Urinary schistosomiasis presented as bladder malignancy with pulmonary metastases: a case report

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ABSTRACT

Schistosoma haematobium is the species primarily responsible for the manifestation of schistosomiasis in the genitourinary tract. It is a parasitic disease caused by flukes (trematodes) of the genus *Schistosoma*, which can result in acute and chronic manifestation. We report a case of urinary schistosomiasis that initially presented as advanced bladder cancer with pulmonary metastasis on initial computed tomography scan. Further investigations revealed no cancer and pulmonary changes resolved with treatment. The involvement of bladder is the hallmark of *S. haematobium* infection and it is unusual to have pulmonary manifestation without concurrent hepatosplenic disease. Within the lungs, deposition of *Schistosoma* eggs causes a granulomatous reaction, typically producing miliary nodules on chest radiographs. In our case, this was interpreted initially as lung metastases. However, given the cystoscopic findings and subsequent resolution with praziquantel, this was proved otherwise. This case highlights the importance of urinary cytology in the initial investigation of haematuria. Clinicians should be aware of such a potential differential diagnosis, especially in patients with prior travel history to endemic areas.

KEYWORDS

Bladder cancer – Schistosomiasis

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Introduction

Schistosoma haematobium is the species primarily responsible for the manifestation of schistosomiasis in the genitourinary tract. It is a parasitic disease caused by flukes (trematodes) of the genus *Schistosoma*, which can result in acute and chronic manifestation. After malaria and intestinal helminthiasis, schistosomiasis is the third most devastating tropical disease in the world. It is a major source of morbidity and mortality for developing countries such as Africa, South America, the Caribbean, the Middle East and Asia. In 2015, 66.5 million people were treated for schistosomiasis.¹

Case history

A 65-year-old man who was otherwise fit was referred to a two-week-wait urology clinic following a trip to Malawi, with lower urinary tract symptoms consisting of frequency, urgency, dysuria and terminal haematuria. On examination, he was found to have a smooth, regular prostate in addition to a submucosal, firm lesion at the right seminal vesicle. His full blood count revealed a marked eosinophilia ($1.6 \times 10^9/l$).⁵

Diagnostic flexible cystoscopy showed solid-appearing, multifocal raised lesions within the bladder, in addition to raised lesions at the trigone, left lateral wall and at the bladder neck. Staging computed tomography (CT) suggested T3N2M1 multifocal cancer with early T3 disease at

Figure 1 Pre-treatment scan

Figure 2 Pre-treatment scan

Figure 3 Post-treatment scan

bladder base (Figs 1 and 2). Multiple enlarged bilateral pelvic nodes, especially in the upper mesorectum and lower sigmoid mesentery, with a thickened rectal mucosa, were also seen. Multiple aggressive-appearing lung metastases with small volume, malignant looking mediastinal lymph nodes were also found. Despite the suggestion of malignancy in the CT scan report, urinary cytology revealed *S. haematobium* ova with multiple neutrophil polymorphs amidst histiocytes.⁴

After multidisciplinary team discussion, the patient was commenced on praziquantel and he underwent transurethral resection with negative histology for cancer.⁵ Rigid sigmoidoscopy did not reveal any abnormalities.

After three months, a repeat CT suggested resolution of lung nodules and pelvic lymph nodes and flexible

Figure 4 Post-treatment scan

cystoscopy showed complete resolution of bladder lesions (Figs 3 and 4).

Discussion

While involvement of bladder is the hallmark of *S. haematobium* infection, it is unusual to have pulmonary manifestation without concurrent hepatosplenic disease.⁶ Within the lungs, deposition of *Schistosoma* eggs causes a granulomatous reaction, typically producing miliary nodules on chest radiographs. In our case, this was interpreted initially as lung metastases. However, given the cystoscopic findings and subsequent resolution with praziquantel, this was proved otherwise.

Conclusion

This case highlights the importance of urinary cytology in the initial investigation of haematuria. Clinicians should be aware of such a potential differential diagnosis, especially in patients with prior travel history to endemic areas.

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