

Rare but Aggressive: Diagnostic challenges and emerging therapeutic approaches of primary bladder adenocarcinoma

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Abstract

Primary bladder adenocarcinoma is a rare and aggressive malignancy representing 0.5–2% of all bladder cancers and is associated with a poor prognosis. This study aimed to describe the epidemiological, clinical, pathological, therapeutic, and prognostic characteristics of primary bladder adenocarcinoma.

We conducted a retrospective analysis of four patients diagnosed with primary bladder adenocarcinoma between January 2014 and December 2023 at the Medical Oncology Department of Hassan II University Hospital in Fez, Morocco. Clinical presentation, pathological findings, treatments, and outcomes were evaluated.

The mean age was 56 years (range: 45–69 years), with a predominance of males (75%). Macroscopic hematuria was the main presenting symptom in all patients. Three patients were metastatic at diagnosis and received first-line platinum-based chemotherapy combined with gemcitabine. One patient with localized disease received neoadjuvant chemotherapy without response and was subsequently lost to follow-up. No patients underwent surgery or radiotherapy. Disease progression occurred in two patients after a mean interval of seven months, and second-line chemotherapy with paclitaxel was administered. The median progression-free survival was 5.25 months, and the median overall survival was 6.25 months.

Primary bladder adenocarcinoma remains a rare and aggressive tumor that is often diagnosed at an advanced stage. Therapeutic options are limited, and outcomes remain poor. Further studies are needed to improve management and prognosis.

Keywords: Primary bladder adenocarcinoma; Bladder cancer; Chemotherapy; Rare tumor; Prognosis; Retrospective study

1. Introduction

Primary adenocarcinoma of the urinary bladder is an exceptional tumor that represents 0.5 to 2% of all bladder malignancies. The aim of our study is to analyze the epidemiological, clinical, pathological, treatment and prognosis of primary adenocarcinoma of the bladder

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2. Material and methods

This is a retrospective study of four cases of primary adenocarcinoma of the urinary bladder collected over a 10-year period (between January 2014 and December 2023) at the Department of Medical Oncology, Hassan II University Hospital in Fez, Morocco. Our analysis was based on the evaluation of the epidemiological, clinical, pathological, therapeutic, and prognostic characteristics of bladder adenocarcinoma.

3. Results

The mean age of our patients was 56 ± 9.86 years (range: 45–69 years). Males represented 75% of the cases (three patients), with a sex ratio of 3:1 (three men for one woman). Macroscopic hematuria was the main presenting symptom in all patients.

Three patients were metastatic at the time of diagnosis. Two of them received palliative chemotherapy with cisplatin–gemcitabine as the first-line regimen, while one patient received carboplatin–gemcitabine, with a mean number of six cycles. The non-metastatic patient received neoadjuvant chemotherapy with cisplatin–gemcitabine but showed no tumor response and was subsequently lost to follow-up. None of the patients underwent surgical treatment or radiochemotherapy.

During the follow-up, two patients have progressed after a mean delay of 7 months. The two received a second line chemotherapy with paclitaxel. The median overall survival was 6,25 months and median PFS was 5,25 months.

4. Discussion

Primary bladder adenocarcinoma is the third most common epithelial tumor, accounting for 0.5–2% of all bladder tumors. It most commonly occurs in men with a sex ratio of 3 men to a woman, between 40 and 60 years of age [1, 2].

Owing to the rarity of the disease, the pathogenesis and natural history of primary bladder adenocarcinoma have not been well characterized [3]. Several risk factors have been described, most notably, almost 90% of bladder tumors in patients with exstrophy of bladder are adenocarcinoma and up to 10% of all bladder cancers are adenocarcinomas in areas where schistosomiasis is endemic [3, 4]. Other possible risk factors include chronic irritation, obstruction, cystocele and endometriosis [4]. Cystitis glandularis and intestinal metaplasia are often found adjacent to bladder adenocarcinoma, but recent studies have showed that cystitis glandularis and intestinal metaplasia are not associated with an increased risk for adenocarcinoma [4].

The symptoms of adenocarcinoma do not differ from other kinds of bladder tumor. In our series, hematuria was the most frequent presenting symptom.

Abdominopelvic CT is essential to assess the locoregional tumor extension and determine the metastatic extension [5]. In practice, when the diagnosis of adenocarcinoma is made, the clinical problem is to eliminate a secondary tumor, metastasis or invasion of the bladder wall by a neighboring tumor (colon, prostate, endometrium or ovary) [4].

Microscopically, bladder adenocarcinoma is subdivided into enteric type, mucinous type, mixed type and not otherwise specified (NOS) adenocarcinoma. Additional morphological patterns have been described, such as hepatoid growth. Formerly, clear cell adenocarcinoma has been included as a variant of bladder adenocarcinoma, but is now considered as a separate disease entity within tumours of Mullerian type in the latest World Health Organisation (WHO) classification [6].

Therapeutically there is no standard treatment; these tumors are often treated by extrapolation to urothelial carcinoma and adenocarcinomas from other sites [7]. In the absence of an extra extension bladder treatment is based on excision surgery (total cystoprostatectomy in men or anterior pelvicotomy in women), combined with extensive dissection [5].

The role of chemotherapy and radiotherapy in unresectable or metastatic disease is unclear, and no randomized trials have been completed [7]. In a prospective study of ifosfamide, paclitaxel and cisplatin in 20 patients with non-urothelial bladder cancer (11 of whom had adenocarcinoma), the response rate was 36% and the median survival was 25 months [7]. The same response rate was reported in a retrospective analysis of 21 patients who received first-line regimens containing cisplatin, including 14 with adenocarcinoma [7]. Other agents have been reported in case reports, such as 5-FU alone, 5-FU with doxorubicin and mitomycin C, FOLFOX and bevacizumab, with varying responses [7].

The prognosis for primary adenocarcinoma remains very poor; five-year survival, all stages combined, ranges from 0 to 31% [5].

List of abbreviations

- CT — Computed tomography
- NOS — Not otherwise specified
- WHO — World Health Organization
- PFS — Progression-free survival
- OS — Overall survival
- CHU — Centre Hospitalier Universitaire

5. Conclusion

Adenocarcinoma of the bladder represents a diagnostic and therapeutic challenge due to the scarcity of studies on this type of tumor, in most cases being small retrospective series. Until now, no codified therapeutic strategy has been established, but its treatment remains essentially surgical. The prognosis remains reserved, however, due to the very often aggressive and infiltrative nature of this histological sub-type.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no competing interests

Author contributions

- All authors contributed to the conception, literature search, analysis, and manuscript drafting.
- All authors approved the final manuscript.

Data availability

All data are contained within the article and its references.

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