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A case of tubular adenoma developing after bladder augmentation: Case report and literature review



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ABSTRACT

INTRODUCTION: We encountered a rare case of tubular adenoma developing after bladder augmentation. We here report our case as well as summarize reports in the literature on adenomas developing after bladder augmentation.

PRESENTATION OF CASE: A 23-year-old man came to our hospital for routine surveillance cystoscopy. He was born with a lipomyelomeningocele and neurogenic bladder with low bladder compliance, and hence his bladder was routinely emptied by clean intermittent catheterization. He was also treated with anticholinergic agents. However, because the patient's neurogenic bladder was unstable, he underwent sigmoidocolocystoplasty when he was 8-years old. After the bladder augmentation, he was examined annually by surveillance cystoscopy.

On cystoscopy, a 5-mm pedunculated polyp was found on the front side of the sigmoid colon cap. Therefore, we performed snare polypectomy together with electrocoagulation under cystoscopy. The patient's final diagnosis was tubular adenoma (mild atypia) with no malignancy, as assessed by histopathology. There has been no evidence of recurrence after the polypectomy on routine surveillance cystoscopy.

DISCUSSION: To the best of our knowledge, there have been 11 cases of adenoma occurring after bladder augmentation reported in the literature, including our present case. There are several carcinogenic pathways associated with colorectal oncogenesis. Adenomas that are larger than 1.0 cm in diameter with a marked villous component have a high risk of oncogenesis.

CONCLUSION: We believe that the early detection of carcinoma or adenoma and their treatment at an early stage is crucial. Therefore, we recommend routine surveillance cystoscopy for patients after bladder augmentation.

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1. Introduction

This work has been reported in line with the CARE criteria [1]. Enterocystoplasty (ECP) using the colon, ileum, or stomach has become an accepted reconstructive option for patients with intractable incontinence and poor bladder compliance owing to various neurogenic and non-neurogenic disorders [2].

However, recently, there have been an increasing number of reports of benign and malignant tumors developing in the neobladder of post-ECP patients, particularly around the line of anastomosis between the colon cap and the native bladder remnant, which are detected on long-term follow-up [2]. We previously reported that 55 cases of malignancy occurring after ECP have been published

in the literature [3]. Although *N*-nitrosamines were reported to be associated with carcinogenesis following bladder augmentation, the mechanisms involved remained unclear [4]. There are several carcinogenic pathways associated with colorectal oncogenesis [5]. Adenomas that are greater than 1.0 cm in diameter, and with a marked villous component have a high risk of developing into cancer [5]. Therefore, the early detection of adenomas is important as it will enable early treatment, and therefore the prevention of malignant changes.

We routinely perform annual surveillance cystoscopy in patients who have undergone bladder augmentation in our departments. One such patient was found to have developed tubular adenoma at the patch site of the sigmoid colon cap. The incidence of adenoma after ECP is rare. To the best of our knowledge, there are 11 cases of adenoma reported in the literature, including our present case [4,6–14]. Here we report our rare case and review the literature on cases of benign tumors that occurred after ECP.

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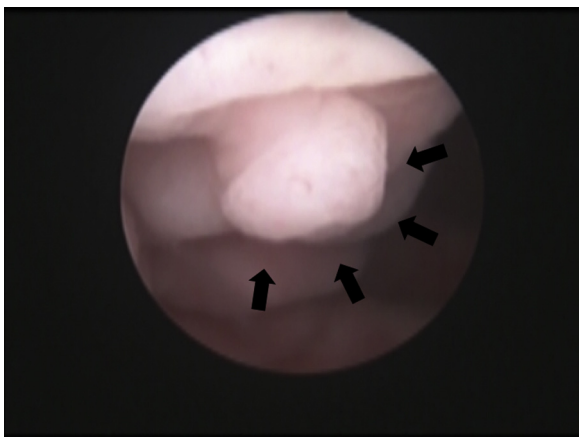


Fig. 1. Cystoscopic findings before transurethral resection. An image of the patient's bladder. A 5-mm pedunculated polyp was found on the front side of the colon cap. There were no abnormalities in other areas of the bladder, including in the anastomosis between the colon cap and the native bladder (arrows).



Fig. 3. Cystoscopic findings at the site of transurethral resection. Image of the site of resection after snare polypectomy together with electrocoagulation. No perforations or bleeding was detected.



Fig. 2. Histopathological analysis of the tumor on biopsy. Hematoxylin and eosin staining of the tumor specimen ($\times 40$). The tumor was contained within the glandular component. No malignant changes were detected. The diagnosis was tubular adenoma.

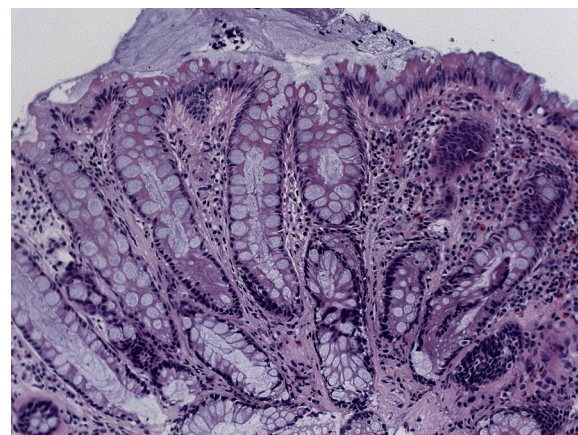


Fig. 4. Histopathological analysis of the tumor on transurethral resection. A high magnification image of the tumor ($\times 400$) showing the presence of glandular epithelium. No malignant changes were detected.

2. Case report

A 23-year-old man came to our hospital for routine surveillance cystoscopy. He had no symptoms, such as upper tract infection, flank pain, and hematuria. He was born with a lipomyelomeningocele and neurogenic bladder with low bladder compliance. He had been undergoing clean intermittent catheterization and taking anti-cholinergic agents since he was 3-years old. However, his neurogenic bladder was unstable, and his bladder capacity decreased and his bladder compliance worsened. He hence underwent sigmoidocolocystoplasty when he was 8-years old. His postoperative course was stable, and his bladder capacity increased and his urinary continence improved. The patient has been undergoing annual routine surveillance cystoscopy from 1 year after the bladder augmentation. The patient has no family history of bladder and colorectal disease.

There were and no abnormalities on laboratory data before cystoscopy. Tumor markers, such as α -fetoprotein, carcinoembryonic antigen, and carbohydrate antigen 19–9 were not increased.

Upon cystoscopy, there were no abnormalities around the anastomosis between the native bladder and sigmoid colon. However, a 5-mm pedunculated polyp was found on the front side of the sigmoid colon cap, and hence we performed a biopsy (Fig. 1). On histopathology, the polyp was identified as tubular adenoma (Fig. 2). Therefore, we performed snare polypectomy together with

electrocoagulation under cystoscopy (Fig. 3). The patient's post-operative course was uneventful and his bladder function was maintained. His bladder was drained for 24 h. His final diagnosis was tubular adenoma (mild atypia) and no malignancy was found on histopathology (Fig. 4a,b). We performed routine annual surveillance cystoscopy from 1 year after the polypectomy, because we believe that the early diagnosis of adenoma will decrease the risk of malignancy development. During the subsequent 5 years, there has been no evidence of recurrence.

3. Discussion

Recent reports have suggested an increased incidence of malignancy after ECP [2,15–18]. However, the incidence of adenoma is rare. To the best of our knowledge, there have been 11 cases of adenoma occurring after bladder augmentation reported in the literature, including our present case [4,6–14] (Table 1). The sex distribution of the patients was 7 men (64%) and 4 women (36%). The age at ECP ranged from 5 to 50 years (mean: 27.1 years). The original underlying disease was urinary tuberculosis in 5 cases (45%), neurogenic bladder in 3 cases (27%), rhabdomyosarcoma in 1 case (9%), post bladder surgery complications in 1 case (9%), and detrusor instability in 1 case (9%). Symptoms included hematuria in 6 (55%), lumbar pain and oliguria in 1 (9%), frequent urination in 1 (9%), recurrent pyelonephritis in 1 (9%), and no symptoms (detected

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