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Rectal Carcinoma: A late Complication of Ureterosigmoidostomy Case Report

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ABSTRACT

Ureterosigmoidostomy has been widely used as a surgical urinary diversion technique. However, it can be the cause of many infectious, metabolic, or tumoral complications. We report a case of a patient who developed a rectosigmoid carcinoma at the site of a previous ureterosigmoidostomy after a long latent period.

Introduction

Ureterosigmoidostomy is a surgical procedure for total diversion of the urinary stream away from the bladder and the lower urinary tract into the sigmoid colon. The rectum serves as a reservoir for urine storage and excretion, and the anal sphincter provides fecal and urinary continence (1). It was originally indicated for several malignant and benign diseases such as bladder cancer and the exstrophy- epispadias complex (2). The first case of ureterosigmoidostomy was reported by Simon in 1852 (3). It became the most widely used urinary diversion technique in the mid-1900s (4), but this technique is rarely used today (5).

Case report

Mr. CY is a 38-year-old patient with a history of the exstrophy-epispadias complex for which an ureterosigmoidostomy was established at the young age of 6 months. The patient is currently consulting for intermittent rectal bleeding evolving for one month with deterioration of the general condition. A rectosigmoidoscopy was performed objectifying a non-stenosing tumor in the upper rectum extending to the sigmoid (Figure 1). The biopsies concluded with a mucinous colloid carcinoma. The CT scan showed a tumor of the rectosigmoid junction invading the left ureter with lymph node metastases classified at least T4N1M1 (Figure 2). The patient subsequently underwent an anterior resection surgery with protective ileostomy and a change in the type of the urinary diversion to an ureterostomy.

Figure 1 . Endoscopic image of the rectal tumor (red arrows).

Discussion

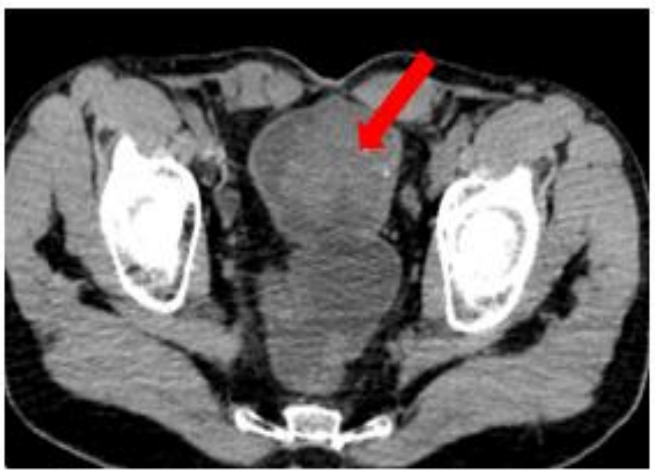

Figure 2 . Abdominal CT showing wall thickening of the upper rectum.

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Ureterosigmoidostomy remains a less mutilating urinary diversion method that provides voluntary urine control in approximately 92.3% of cases, compared to other similar surgical procedures (2). However, this technique can cause serious complications in the medium and long term such as pyelonephritis, electrolyte disturbances, urolithiasis as well as the appearance of colonic neoplasia at the anastomotic site (6).

The causal association between the presence of an ureterosigmoidostomy and the occurrence of colorectal cancer is well established (7). The first case was described by Hammer in 1929 (8). Its incidence could reach 2%-15% in some cases (9). This risk of developing colorectal cancer becomes multiplied by 7000 if the diversion was made before the age of 25 years (7). The median age at diagnosis is 33 years old (10). It should be noted that there is a latent period of around 6 years to 50 years with an average of 21 years before the occurrence of cancer and the diagnosis of the disease may therefore be difficult (10). In our case, the patient developed colorectal cancer at the age of 38, approximately 37 years after undergoing the ureterosigmoidostomy.

The pathogenesis of urocolonic cancer remains controversial (9). Many risk factors have been described such as the presence of carcinogenic substances in the urine, mechanical damage by feces, the prolonged contact of urine with the colonic mucosa, and the modification of colonic mucus excretion (11).

Among the theories reported in the literature, Kälble et *al*. (12) suggested the role of urinary enzymes in the activation of carcinogenic nitrosamines present at their highest concentrations in the fecal flora at the anastomotic site (12). Another study suggested that the suture is responsible for a continuous irritation of the colonic mucosa with local inflammatory response and production of free oxygen radicals causing extensive damage to cellular DNA (13).

Figure 3 .A macroscopic image of the rectal carcinoma removed from the ureteric implantation site at laparotomy.

Given the substantial risk of developing colorectal carcinoma, all patients who have undergone a urinary diversion involving the use of the intestinal tract should be monitored closely during their lifetime (14). An annual colonoscopy is recommended 10 years after undergoing an ureterosigmoidostomy (15). Regular monitoring starting 3 years after surgery is recommended for early detection of any malignant complication (16). Regular monitoring by hemoccult and annual colonoscopy started as soon as possible after surgery is also suggested (17). A change in the type of the urinary diversion is also recommended after detection of polyps, dysplasia, or tumor at the ureteric implant (17, 18), and ureterosigmoidostomy should be avoided as much as possible (14). In our case, the patient did not benefit from urological or colonic follow-up since the ureterosigmoidostomy was performed, he underwent an anterior resection

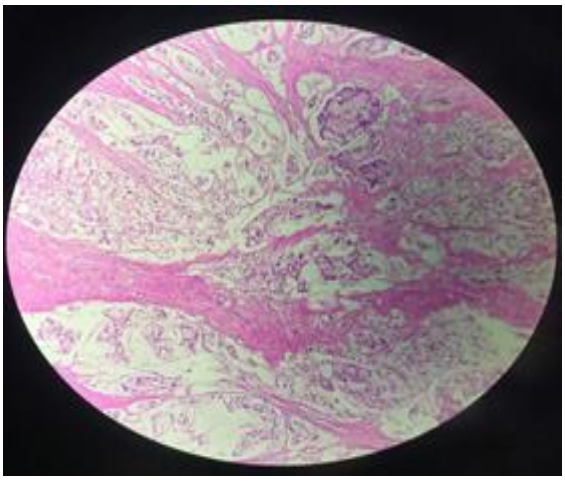

Figure 4 . Histopathological appearance of tumoral material.

Conclusion

Ureterosigmoidostomy increases the risk of developing colorectal carcinoma at the anastomotic site. Therefore, rigorous and regular endoscopic monitoring is highly recommended to prevent malignant complications.

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