CASE REPORT

Continent Pouch Ileostomy

S K S Tay, FRCSE
F A Meah, FRACS,
M R Isa, DCP*
K S Phang, DCP*
*Departments of Surgery and *Pathology, Faculty of Medicine,*
Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur

Summary

Continent pouch ileostomy is fashioned for patients who need a proctocolectomy. It is usually indicated for cases of ulcerative colitis and familial adenomatous polyposis where the anal sphincter can no longer maintain normal function or has to be removed. A case of familial adenomatous polyposis with features of Gardner's syndrome is reported. The patient presented with carcinoma of the rectum. Abdominoperineal resection followed by completion pancolectomy was performed. A continent pouch ileostomy was fashioned for him. He resumed work as a labourer within six months. The pouch was troublefree, needed to be emptied four to six times a day and was fully continent of fluid, flatus and faeces until his demise three years later from liver secondaries. Continent pouch ileostomy is a better alternative than permanent end ileostomy. All care should be taken to rule out the existence of Crohn's disease. It is proposed that continent pouch ileostomy should be offered to patients needing permanent ileostomy if the expertise is available.

Key Words: Continent pouch ileostomy, Kock's pouch, Familial adenomatous polyposis, Carcinoma of the rectum, Polyposis coli, Panproctocolectomy

Introduction

Conventional end ileostomy used to be the operation performed for patients needing proctocolectomy whose anal sphincters cannot maintain continence or are involved in the disease process. Today, better options are available like pelvic pouches and continent pouch ileostomy.

Case Report

LJW, a forty-five-year-old man presented after five months of abdominal cramps and bloody diarrhoea with mucus. He had loss of appetite and weight. He had been treated for epilepsy for the past four years. He was emaciated, pale and depressed. Per rectal examination revealed a mass at about four cm from the anal verge, which on the biopsy revealed a well-differentiated adenocarcinoma arising from a tubulovillous adenoma. Since the mass was obstructing the lumen of the rectum, no barium enema nor colonoscopy was performed.

At surgery, the colon was found to be studded with multiple polyps. A diagnosis of familial adenomatous polyposis with malignant change was made. Multiple lymph nodes were found scattered all over the mesocolon and along the vascular pedicles. Several of them were three to four cm in diameter and appeared to be involved by metastases. The liver was grossly free of metastases.

Abdominoperineal resection of the rectum only was performed as a palliative procedure because it was thought that there was extensive involvement of the lymph nodes by metastases. Figure 1 shows the resected rectum cut open to reveal the carpet of polyps.

Histopathological report confirmed numerous polyps (one to four cm in diameter) with moderate atypia and a focus of frank carcinomatous change in the largest one (low down the rectum) with possible involvement of the muscularis mucosae (Fig. 2). Suspiciously enlarged mesocolic lymph nodes that were sampled and those removed with the resected specimen did not show involvement by the malignant process. Postoperatively, the colostomy became dusky and had to be revised under general anaesthesia on the fourth day when there was persistent ileus.

Other features of Gardner's syndrome documented in him were osteoma of the skull, adenoma of the ampulla of Vater, multiple epidermoid cysts, keloidal tendency and dense mesenteric and intraabdominal fibrosis. Intracranial tumour could not be confirmed because he refused a CT scan of the brain.

Fig. 1: Rectum and colon carpetted with Polyps.

Fig. 2: Villous adenoma with severe dysplasia.

After seven months, when it was obvious that there were no abdominal masses nor evidence of distant metastases he was persuaded to undergo another laparotomy. At the relaparotomy, there was a very hypertrophic abdominal scar and very dense mesenteric fibrosis. The mesenteric lymph nodes were multiple, large and felt very firm. Frozen section histology of these lymph nodes were negative for malignancy. Completion pancolectomy was performed and a continent pouch ileostomy was fashioned for him. Unfortunately, about 40 cm of the small bowel had to be sacrificed because of mesenteric fibromatosis. The pouch was fashioned following the model proposed by Skinner's modification of the Kock's pouch[1]. In this case, hand-sewn prolene sutures were used instead of staples to hold the nipple valve in place.

The pouch was drained continuously for three weeks with an indwelling catheter (Figs. 3 & 4). Thereafter, intermittent self-catheterisation was commenced using

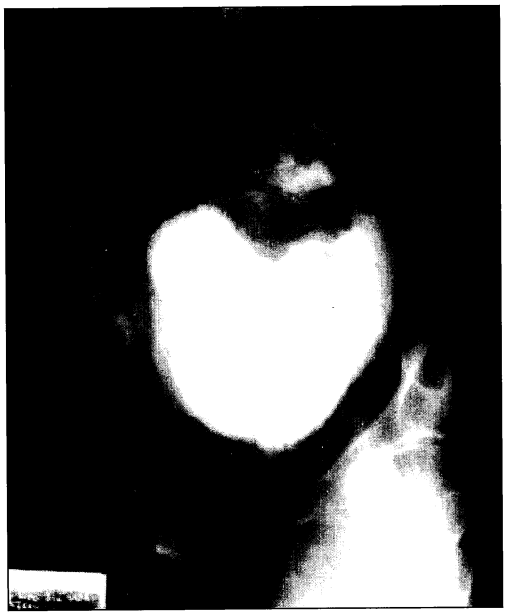

Fig. 3: AP view

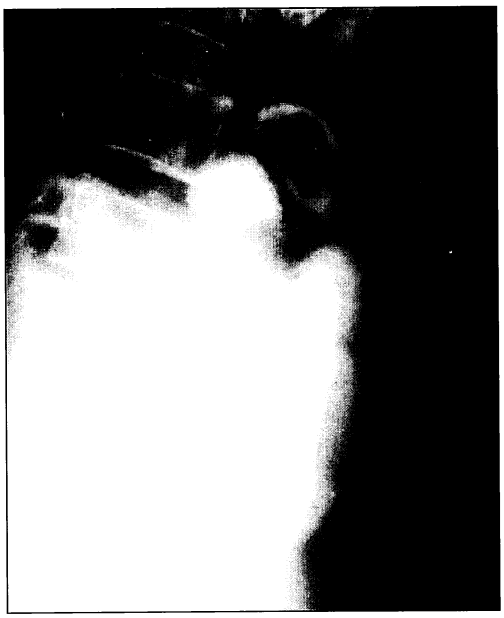

Fig. 4: Lateral view

PONCHOGRAM

a Foley's 22F catheter every three hours. The catheter was left indwelling at night for convenience and comfort of the patient. He was discharged one month after the surgery fully rehabilitated. At about four months after the surgery, he encountered difficulty in intubation of the stoma. There was slight fluid incontinence when the pouch was fully distended. The catheter was changed to a 28F portex chest tube to overcome difficulty in intubation and the incontinence resolved spontaneously with time. Six months after surgery, he resumed his work as an odd job labourer. He remained fully continent to fluid and flatus despite full distension of the pouch (Fig. 5) until his demise. He only needed to intubate the pouch four to six times a day. Two and a half years after surgery, tumour metastases were documented in his supraclavicular lymph nodes and the liver. He died six months after that.

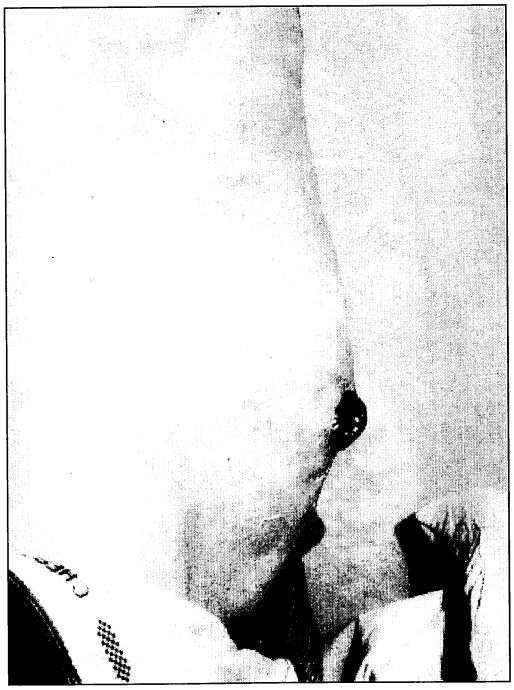

Fig. 5: Lateral view – Fully distended continent pounch ileostomy.

Discussion

Familial adenomatous polyposis is a genetic disorder with an autosomal dominant mode of inheritance. The gene responsible for the disorder is called the APC

gene and is located on chromosome 5q. Genetic alterations included point mutations, deletions or insertions in the nucleotide sequence. One particular mutation is associated with late onset of colonic polyps and this has clinical implications as to when to stop screening. In 20-25% of cases, the disease could also arise from genetic mutation in a previously normal family.

One of the patient's three children has manifested polyposis coli at 19 years of age. He has been followed up with yearly colonoscopy and a restorative proctocolectomy is planned for him in the near future. The other two are girls in their early teens and so far, their recta are free of polyps.

This patient is a case of Gardner's syndrome. There is no distinction between familial adenomatous polyposis and Gardner's syndrome. The features of familial adenomatous polyposis have been well reviewed[2]. The features are classified according to those arising from the endoderm, mesoderm and the ectoderm.

Continent pouch ileostomy is indicated in cases after proctocolectomy where the anorectum could not be retained due to malignant change low in the rectum (as in this case), or where previous surgery/disease has caused severe dysfunction of the anal sphincters. Sometimes continent pouch ileostomy is fashioned as a staged procedure en route to restorative proctocolectomy. This is done in cases where the mesenteric length is too short to allow a one-stage restorative proctocolectomy. The mesentery of the small bowel lengthens with time while the continent pouch ileostomy is in place. At a second sitting, the pouch is then anastomosed to the anal canal.

Continent pouch ileostomy gives the patient an odourless and appliance free stoma and allows him to be dry and socially acceptable. Also, the stoma is small, flat and can be placed below the waistband of the underwear. Thus it is more easily concealed and cosmetically more acceptable. When the performance of these patients is compared with those having conventional ileostomies, those with continent pouch ileostomies have improved working capacity, improved quality of sex life and enjoyment of leisure activities. They have less limitation at work, in choice of hobbies and social contacts, and are found to be more often satisfied with their continent stomas[3]. This patient has experienced relative freedom in choice of work, social contacts and activities. Continent pouch ileostomy has also been performed for teenaged patients with good results. In the event of pregnancy, no major problems have been encountered. Vaginal deliveries have been documented. Difficulty in stomal intubation has been reported in late pregnancies in about a third of patients.

Owing to the complexity of the procedure and the infrequent indication for its use here, the complication rate can be rather high. Most of it is related to technical failure of the nipple valve which ensures the continence mechanism. Operative mortality was reported as 1.6% with complication rates of between 8% and 23%. Complications reported included: nipple valve slippage, fistula, prolapse leading to partial incontinence and partial continence, stomal strictures, fascial ledge leading to difficulty in intubation; intestinal obstruction, intraabdominal abscess, ventral hernia, foreign body in reservoir and pouchitis. Pouchitis is characterised by abdominal pain, bloating, increased ileal output, sometimes with nausea, bloody effluent and fever. Various grades of ileitis is usually seen on endoscopy. Histology usually reveals chronic inflammation. Clinically, this should be differentiated from ileal pouch anastomotic leak, which can be difficult sometimes.

Revisional surgery rates were reported to range from 10-66%. About 5% of pouches needed to be removed. Reoperation rates for nipple valve failure were in the range of 9-20%. Improved results were shown if the valve was at least 5 cm long, anchored with staples, and if continuous drainage of the pouch was done for four weeks postoperatively. Overall, a continence rate of up to 95% could be achieved over five years. In this patient, the nipple valve was anchored with prolene sutures and the pouch was drained continuously for three weeks. In view of all the above possible morbidities, the results of this patient's pouch was quite acceptable until his demise from the tumour metastases.

Continent pouch ileostomy should be offered to patients in need of a permanent ileostomy. In case of

proctocolitis, every care should be taken to exclude Crohn's disease. Owing to the high complication rates associated with this procedure, it is proposed that it should be performed in centres with expertise in colorectal surgery.

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