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Case report

Nephrogenic Adenoma Of The Bladder.

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Abstract

We describe the clinical case of a older woman with a previous diagnosis of moderately and poorly differentiated and non-infiltrating bladder cancer (G2-G3) trated with Bacillus Calmette-Guerin (BCG) and with a subsequent histological diagnosis of nephrogenic adenoma.The material sent for histological examination, received in various fragments papillary-looking and fixed in 4% formalin, was sampled and included in paraffin. At the microscope in one of the fragments there was a cell proliferation with tubular architecture, consisting of monostratified cuboid cells with a large nucleus and scarce eosinophilic cytoplasm. These cells showed positivity for CK7 and PAX8, negativity for CK20 and focal positivity for GATA3, Ki67 showed a low proliferative index. The histopathological diagnosis was nephrogenic adenoma.
The subsequent follow-up of the patient, who is still alive and in good health, was negative.The differential diagnosis is with urothelial papilloma, low-grade urothelial neoplasms, prostatic adenocarcinoma, urothelial carcinoma of uncertain histology and clear cell bladder carcinoma, although the latter is rare.
Finally, since recurrence is frequent, constant follow-up is required.

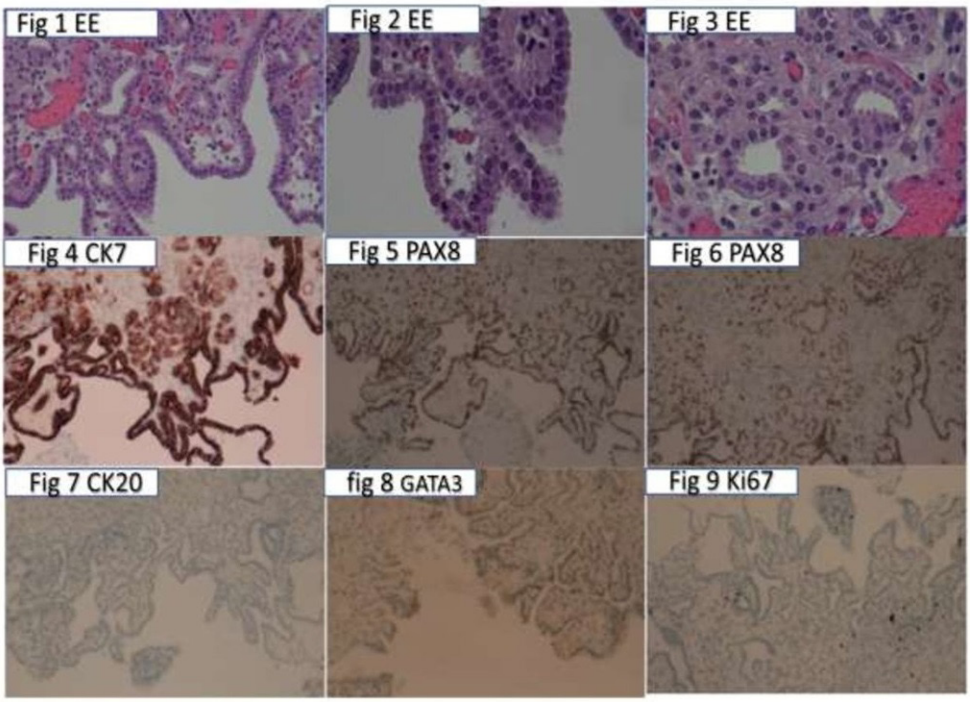
Keywords : Urinary Bladder[1] , Nephrogenic adenoma[2], Nephrogenic Metaplasia[3] , Urinary Bladder neoplasms[4], Urologic Diseases[5], Urothelial Carcinoma[6].

CASE REPORT

A older woman, with a previous diagnosis of non-infiltrating, moderate-slightly differentiated urothelial carcinoma (G2-G3) treated with BCG, during subsequent ultrasound checks showed a neoformation of vegetative aspect of about 1x1 cm in the cavity bladder for which it was necessary to revise by means of cystoscopy and to remove it.
The material sent for histological examination, received in various fragments papillary-looking and fixed in 4% formalin, was sampled and included in paraffin.
At the microscope, in one of the fragments there was a cell proliferation with tubular architecture, consisting of monostratified cuboid cells with a large nucleus and scarce eosinophilic cytoplasm (fig 1,2,3).
On immunohistochemistry, these cells showed positivity for CK7 (fig 4) and PAX8 (fig 5,6), negativity for CK20 (fig 7) and focal positivity for GATA3 (fig 8).
Ki67 showed a low proliferative index (fig 9).
The histopathological diagnosis was nephrogenic adenoma.
The subsequent follow-up of the patient, who is still alive and in good health, was negative.

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Figure 1. E.e. And Immunohistochemistry.



DISCUSSION

First described in 1949 (1), nephrogenic adenoma (or nephrogenic metaplasia) is considered a benign neoplasm or a metaplastic response of the bladder epithelium to chronic infection, stones or prolonged catheterisation (2); it is often diagnosed in patients who have undergone renal transplantation or who are undergoing BCG therapy for urothelial bladder cancer.(3)

On cystoscopy, it appears as low-grade urothelial carcinoma or as chronic cystitis, and at histological examination it is also necessary to evaluate the multiple aspects that the lesion can assume.

Macroscopically it is a sessile lesion, papillary or polypoid type, single, sometimes multiple.

Microscopically it is a heterogeneous lesion, showing a variety of aspects: tubular, papillary, fibromyxoid, flat, diffuse to large cells with clear cytoplasm (4,5,6).

Frequent occurrence of myxoid material surrounding the tubules, which may show bluish intraluminal myxoid inclusions mimicking signet ring cells.

Sometimes the neoplasm can invade the underlying muscle layer, so the possibility of malignant evolution cannot be excluded, especially in small biopsies (7).

The epithelium is cuboidal and may sometimes show nuclear atypia, with large nuclei and prominent nucleoli, with focal and superficial invasion of the muscle layer that may make difficult the differential diagnosis with a malignant carcinoma.

Immunohistochemistry is positive for PAX-8, PAX-2, CK7, AMACR, EMA, usually negative for p63 (8,9,10).

The differential diagnosis is with urothelial papilloma, low-grade urothelial neoplasms, prostatic adenocarcinoma, urothelial carcinoma of uncertain histology (11) and clear cell bladder carcinoma, although the latter is rare (12).

Finally, since recurrence is frequent, constant follow-up is required.

CONCLUSION

The aim of our case report is to broaden pathologists' knowledge of the histological variability of nephrogenic adenoma, which is a common diagnosis in urological pathology, but can be difficult to interpret under the microscope due to its extensive polymorphism.

Although most of the time nephrogenic adenoma presents with typical tubules and papillae, it may present with a varied spectrum of atypical histological features that may lead to a diagnostic error of malignancy.

Therefore, the pathologist must keep in mind the great variability of histological presentations of nephrogenic adenoma when investigating bladder or urinary tract lesions that are difficult to interpret (13,14,15) and keep it in the range of differential diagnostic possibilities, especially in patients treated with BCG or with a long history of bladder cancer recurrence, in order to make a correct diagnosis.

Availability Of Data

The data supporting the results of this study are available from the corresponding author upon request.

Conflicts Of Interest

The authors declare that there is no conflict of interest regarding the publication of this study.

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