Incidental discovery of a case of renal tuberculoma after intravesical BCG treatment

Komi Hola Sikpa 1, Philippe Danjou, Zied Mahjoubi, Samuel Makke, Agathe Bernard, Chamseddine Chaabane

Lens Hospital, Urology Department, 99 Route de la Bassée, 62300, Lens, France

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ABSTRACT

Intravesical BCG treatment used in the management of NMIBC, usually presents as side effects: pollakiuria, hematuria, fever. Rarer complications may occur, affecting all organs of the urinary tract. Renal tuberculoma, a rare complication of intravesical BCG treatment, may be asymptomatic. It will be necessary to think about it, in front of the appearance of a tumoral lesion of renal localization post intravesical BCG treatment.

1. Introduction

Bladder cancer is the second most common urological cancer in France. 1 Its management calls for immunotherapy with the use of intravesical BCG treatment, if non-muscle invasive bladder cancer (NMIBC), of intermediate risk or high risk, is diagnosed. 1 Intravesical BCG treatment is not without side effects. While it is common to note minor adverse effects such as fever, pollakiuria, dysuria, and hematuria, it is much rarer to encounter complications such as tuberculous granuloma in the kidney.

We report a case of asymptomatic renal tuberculoma that occurred following intravesical BCG treatment.

2. Observation

It was Mr S.K, 64 years old, type II diabetic. He had been referred to an outpatient urology clinic for treatment of macroscopic hematuria. A bladder fibroscopy performed revealed polyps in the right trigonal region and the posterior edge of the bladder neck. After a TURBT performed in October 2018 and the anatomopathological analysis of the resection chips, a NMIBC classified as pT1G3 was diagnosed. He had received 06 intravesical instillations of BCG at the rate of a weekly instillation. During the follow-up, endoscopic controls were carried out, as well as urinary cytologies, without any recurrence being noted. A right ureteral gap was nevertheless noted on endoscopy.

In June 2020, i.e. 21 months after intravesical BCG treatment, a CT-AP performed as part of the follow-up, made it possible to note: “a tumoral lesion of the posterior lip of the right kidney, solid, hypovascular of 30 × 25 × 15 mm evoking a tubulopapillary carcinoma without lymphadenopathy or other secondary localization. The right renal vein was patent. We found a normal aspect of the bladder walls”. (Fig. 1).

Renal MRI confirmed the solid lesion, evoking a papillary carcinoma-like appearance.

In front of this table, a right partial nephrectomy had been performed by open surgery in October 2020.

The anatomopathological analysis of the surgical specimen made it possible to note: ‘

“a renal localization of a granulomatous and necrotizing inflammation due to Mycobacterium tuberculosis. No tumoral lesion detected within the sample; adipose tissue without suspect character or inflammatory aspect”.

The postoperative course had been marked by the appearance of respiratory disorders with a positive Covid-19 test; on postoperative day 10, he had presented an infectious syndrome with the appearance of a urinoma on CT-AP. He had received antibiotic therapy based on Tazocillin and the placement of a ureteral endoprosthesis; he had also been taken care of for covid-19.

The patient had subsequently evolved well with amendment of the infectious syndrome, and regression of the collection.

The patient had also been put on anti-tuberculosis treatment for a period of 06 months. The initial empiric treatment was based on a 4-
drug regimen: isoniazid, rifampin, pyrazinamide, and ethambutol. Upon completion of 2-month therapy, pyrazinamide and ethambutol were discontinued, and isoniazid plus rifampin were continued as a daily therapy for 4 more months.

The patient consulted for control, two months ago, and there was no recurrence of bladder cancer or renal tuberculoma.

3. Discussion

In the literature, several complications are described that can occur after intravesical BCG treatment. Authors have classified them into local and systemic complications. Thus, as local complications we have: cystitis (bladder); granulomatous prostatitis and prostatic abscess (prostate); testicular abscess and granulomatous epididymitis (testis); pyelonephritis, renal abscess, renal granuloma, and ureteral (upper urinary tract) stenosis; and balanitis (penis). The so-called local complications are due to contamination of the urine by BCG, and can involve any organ of the urogenital tract. As for systemic complications, they appear when the BGG diffuses to other organs through the bloodstream: it could be spondylodiscitis (vertebrae); a pseudoaneurysm (blood vessels); pneumonia (lungs); granulomatous hepatitis (liver); granulomatous lymphadenitis (lymphatic vessels); peritonitis (peritoneum); or sepsis.

Kidney damage, after instillation of BCG, occurs in less than 2% of treated patients; they are favored by the presence of vesico-renal reflux, or by the placement of a ureteral endoprosthesis. The occurrence of renal tuberculosis is very rare (< 0.1%), and would be favored by reflux, even if cases without reflux have been reported. In our patient, a bladder fibroscopy performed during the follow-up revealed a right ureteral open bite, secondary to the resection of polyps close to the right ureter.

A patient with renal tuberculoma may be asymptomatic, as was the case in our patient, or present with an infectious syndrome.

On computed tomography, renal tuberculoma appears as a solid hypovascular mass, slightly enhanced, which may mimic renal cell carcinoma. It is necessary to have in mind the context in which the renal mass is discovered, to be able to evoke a renal tuberculosis. Thus, a kidney biopsy would confirm or invalidate the diagnosis. In our patient, the renal mass was noticed 21 months after BCG treatment. Although it is not known exactly how long after the first instillation the granuloma appeared, it was difficult to link the renal mass seen on CT, BCG treatment, especially since it is an extremely rare complication.

Most patients in this situation undergo a partial or total nephrectomy or even a nephro-ureterectomy; often because the radiologist had concluded that it was renal cell carcinoma.

Note that the spontaneous resolution, without any scar, in the absence of treatment, of renal tuberculoma post intravesical BCG treatment confirmed by biopsy, is possible. The disappearance of the renal granuloma, after taking antituberculous drugs or corticosteroids is just as possible. It is therefore recommended, treatment with antituberculous drugs for at least 3–6 months, up to a maximum of 1 year. Surgical treatment would be reserved for patients who are still symptomatic (fever, pain) after medical treatment.

4. Conclusion

Post-BCG treatment renal tuberculoma is rare. This should be considered in patients presenting with a renal mass on imaging, and who have benefited from BCG treatment as part of the management of a bladder tumour.

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