

Carcinoma in the inactive bladder – the dilemma of the forgotten organ

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KEY WORDS

bladder neoplasm ► transitional cell carcinoma
► etiology

ABSTRACT

Etiologic factors affecting bladder tumor have been well confirmed and it is widely recognized that carcinogenic substances in urine may play an important role in a pathogenesis. Carcinoma developing in a defunctionalized bladder, although uncommon, does occur. We report a case of a transitional cell carcinoma (TCC) found in a remaining bladder of a male patient and a review of the most relevant literature.

INTRODUCTION

Most common complications caused by a defunctionalized bladder are: pyocystitis, hemorrhage, pain, spasm, and bleeding [1]. However there is a remarkably low incidence of a malignancy in the leftover bladder. We report here a case of a carcinoma found in a defunctionalized bladder accompanied by selected literature.

CASE REPORT

A 43-year-old non-smoker male was admitted to our department with a suspicion of a bladder tumor. The lesion was accidentally found in a nuclear magnetic resonance test performed due to a pain of the spinal column (Fig. 1). One month before admission to the hospital the patient experienced an episode of

pyocystitis that was accompanied by high fever. In childhood he underwent a bilateral ureterocutaneostomy due to a vesicoureteral reflux and was diagnosed with kidney failure. At the age of 28 he underwent a left nephrectomy due to a pyelonephritis and dialysis was started. Three years later, the afunctional right kidney was removed. Cystoscopy performed before that operation revealed a decreased volume of the bladder, while no neoplastic changes were yet found. During the present hospitalization of the patient, a transurethral resection of a bladder (TURB) was performed (Fig. 2). Numerous papillary tumors (cTam) were radically resected. The maximal diameter of a lesion was 3 cm. Microbiological examination of evacuated pus revealed the presence of *E.coli* with medium sensitivity to antibiotics. Pathological report revealed grade III transitional cell carcinoma (TCC; pTaNxMx). Although the patient was offered a cystectomy, he refused the procedure due to a risk of a possible erectile dysfunction. Therefore he was planned for a regular cystoscopic follow-up. Check-up performed one month after TURB procedure did not reveal any pathological lesion. Further cystoscopies have been scheduled for the patient classified to a high-risk group (based on guidelines of the European Board of Urology). BCG therapy has not been considered due to a recurrent pyocystitis.

DISCUSSION

Aaronson et al. reported a case of squamous cell carcinoma (SqCC) in a bladder that was diverted due to persistent infections and incontinence [2]. Moloney et al. reported three cases of cancer in defunctionalized bladder: two male paraplegics were diagnosed with SqCC and a female with TCC [3]. The authors claim that the variable duration of time from diversion to development of a tumor suggests that multiple factors apart from infections may be important in the pathogenesis of carcinoma. Fazili et al. postulate

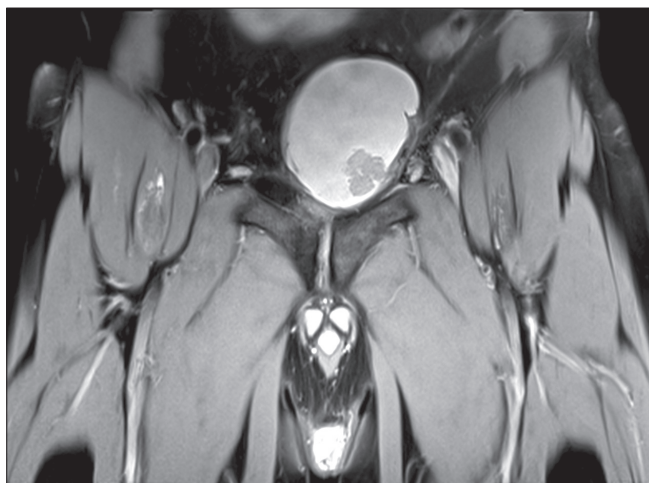


Fig. 1. MRI – pathological lesion in the bladder.



Fig. 2. TURB – the tumor before resection.

that patients who require supravescical urinary diversion for benign bladder pathology should be offered primary cystectomy at the same time as the diversion unless there are comorbid factors that would significantly increase the risks of surgery [4]. A rare case of a carcinoma in a remaining bladder diverted 25 years ago was described by Asano et al. and is worth mentioning here since it occurred without the typical pyocystitis classified as a key feature suggesting the presence of a tumor [5]. Additionally, an extremely rare histopathological finding, an adenocarcinoma, in a leftover bladder was reported by Djavan et al. [6]. A retrospective study made by Eigner et al. in which thirty adults after urinary diversion were observed (mean time 3.5 years, max. 20 years) did not reveal any case of malignancy. Still four cystectomies were performed although for other non-malignant reasons [7]. Similarly, no incidence of carcinoma was reported in a long-term follow-up of ninety-three patients after the supravescical diversion (mean time 5 years) conducted by Singh et al. [8]. The incidence of bladder problems in over half of these patients and upper urinary tract changes in over a third of them suggests however that indefinite follow-up is mandatory. Polsky et al. reviewed the relationships between infection, inflammation, squamous metaplasia, and SqCC. They postulated that the same carcinogenic factors that give rise to TCC may also be responsible for SqCC on the condition that the epithelium had previously undergone squamous metaplasia [9]. Some authors remind that sexual function is better preserved with the bladder left *in situ* so this aspect should be taken into consideration before a decision of a cystectomy is made [1, 10].

CONCLUSION

Although cancer in the inactive bladder is a rare condition, it is advisable to follow-up these patients with a lifetime cystoscopy. The presence of recurrent intractable pyocystitis is a key feature to suggest unexpected cancer and this must be ruled out by all appropriate means, including extensive bladder biopsies. The decision about leaving the urinary bladder must be considered individually, based on a patient's preferences, the will of maintaining sexual function and potential risk of developing neoplasm.

REFERENCES

1. von Rundstedt FC, Lazica D, Brandt AS, et al: *Long term follow-up of the defunctionalized bladder after urinary diversion*. Urologe A 2010; 49: 69-74.
2. Aaronson IA: *Carcinoma in the bladder left behind*. Br J Urol 1978; 50: 139.

3. Moloney PJ, Fenster HN, McLoughlin MC: *Carcinoma in the defunctionalized urinary tract*. J Urol 1981; 126: 260-261.
4. Fazili T, Bhat TR, Masood S, et al: *Fate of the leftover bladder after supravescical urinary diversion for benign disease*. J Urol 2006; 176: 620-621.
5. Asano S, Matsuda M, Takemoto M, et al: *Transitional cell carcinoma arising from bladder left behind*. Eur Urol 1979; 5: 223-224.
6. Djavan B, Litwiller SE, Milchgrub S, Roehrborn CG: *Mucinous adenocarcinoma in defunctionalized bladders*. Urology 1995; 46: 107-110.
7. Eigner EB, Freiha FS: *The fate of the remaining bladder following supravescical diversion*. J Urol 1990; 144: 31-33.
8. Singh G, Wilkinson JM, Thomas DG: *Supravescical diversion for incontinence: a long-term follow-up*. Br J Urol 199; 79: 348-353.
9. Polsky MS, Weber CH, Williams JE, et al: *Chronically infected and post-diversionary bladders: cytologic and histopathologic study*. Urology 1976; 7: 531-535.
10. Adeyoju AB, Lynch TH, Thornhill JA: *The defunctionalized bladder*. Int Urogynecol J Pelvic Floor Dysfunct 1998; 9: 48-51.

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