Adenocarcinoma of an ileostomy in a case of Hirschprung's disease with retroviral disease

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Abstract

The number of ileostomies created for benign diseases such as familial adenomatous polyposis and ulcerative colitis is increasing. Long-term ileostomies are prone to develop various complications over time. Ileostomy site carcinoma is a well-established complication in ulcerative colitis and familial adenomatous polyposis that have undergone total colectomy. However, no case of ileostomy site carcinoma has been described in a patient with Hirschprung's disease. We present the first case of adenocarcinoma at an ileostomy site in a patient with Hirschprung's disease with retroviral disease.

Introduction

Adenocarcinoma at an ileostomy site is a very rare complication with only 41 cases reported in the literature worldwide. These cases are mostly seen in patients with long-term ileostomies such as ulcerative colitis and, more rarely, Crohn's disease and familial adenomatous polyposis. However, no case has been reported in a patient with Hirschprung's disease. We present the first ever case of ileostomy site carcinoma in a known case of Hirschprung's disease with retroviral disease.

Case Report

A 55-year old male patient of Indian origin presented to the Emergency Department with complaints of decreased stoma output, abdominal pain, distension and vomiting for two days. He had a history of Hirschprung's disease for which he underwent a pull-through procedure at Day 10 of life along with a temporary transverse colostomy. Efforts to close the transverse colostomy at ten years of age failed as the patient developed bowel obstruction and a second temporary loop colostomy was performed. At 25 years of age, the patient underwent right hemicolectomy with an end ileostomy as second surgery since closure of loop colostomy was not possible because of the patient's case hisotry. No medical records of previous surgical interventions were available.

The patient was positive for retroviral infection and had been on retroviral therapy for the past seven years. His CD4 count was 490. Abdominal x-ray was suggestive of small bowel obstruction with multiple air fluid levels which was managed conservatively. Digital rectal examination showed a stricture in the rectum. On abdominal examination, there was a proliferative growth involving the mucocutaneous junction of the ileostomy site (Figure 1). However, no regional lymphadenopathy was seen on clinical examination. The sprout of the ileostomy site was thickened. Biopsy from the lesion was suggestive of adenocarcinoma. Computed tomography of the abdomen did not reveal metastasis to pelvic lymph nodes (Figure 2). Levels of the tumor markers carcinoembryonic antigen (CEA) and alpha feto protein were normal. The patient underwent *en bloc* wide local excision of the ileostomy along with the adjacent anterior abdominal wall with a 3 cm margin (Figure 3) and re-siting of the ileostomy. On pathological examination, grossly the tumor measured 3×2.5×2 cm and on microscopic examination moderately differentiated adenocarcinoma was seen (Figure 4). Margins were tumor free. The patient did not receive any adjuvant therapy and is asymptomatic after one year of follow up.

Discussion

Long-term stomas are prone to develop complications. Stomal complications are reported in 30-75% of patients with conventional ileostomy.[1] They include retraction, prolapse of stoma, parastomal herniation, abscess, fistula, skin irritation, intestinal obstruction, stenosis, diarrhea, urinary calculus, ileitis, and inflammatory polyps.[1,2] Primary adenocarcinoma of ileostomy is a rare and late complication. The first case of primary adenocarcinoma following proctocolectomy for ulcerative colitis was reported by Sigler and Jedd in 1969.[3] The first case of ileostomy adenocarcinoma following proctectomy for familial adenomatous polyposis was reported by Roth and Logio in 1982.[4] Suarez *et al.* estimated the incidence of ileostomy carcinomas in Britain to be 2-4 per 1000 ileostomies.[5] One case of lymphoma in ileostomy has also been reported.[6] Similarly, 2 cases of melanoma and 4 cases of squamous cell carcinoma at an ileostomy site have been reported.[7,8] In reported cases, the interval between surgery and neoplasia ranges from 2-48 years (mean 22 years).[5] In the present case, the time interval was 30 years.

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The etiology of ileostomy adenocarcinoma is still a subject of debate. One theory suggests repeated chronic irritation plays a part. The exposed portion of an ileostomy is repeatedly subjected to physical trauma and to chemical or physical irritation from materials or adhesives used in conjunction with the ileostomy appliance.[5] This chronic irritation predisposes the ileal mucosa to colonic metaplasia, dysplasia, and finally malignant change. This multi-step progression theory of cancer resembles a similar mechanism proposed for sporadic reports of malignancy in ileal pouches after restorative proctocolectomy for ulcerative colitis.[9,10] In that model, the chronic inflammation of the ileal mucosa of the pouch, pouchitis, has been associated with dysplasia and cancer.[11-13] It has been seen that the bacterial flora in patients with long-term ileostomies resembles the colonic type rather than that of the normal ileum.[14] This change in the bacterial flora has been suggested to be due to the production of sulfomucins which are present exclusively in the colon, to the complete exclusion of the small intestine, where sialomucins are produced.[15]

The other hypothesis is that the disease process that precipitated the formation of ileostomy may play a causative role in carcinoma formation. Most cases of ileostomy site adenocarcinoma have been seen in ulcerative colitis. The case for an etiological role of ulcerative colitis in these patients is less clear. These

have generally been attributed to irritation from backwash ileitis. Other factors that are associated with this include the extent of the colitis, age at onset, and disease severity and duration. There are fewer cases of ileostomy site carcinomas in patients with Crohn's disease. This can be attributed to the fewer number of patients with Crohn's disease and the lack of continued follow up in these patients when compared to patients with ulcerative colitis. It is well known that adenomatous polyps occur more frequently in ileal pouches after restorative proctocolectomy than in patients with familial adenomatous polyposis.[16,17] In fact, the conditions leading to colorectal polyposis and cancer in these patients, mainly genetic factors or residual rectal mucosa, are still present.[18,19] It is well known that retroviral disease is a known factor for immunosupression. Although Kaposi's sarcoma and lymphoma have been included in acquired immunodeficiency syndrome (AIDS)-defining malignancy, the relative risk for development of colon cancer is 0.9. Our patient also had retroviral disease which could be another added factor for malignancy. However, this still has to be explored in other patients before any conclusions can be drawn.

Clinically the patients usually present with bleeding, difficulty in fitting the stoma appliance, and bowel obstruction. The most common physical finding is presence of a friable bleeding mass or ulcerative lesion at the mucocutaneous junction of the ileostomy. Differential diagnosis includes inflammatory polyps. Attanoos and colleagues studied a series of 60 ileostomy polyps occurring in 7 patients who received an ileostomy for ulcerative colitis.[2] Fifty of these polyps were inflammatory polyps associated with ileostomy prolapse. Another six polyps consisted of granulation tissue. Four polyps proved to be neoplastic: two were adenomas, one was an invasive adenocarcinoma and the other a mucinous adenocarcinoma. The other differential diagnosis includes Crohn's disease, pseudopolyps, pyoderma gangrenosum, squamous cell carcinoma, ileitis or backwash ileitis at the stoma, and pseudoepitheliomatous hyperplasia.[20]

A biopsy is usually performed when a suspicious lesion occurs at the ileostomy. The biopsy should be taken from the stoma-epidermal junction in order to avoid a false negative for adenocarcinoma. Tumor markers, *i.e.* serum CEA levels, have not been a helpful addition to diagnosis.

Figure 1. Proliferative growth involving the mucocutaneous junction of the ileostomy site.

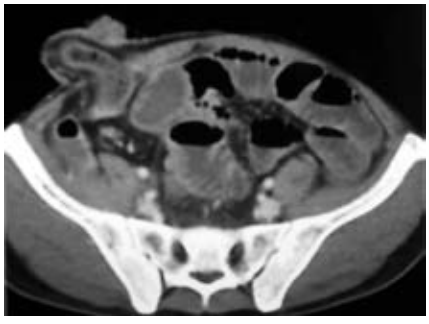

Figure 2. Computed tomography of the abdomen and pelvis showing ileostomy with tumor and no evidence of metastasis to the lymph nodes.

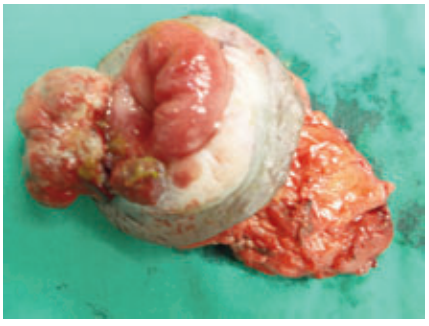

Figure 3. Specimen showing wide local excision of the ileostomy and the proliferative growth along the adjacent anterior abdominal wall.

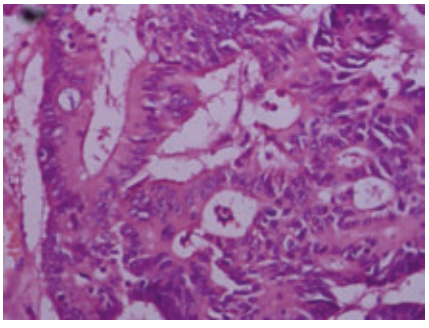

Figure 4. Histology showing adenocarcinoma (Hematoxylin & Eosin stain 100X magnification).

An *en bloc* wide local excision of the ileostomy with the adjacent anterior abdominal wall with or without transposition of the stoma to a new site is the treatment of choice for an adenocarcinoma arising from an ileostomy.

Conclusions

Adenocarcinoma arising from an ileostomy site in a known case of Hirschprung's disease is rare. The retroviral status of the present case could possibly be one of the contributory factors. However, more studies are required to confirm this. Education of patients with long-term ileostomy cases is essential for early detection of complications and their effective management.

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