

Testicular mass in a geriatric patient

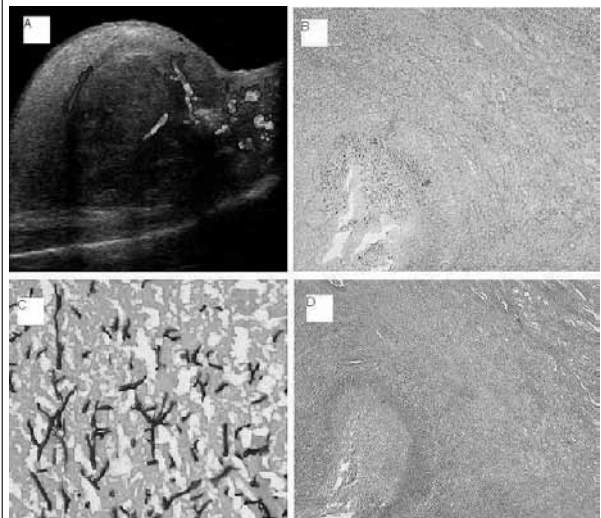
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CASE REPORT

An 80-year old man was admitted suffering from a painful, enlarged right testicle for approximately one month. His medical history revealed a transurethral resection of the prostate for benign hyperplasia seven years before. The resection, performed in another hospital, was complicated by recurrent strictures of the urethra and several episodes of lower urinary tract infection. Internal urethrotomies and a holmium laser incision were used to resolve the strictures without lasting success. The patient did not have diabetes nor was he receiving any immunosuppressants. On presentation, genital examination revealed an indurated, tender, and enlarged right testicle. The patient was afebrile. White blood cell count was $7.9 \times 10^9 / l$ (71% neutrophils), C-reactive protein was 3.6 mg/dl (normal limit <0.5 mg/dl), and alphafetoprotein was 11.6 ng/ml (normal limit <7.0 ng/ml). Other routine laboratory tests, lymphocyte subsets, and nitroblue-tetrazolium test were within normal limits. HIV serology was negative. A scrotal ultrasound revealed a testicular mass of approximately 3 cm which was cystic in the centre and more solid in character at the periphery. The Doppler signal showed a halo of intense hyperaemic flow with absent flow centrally (*figure 1A*). Since a malignancy was suspected, a radical orchiectomy was performed. Pathological examination showed a soft cystic nodule in the testicle extending towards the epididymis and spermatic cord. Histological examination revealed a well-demarcated nodule characterised by a thick fibrous capsule, infiltrated by lymphocytes and plasma cells, and surrounding a collection of granulation tissue, and necrotic debris. A Grocott's methenamine silver staining was performed which showed hyphae (*figure 1B-D*).

Figure 1.



A. Scrotal Doppler ultrasound revealing a testicle containing a mass with a diameter of approximately 3 cm in the upper pole. The mass is hypoechoic and cystic in the centre and more solid in character at the periphery. The Doppler signal shows a halo of intense hyperaemic flow with absent flow centrally.

B-C. Grocott's methenamine silver stain showing hyphae.

D. Histological examination revealing a well-demarcated nodule characterised by a thick fibrous capsule, infiltrated by lymphocytes and plasma cells, and surrounding a collection of granulation tissue, fungal hyphae, and necrotic debris.

WHAT IS YOUR DIAGNOSIS?

See page 139 for the answer to this photo quiz.

ANSWER TO PHOTO QUIZ (PAGE 137)
TESTICULAR MASS IN A GERIATRIC PATIENT

The silver stain shows dichotomically branching hyphae at 45° angles, which is typical for *Aspergillus* spp.¹ This leads to the diagnosis of urogenital aspergillosis, which was confirmed by a positive culture of *Aspergillus fumigatus*. No other foci were found by chest X-ray, computed tomography of the abdomen, and positron emission tomography.

While aspergillosis of the sino-pulmonary tract is a relatively common finding, *Aspergillus* infections of the urogenital tract are very rare. Only two cases of isolated testicle involvement have been described: Singer *et al.* reported a case in a renal transplant recipient receiving immunosuppressive agents, and another case was described in an HIV patient by Hood *et al.*^{2,3} Our patient, although elderly, seemed immunocompetent; he did not have neutropenia or lymphopenia, and had not received corticosteroid treatment.

The most common route for developing aspergillosis is by inhalation of aerosols containing spores and subsequent haematogenous seeding.¹ Another transmission route is perioperative inoculation with development of postoperative invasive aspergillosis.⁴ Similarly, the *Aspergillus* spores in our case probably entered the urinary tract during one of the multiple instrumentations of the urethra and inoculated the testicle by urinary reflux.

We decided to treat the patient with voriconazole, because histologically, the area of inflammation extended beyond the resection plane and the urine culture grew *A. fumigatus* postoperatively. These findings suggested that resection could be insufficient to clear the infection. Oral therapy was continued for four months. The optimal duration of therapy is unknown.⁴ Seven months after cessation of therapy, there was no clinical recurrence.

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REFERENCES

1. Segal B. Aspergillosis. NEJM. 2009;360:1870-84.
2. Singer A, Kubak B, Anders K. Aspergillosis of the testis in a renal transplant patient. Urology. 1998;51:119-21.
3. Hood SV, Bell D, McVey R, Wilson G, Wilkins EG. Prostatitis and epididymo-orchitis due to *Aspergillus fumigatus* in a patient with AIDS. Clin Infect Dis. 1998;26:229-31.
4. Pasqualotto AC, Denning DW. Post-operative aspergillosis. Clin Microbiol Infect. 2006;12:1060-78.