Invasive adenocarcinoma of the urinary bladder

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Abstract

Introduction and objective. This paper is a presentation of urinary bladder adenocarcinoma outcome in patients classified according to tumor location (urachal or primary adenocarcinoma) and histologic variants found on the pathologic specimen.
Materials and methods. The study comprises a number of 16 patients with a mean age of 59.3 years. There were 11 cases of primary bladder adenocarcinoma (5 cases of pure adenocarcinoma, 3 cases of mixed histology of adenocarcinoma and urothelial carcinoma and 3 cases of mixed histology of adenocarcinoma, urothelial and squamous carcinoma) and 5 cases of urachal adenocarcinoma. Patients with primary bladder adenocarcinoma undergone radical cystectomy of which seven were salvage cystectomies (2 in the pure adenocarcinoma subgroup and 5 in the mixed histology subgroup). In the urachal group, 3 patients undergone partial cystectomy, while 2 patients undergone salvage cystectomy.
Results. Pure adenocarcinoma subgroup reported one death event, 4 patients surviving at 10, 12, 72 and 144 months respectively. Mixed adenocarcinoma treated by partial cystectomy (5 cases) reported 4 death events at 1, 4, 5 and 12 months respectively, one patient being alive at 9 months after diagnosis. In the urachal adenocarcinoma group (5 cases) 3 patients are alive at 4, 6 and 80 months with one death case registered at 32 months postoperatively. One case was lost at follow-up.
Conclusions. Advanced local stage at diagnosis (5 out of 6 patients undergone palliative cystectomy) and rapid progression in cases with mixed adenocarcinoma was observed. Moreover, adjuvant treatment had little influence on the evolution of disease.

Keywords: urinary bladder adenocarcinoma, histologic variant, treatment, results

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Introduction

Urinary bladder adenocarcinomas are ranked third place in the hierarchy of urinary bladder tumors, comprising for 0.5-2% [2,3] of all urinary bladder tumors. It is frequently diagnosed in patients with bladder extrophy, the risk of developing the disease being of 4% [4]. Moreover, urinary bladder adenocarcinoma can develop in association with schistostomiasis, endometriosis, urinary bladder augmentation or any other factors that produce an irritative effect on the bladder mucosa [5,6]. Accordingly to the location of the disease, urinary bladder adenocarcinoma can be divided into primary adenocarcinoma, urachal adenocarcinoma and secondary adenocarcinoma (metastatic), the last group representing the extension of other tumors such as colon, prostate or ovary tumors to the urinary bladder [7].

Materials and methods

This study proposes to analyse 16 cases of urinary bladder adenocarcinoma divided into primary and urachal adenocarcinoma. The division of the cases was performed in order to closely observe survival differences between histologic variants of adenocarcinoma in comparison with urachal adenocarcinoma.

Tabel 1

Bladder ADK	Nr	Sex	Age	T	N	M	G	Urinary diversion	Alive	Death event
Primary	5	1F	60	3p - T3a 2p - T4a	1 - N1 2 - N2	x	3 - G2 2 - G3	2 – Cistoplasty 3 – cutaneous ureterostomy	2 (6 and 12 years)	2-11 months
ADK + TCC	3	2F	60	1p- T3 1p - T4 1p - T2	1 - N2 2 - Nx	x	3 - G3	1 - Bricker 2 - cutaneous ureterostomy	1 (9 months)	2 – 4 and 5 months
ADK + TCC + SCC	3	B	67	3p - T3	1 - N2 2 - Nx		3 - G3	3 - USC		12 and 6 months
Urachal	5	1F	50,8		2N3			2CR, 3 partial cystectomies	3 patients (80, 6 and 4 months postoperative)	32 months

Mean age was lower in the urachal adenocarcinoma group (50.8 years) compared with 60 and 67 years respectively. There are no significant differences in what concerns the sex or the TNM-G staging.

Results

Relative good survival periods were recorded in the pure adenocarcinoma subgroup (2 out of 4 patients are alive at 6 and 12 months).

One postoperative death was recorded in a patient with associated comorbidities – leukemia with splenomegaly (35 cm) – presenting with persistent hematuria that could not be managed endoscopicaly and necessitated radical cystectomy for bleeding control. Postoperatively, the patient developed cardiovascular failure unresponsive to treatment.

Moreover, a case of pulmonary embolism, hematuria and hipogastric urinary fistula after transvesical approach for invasive bladder tumor performed in another medical center was reffered to our department for definitive treatment. Anticoagulant therapy is initiated and after hemodynamic stabilization, the patient undergoes salvage cystectomy with cutaneous ureterostomy. The patient dies 12 months postoperatively by lung metastases.

Death by local reccurence was reported in one case, 10 months postoperatively in a 68 years old patient.

A number of aspects can be mentioned concerning the survival in the mixed adenocarcinoma subgroup (6 cases) as follows.

In the adenocarcinoma-urothelial carcinoma subgroup, one patient is alive at 9 months postoperatively (TUR-BT specimen with adenocarcinoma diagnosis and T0 staging on the cystectomy specimen). The remaining patients died at 4 and 5 months respectively.

In the adenocarcinoma-urothelial-squamous carcinoma subgroup the best survival results (20 months) were recorded in a patient with R2 disease (remnant tumoral tissue along the left internal iliac vessels). Three courses of adjuvant chemotherapy were given. At 3 months postoperatively, the patient develops metastases in the corpora cavernosa, radical penectomy being performed followed by external beam radiation. Temporary regression of the pelvic adenopathies is achieved, but they relapse at 18 months postopera-

tively in association with liver metastases. Death was reported at 20 months postoperatively.

A resembling case, with R2 disease (remnant tumoral tissue along the right iliac vein) and adjuvant chemoradiation had a survival period of 12 months, generalized metastatic disease being the cause of death.

Death due to sepsis was recorded 1 month postoperatively in a patient refusing medical care.

The patients diagnosed with urachal adenocarcinoma benefited from partial cystectomy with omphalectomy and pelvic lymph node dissection (3 cases) or palliative cystectomy (2 cases). Total cystectomy was performed if tumor extension did not allow bladder preservation – 1 case. Relapse after partial cystectomy was seen in a 29 years old patient surgically treated 3 years earlier in another medical center. At presentation in our center the imaging showed pelvic adenopathies of 10/8 cm, a 7 cm right inguinal adenopathy and bladder mass.

During follow up one patient was lost, one death event recorded at 32 months postoperative and 3 patients are alive at 80 months, 6 months and 4 months.

Discussions

Primary adenocarcinoma of the urinary bladder

Frequently patients present with hematuria and irritative bladder syndrome, sometimes associated with mucus in the urine. At cystoscopy, the tumors appear to be more often sessile than papillary. The tumors can be located on the lateral bladder walls, trigone, dome or anterior wall. Tumor multiplicity can be found in 50% of the cases. [19]. It usually associates glandular cystitis rather than carcinoma in situ. Adenocarcinoma is an invasive disease in most of the cases, there is only one study which describes 2 cases of Ta and T1 stage on a cohort of 27 patients. [11]. Prognosis is poor with a 5 years survival of 0 – 31%.

Urachal tumors

Urachal tumors can show histologies like adenocarcinoma, urothelial carcinoma, squamous cell carcinoma or sarcoma. Urachal adenocarcinomas represent about 1/3 of the urinary bladder adenocarcinomas (0.7% of all bladder tumors). Frequently, the patient presents with hematuria. The tumors have a fine demarcation line with the bladder epithelium, developing within the bladder wall. (*Mostofi,*1955). They may present with a ombilical hemoragic/mucoid leakage or even a mucocele mimicking a tumoral mass. Imaging shows calcifications within the urachal tumor. For practical reasons, all adenocarcinomas that are located on the bladder dome are to be considered urachal tumors and treated following the adequate treatment pattern [13,14]. Proposed staging systems are gathered down below:

Table 2. Proposed staging systems for bladder adenocarcinoma

Sheldon, 1994 [12]	*Nakanashi, 1996 [16]*	Survival at 5 years [16]
I. No urachal mucosa infiltration		
II. Infiltration limited to the uracha		
III.A. Local extension into the urinary bladder	Local extension into the urinary bladder, without involvement of the abdominal wall or other organs	58% (30 patients)
III.B. Local extension into the abdominal wall		
III.C. Local extension into the peritoneum	B. Extension in the abdominal wall, peritoneum or to organs other than the bladder	42% (6 patients)
III.D. Local extension to organs other than the bladder		
IV.A. Regional lymph node metastasis	C. Regional lymph node metastasis or distant metastasis	0% (5 patients)
IV.B. Distant metastasis		

While the standard treatment for primary adenocarcinoma of the bladder is radical cystectomy with pelvic lymph node dissection, invasive urachal adenocarcinoma surgical treatment involves excision of the belly, urachal ligaments and upper part of the bladder [12,15]. Generally, the prognosis is poor, with a 5 year survival rate of 11 to 55. Regarding our study, although it comprises a small cohort of patients, results show a better survival rate in patients with primary adenocarcinoma (2 patients are alive at 6 and 12 years respectively), followed by those found in patients with urachal adenocarcinoma.

The prognosis is worsen when primary bladder cancers associate mixed histopathology (adenocarcinoma

with urothelial or squamous differentiation). Such cases tend to have a postoperative survival considerably shortened – 4 months and 5 months respectively in the first group and 20 months, 12 months and 12 months respectively in the second group. Adjuvant treatment does not have a significant impact on survival.

Table 3. Survival in patients with urachal and non-urachal adenocarcinoma

Author	Number of patients	Survival
Adenocarcinom non-uracal		
Anderstom (1982) 6	64	5 years - 11%
El Mekresh (1998) 17	185	5 years - 55%
Grignon (1991) 11	48	5 years - 31% , 10 years - 28%
Kramer (1979) 18	15	5 years - 17%
Wilson (1991) 11	10	3 years - 48%
Adenocarcinom de uracă		
Anderstrom (1982) 6	29	5 years - 27%
Grignon (1991) 11	24	5 years - 61%, 10 years - 46%
Henly (1993) 14	34	5 years - 43%
Nakyearsshi (1996) 16	41	5 years - 50%
Siefker-Raddtke (2003) 15	42	5 years - 40%
Wilson (1991) 11	6	3 years - 31%

Conclusions

Indeed the number of patients with pure primary bladder adenocarcinomas is small, the results are encouraging with 6 and 12 years survival in two cases. It is to be underlined the fact that urachal adenocarcinomas included in the study were locally advanced, in two cases palliative cystectomy being performed. Also mixed histopatology seems to worsen the prognosis. Nonetheless, adjuvant treatment has an insignificant impact on survival.

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