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Original Research Paper

Urology

URINARY SCHISTOSOMIASIS WITH TRANSITIONAL CELL CARCINOMA : A RARE CASE REPORT

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ABSTRACT Schistosomiasis is an endemic helminthic disease found mainly in africa and middle east countries.Indian subcontinent has always been considered as a low risk region for human schistosomiasis,the status of human schistosomiasis in india is not well investigated. In this case report ,a 75 years old smoker male who is professional diver, resident of coastal region in Gujarat, India,presented with hematuria ,imaging was done which was suggestive of bladder mass.Transurethral resection of bladder mass done ,histopathology was suggestive of high grade transitional cell carcinoma involving lamina propia but deep muscle was free of tumor.Restage TURBT was done and biopsy was suggestive of chronic inflammation with degenerated ova of schistosomiasis ssen in deep muscle. Six weeks of intravesical BCG therapy along with tablet praziquantel was given.Though schistosomiasis in not found in india but clinicians should consider it in differential diagnosis even if the patient had never travelled to endemic region

KEYWORDS : Schistosomia Haematobium, Bladder Transitional Cell Carcinoma

Introduction

Schistosomiasis is a parasitic and endemic disease in more than 75 countries while more than 200 million of world populations are infested to this parasite (1, 2) This parasitic chronic disease caused by a blood circulation parasite known as *Schistosoma haematobium*. This infection induces chronic inflammation in the urinary tract, most likely bladder and rarely in female genital in endemic area due to the deposition of large numbers of eggs in the sub-epithelial tissues (3). The urinary tract infested patients are suffering chronic granulomatosis with the clinical symptoms of urinary frequency, dysuria and terminal hematuria. If urinary schistosomiasis infested patients left untreated it may cause kidney failure, bladder cancer, and even prostate cancer (4, 5).

One of the main consequences of infection with S. haematobium is a marked increase in the incidence of carcinoma of the bladder, although this bladder cancer link in schistosomiasis is generally accepted but its carcinogenic mechanisms are less clear (6).

The predominant type of bladder cancer in schistosomiasis is squamous cell carcinoma and also the age range of schistosomiasis dependent bladder cancers patients are lower than non schistosomiasis bladder cancers (third or fourth decade vs. seventh) (2).

So far there were rare reports regarding simultaneous incidence of squamous cell and transitional bladder cell carcinoma. . In turn, the relationship between urothelial carcinoma and Schistosoma is rare. Schistosomiasis is not common in india and is generally seen in patients who have travelled to tropics.

Case report

This patient was a 70-years-old smoker male, a professional diver, who attended urology outpatient clinic of our teaching hospital with 1-month history of features of hematuria, urinary frequency and dysuria. There was no history of diabetes, sexually transmitted infection or trauma. Also he had no history of stay in Africa and Middle East countires where urinary schistosomiasis was prevalent (7). On examination, his vital signs were essentially normal direct rectal examination showed a mild enlarged prostate with smooth surface and his serum prostatic specific antigen (PSA) was 2.5 ng/mL, which is normal for age/assumed prostatic volume. His preliminary hematological and renal function tests were normal, in suprapubic sonography that was done from his bladder, it showed a polypoid tumor 34x30 mm on posterolateral wall of bladder . MRI showed large heterogenous mass lesion 34x30 mm involving right posterolateral wall and superior wall of urinary bladder (Fig. 1),. after cystoscopy and obtaining three specimens from bladder mass the histopathology study showed high grade transitional cell carcinoma involving lamina propia but deep muscle was free of tumor.Restage TURBT was done and biopsy was suggestive of chronic inflammation with degenerated ova of schistosomiasis ssen in deep muscle. six weeks of intravesical BCG therapy along with tablet praziquantel was given . After nearly 7 months follow-up (cystoscopy and biopsy), there was not any sign of disease.

Fig.1: Polypoidal mass involving right posterolateral and superior wall bottom of bladder

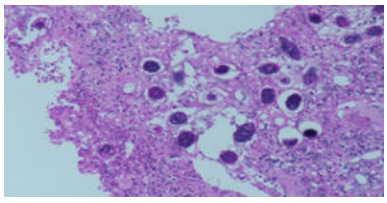

Fig.2: Calcified Schistosoma ova in fibro muscular stroma

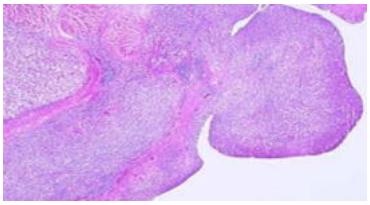

Fig. 3: Transitional cell carcinoma

DISCUSSION

Schistosoma haematobium is the most common cause of hematuria in countries where the disease is endemic. The bladder, lower ureters, urethra, seminal vesicles, uterus, cervix, and vagina are the sites usually affected. The main presenting features of urinary schistosomiasis are painful terminal hematuria, loin pain, and symptoms of secondary bacterial infection. Symptoms associated with genital schistosomiasis are dysmenorrhea, menorrhagia, leucorrhea, lower abdominal pain, and intermenstrual bleeding.The deposition of schistosoma eggs in the bladder submucosa provokes the formation of granulomas. Coalescence of granulomas leads to the formation of pseudotubercles, which appear as seed-like bodies surrounded by a zone of hyperemia and which are characteristic of early and active disease. Congregation of the tubercles, hyperplasia of the mucosa, and hypertrophy of the bladder wall muscle result in nodular or polypoid lesions that tend to ulcerate and bleed. The most common late lesion is the " sandy patch " where calcified ova beneath the atrophic mucosa appear like sand. The bladder mucosa loses its pink appearance, the subepithelial branching of blood vessels is not visible, and the picture is described as " the ground glass " mucosa. [8,9,10] Pseudotubercles and all the changes described in the bladder may be present in the wall of the ureters. Ultrasonography has become the gold standard for evaluation of pathology in urinary schistosomiasis. Transrectal US is more sensitive for appearance of prostatic [10,11] and seminal vesicle lesions. [11] The assessment of bladder pathology includes identification of surface irregularities, thickening of the wall, masses, and pseudopolyps. [12].

Hatch reported a case of urinary schistosomiasis in an Englishman who was admitted in European General Hospital, Bombay in 1878 [13]. However, this first known case of human schistosomiasis in India was not an indigenous case. The patient had been in Arab and Egypt and likely to have acquired the infection from these endemic countries. In subsequent years, Hatch published a record of about 12 cases of human urinary schistosomiasis and its diagnostic features based on his observation in Jamsedjee Jejeebhoy hospital, Bombay [14]. However the first autochthonous case in an Indian aborigine was reported in 1903 [15]. Several sporadic cases have been reported thereafter from different parts of the country and also three endemic foci have been identified [16, 17].

Maharashtra state holds an important place in history of schistosomiasis in India. In middle of twentieth century, the discovery of endemic focus of human schistosomiasis was a breakthrough in schistosomiasis research in India. The pioneer work of Gadgil and Shah established the epidemiology and lifecycle of *Schistosoma spp* of Gimvi. Based on the infection experiments with common snail species existing in the area, they reported *F. tenuis* as the natural intermediate host of schistosome . Although controversies exist on the taxonomy of this species of schistosome, Gadgil and Shah reported it as *S. haematobium* . A resurvey in 1958 showed decrease in overall incidence of infection in Gimvi. In addition to this, two endemic foci of human schistosomiasis were discovered from Madras (Tirupparankundaram village, Madurai district) and Madhya Pradesh (Lahager village, Raipur district) . However, with the elimination of foci of schistosomal infection, the number of human infection reduced significantly.

CONCLUSION

Though Schistosomiasis is not found in India but it can be present in people travelling to endemic areas of schistosomiasis. Schistosomiasis is the first diagnosis to evoke for people coming from endemic areas with hematuria (macroscopic and microscopic), CT is superior to Ultrasonography in the diagnosis of urinary schistosomiasis, because it gives more, and more specific, information about the affected organs, the extent of lesions, and the degree of calcifications, the best method for evaluation of the response to treatment. Treatment for bladder cancer stage wise remains the same. Regarding the increasing travels all around the world, clinicians should remember that Schistosoma infection is certainly a part of the differential diagnosis of bladder carcinoma, even if the patients are not from endemic regions.

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