufficient stoma length, tension on the fascial sutures and inadequate fixation of the bowel. This most frequently occurs when a transverse colostomy is attempted in distal obstruction owing to anorectal malformation and when the upper rectum is brought out inadvertently in the right upper quadrant as a decompression stoma. Once the bowel decompresses the stoma will inevitably retract and be inadequate. This is a frequent pitfall of the inexperienced.

Parastomal hernia
Parastomal hernia is usually due to placement of the stoma lateral to the rectus sheath where the abdominal wall is relatively weak, or to failure to suture the bowel adequately to the surrounding fascia. It also occurs more frequently in premature infants with a particularly thin abdominal wall. Most of these can be managed conservatively until the time of stoma closure.
STOMA CLOSURE

Stoma closure has previously been reported to have a high morbidity and even some mortality in both adults and children. The preoperative preparation for stoma closure should include a contrast study of bowel distal to the stoma to confirm patency, to identify strictures or other pathology and to exclude the presence of an obstructing faecaloma, which would require removal before closure. As part of the bowel preparation an iso-osmolar, balanced electrolyte solution such as Go-lytely is used as a prograde lavage. The distal bowel is also washed clean. Intravenous perioperative antibiotics (cephalosporin and metronidazole) are given, starting before surgery, to cover Gram-negative organisms and anaerobes. Administration of these antibiotics is continued for 24 hours.

CONCLUSION

In paediatric surgical centres the staff, as well as the parents, have to be educated in the management of stomas, even though most stomas are temporary. In the past few years there have been great improvements in the types of stoma appliances and adhesives. Postoperative management of a stoma and the support that these patients and their parents require are best provided by a designated stoma therapist. The stoma therapist should supervise the placement and management of the stomas and their complications, and should be available to any parent or older patient to help with problems that may develop. The stoma therapist is also responsible for educating the staff and doctors as to the correct early management of stomas. The introduction of stoma therapists into an establishment usually leads to a reduction in the incidence of complications and, in particular, they give a great deal of moral support to patients and their parents. With due care and meticulous technique most of the complications and social stigma associated with stomas can be avoided.

Indications for stoma formation at Red Cross Children’s Hospital, 1999 - 2004

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anorectal malformation</td>
<td>80</td>
</tr>
<tr>
<td>Hirschsprung’s disease</td>
<td>65</td>
</tr>
<tr>
<td>Necrotising enterocolitis</td>
<td>33</td>
</tr>
<tr>
<td>Trauma</td>
<td>11</td>
</tr>
<tr>
<td>Neoplasm</td>
<td>5</td>
</tr>
<tr>
<td>Oesophagoscopy/dilatation</td>
<td>4</td>
</tr>
<tr>
<td>Sepsis</td>
<td>3</td>
</tr>
<tr>
<td>TB strictures</td>
<td>2</td>
</tr>
<tr>
<td>Amoebic colitis</td>
<td>2</td>
</tr>
<tr>
<td>Intussusception</td>
<td>1</td>
</tr>
<tr>
<td>Colonic atresia</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
</tr>
</tbody>
</table>

SINGLE SUTURE

AFFLUENCE AND CONTRACEPTION

You might expect that affluent career women would be knowledgeable about and efficient in their use of oral contraceptives - this on the back of studies among poor rural and urban women that show low levels of knowledge of oral contraceptives. However, a recent paper from Tygerberg Hospital suggests that educated, affluent women attending a private general practice lacked basic knowledge of the oral contraceptive pill. Of the 51 women who took part in the study, 71% had no children, 80% had a tertiary level qualification, 84% were employed and 65% were not worried about the cost of the pill. Most got their information from their doctor. However, only 12% of the women were aware of the dangers of extending the pill-free interval and less than half knew that the pill was less effective if taken more than 12 hours late. Only 31% of these women knew that, when the pill was taken late, it was only effective again after 7 days of active pills. This result may say more about the information, or lack thereof, imparted by the private GP than about the women themselves.