

## Tumor growth in intestinal neobladder

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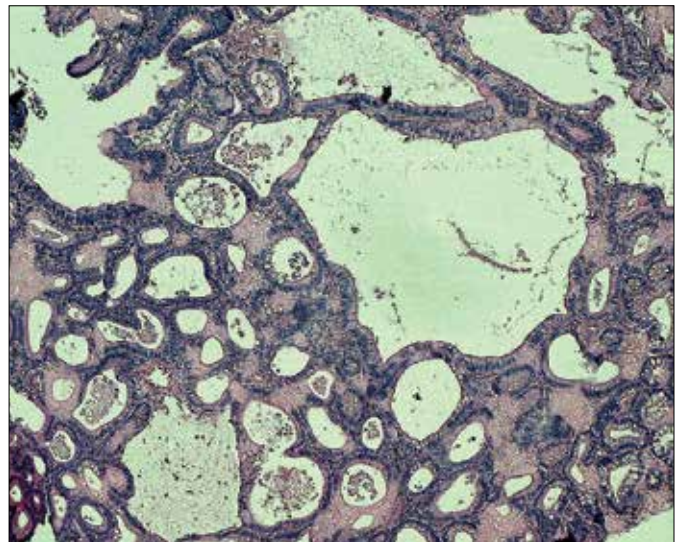
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The case of a 73 years old man with tumor in intestinal neobladder was presented. Tumor was resected using standard TUR technique. Tumor proved to be benign, follow–up revealed no recurrences. The schedule of lifelong follow–up was proposed.

**Key Words:** urinary diversion ◊ orthotopic neobladder ◊ tumor growth

### CASE REPORT

The case history of a 73 years old man with no family history of colorectal cancer started in 1999 when he was operated because of pT3N<sub>x</sub>M<sub>0</sub> adenocarcinoma of the bladder. An orthotopic Alcini neobladder was created using an ileocaecal segment with multiple transverse taeniomyotomies. The postoperative course was uneventful. The patient did not report for a follow up. Ten years after the cystectomy he was referred to a urologist because of unspecified pain in the abdomen and was admitted to the hospital. Since the patient had a history of bladder cancer and no history of abdominal pain, the differential diagnosis was primarily focused on the possible recurrence of the bladder cancer. No signs of urinary tract infection or recurrence of the cancer was seen. Physical examination revealed no abnormalities. Apart from slightly elevated creatinine, all basic biochemical parameters were within normal ranges. An ultrasound scan confirmed only the presence of a single simple left renal cyst. During the cystoscopy, a 1.5 cm tumor at the dome of the neobladder was found and resected using standard Transurethral Resection (TUR) technique (Figure 1). As for the therapy, a number of different endoscopic approaches were used includ-



**Figure 1.** Tumor at the dome of the neobladder.

ing endoscopic cut biopsy in the colonic neobladder and TUR in the sigmoid neobladder, as was done in our case [2].

Histopathology report proved the tumor to be a benign adenoma tubulare without signs of invasion of the tumor in the neobladder wall (Figure 2).

A detailed follow-up was introduced. Biochemical tests revealed the level of blood electrolytes, pH, Vit B12 and folic acid were within normal ranges. Abdomen and pelvic CT-scan revealed no signs of recurrence. Colonoscopy detected a 2 mm benign sigmoid polyp. Cystoscopies done in 2011 and 2013 showed a scar at the resection site without local recurrence of the tumor.

## DISCUSSION

Even though bladder cancer is not a rare disease, secondary tumor growths in various forms of urinary diversion are hardly ever seen. According to published literature, the mean latency period of secondary tumors is 4–34 yr [1, 2]. In our case, a 10 years latency time was seen. There are various proposed causes of secondary malignancy. Several authors suggested the importance of nitrosamines, especially in cases of ureterosigmoidostomy where urine and feces are mixed [3]. Other authors imply that carcinogenesis is due to chronic inflammation, prostaglandins and other eicosanoids [4]. The key role of ornithine decarboxylase was also suggested by other authors to be the enzyme of primary importance in tumor growth [5] as it leads to cell proliferation.

It must be stated that all forms of urinary diversion carry the risk of tumor formation, although none of the presented above theories fully explain their real cause.

According to literature, the risk of secondary neoplasm differs in various forms of urinary diversion. The tumor risk in ureterosigmoidostomy and cystoplasty is considerably higher than in other forms of diversion. The risk in colonic urinary diversion is higher than in ileal neobladder, whereas ileal conduit carries the smallest risk. Generally speaking, the risk in colonic urinary diversion without ureterosigmoidostomy and cystoplasty is significantly higher than in ileal diversion [1]. Since in our case, the ileocaecal segment was used for the creation of the neobladder, the risk of secondary neoplasm was higher. Data supporting this statement is provided by the same authors who claim that the tumor risk in ileocolonic neobladders increase 25–29 fold if compared with ileal neobladders.

There is a striking difference in the location of the tumors in cases of urinary diversion without urine and feces mixture. In the case of using an ileal segment, tumors occurred at urointestinal border, while when ileo-colonic neobladders were formed,



Figure 2. Adenoma tubulare – pathology figure of tumor.

tumors developed distant to the urointestinal anastomosis [1]. Our case provides more evidence supporting this theory, because the tumor presented in this case study was located in the neobladder dome far from ureterointestinal anastomosis. This could serve as an example of generally increased tumor risk in colonic neobladder as compared to ileal neobladder.

Since there is a risk of malignant transformation in every form of urinary diversion, close lifelong follow up is recommended. Various authors advocate regular endoscopic screening beginning at the 3rd to the 10th year [1, 2, 6] postoperatively. In the case of new onset hydronephrosis, hematuria, or suspicious findings on Intravenous Urography (IVU), Transabdominal Ultrasound (TAUS), Computed Tomography (CT) or Magnetic Resonance Imaging (MRI), immediate endoscopy is mandatory [2]. Due to the fact that in our case the ileocaecal segment was used for the creation of the neobladder, it was suggested to implement Polish Society of Gastroenterology guidelines for colonoscopy surveillance following polypectomy [7]. According to these guidelines, in the case of the removal of a 1.5 cm polyp, cystoscopy should be done after 3 and then after 5 years if the results of the first test were negative.

## CONCLUSIONS

1. The risk of tumor growth in colonic urinary diversion is higher than in ileal.
2. Lifelong regular follow-up is mandatory after all forms of urinary diversion.

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