

Case Reports

Genital filariasis masquerading as testicular torsion

Pankaj Kumar Garg¹, Shuchi Bhatt², Bineeta Kashyap³, Ashish George¹ & Bhupendra Kumar Jain¹

¹Departments of Surgery, ²Radiodiagnosis and ³Microbiology; University College of Medical Sciences and GTB Hospital, University of Delhi, Delhi, India

Key words Genital filariasis; masquerading; testicular torsion; *Wuchereria bancrofti*

Genital filariasis in India presents commonly as secondary vaginal hydroceles with an associated epididymo-orchitis¹. *Wuchereria bancrofti* is the major species accounting for >98% of filarial cases in India. Acute scrotum is rarely seen in genital filariasis. It is usually caused by secondary bacterial infection of obstructed lymphatic channels². Presence of linear echogenic structures with persistent, random, almost tireless twirling movements on high resolution ultrasonography is considered diagnostic of adult filarial worms³. Ultrasonography is the only modality available currently to assess the response to antifilarial drugs. We present an unusual case of genital filariasis who presented with acute scrotum.

Case report: An 18-year-old male presented with severe pain in left scrotum of 6 h duration. He denied any history of trauma. He was a resident of eastern Uttar Pradesh, India. On physical examination, there was a tender swelling in the left scrotum. Elevation of scrotum provided no relief in pain. There was no palpable inguinal lymphaden-

opathy. Clinical diagnosis of acute testicular torsion was made. High resolution ultrasonography of scrotum revealed intensely congested testes (left > right). There were multiple anechoic cystic lesions in both the testes (mainly in the region of rete testes) and epididymis. Multiple elongated tubular structures (50–100 microns) could be visualized within these cystic lesions (Fig. 1). Peculiar random movements of these tubular structures were similar to movements demonstrated by microfilariae. Ultrasound guided aspiration was carried out from one of the cystic lesion in the rete testis. Microscopic examination done within 30 min of aspiration, showed multiple microfilariae. Presence of sheath and absence of nuclei from tip-tail of microfilariae confirmed the diagnosis of *W. bancrofti* (Fig. 2). His total leukocyte count was 6600/mm³. Microscopic examination of urine showed 1–2 pus cells/high power fields. Patient was prescribed diethylcarbamazine (6 mg/kg/day) for 14 days and diclofenac sodium (100 mg/day in two divided doses) for three days. Though patient was completely asymptomatic after three weeks of

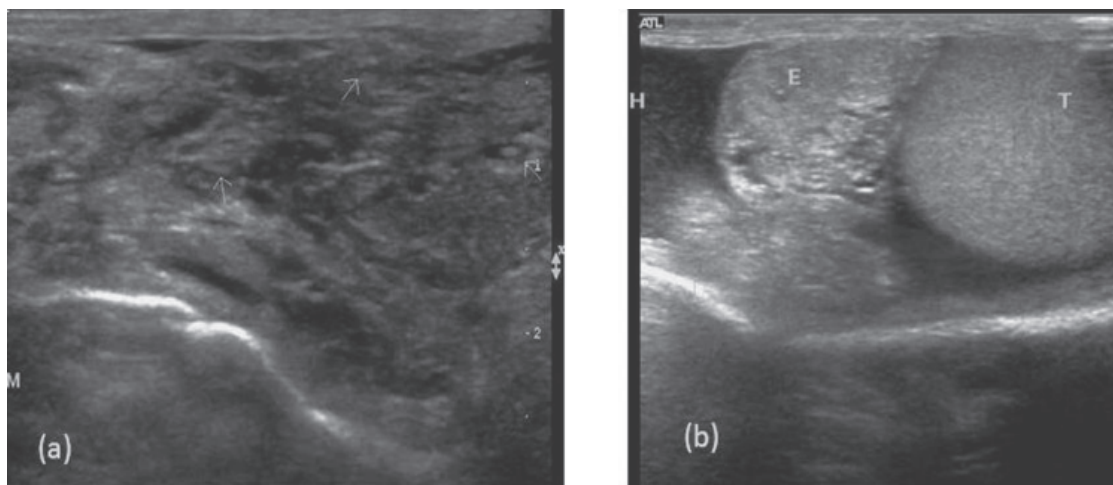


Fig. 1: (a) Magnified high resolution grey scale image showing enlarged epididymis tail with evidence of multiple dilated anechoic channels; and (b) Transverse section of scrotal sac showing the testes (T) and epididymis (E) in cross-section with associated hydrocele (H). Epididymis is enlarged and demonstrating multiple dilated channels.

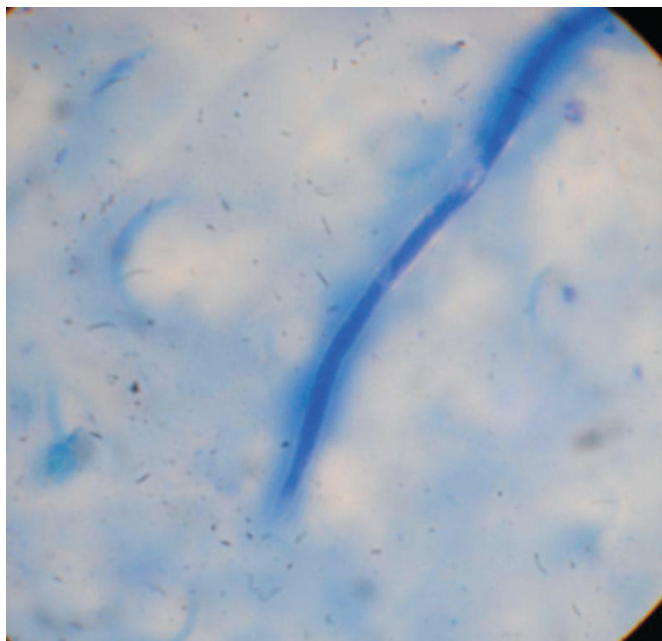


Fig. 2: *Wuchereria bancrofti* microfilaria seen on microscopic examination of USG guided testicular aspirate (Giemsa stained $\times 1000$).

therapy, however, repeat ultrasonography of scrotum yet revealed a few motile microfilariae. Thereafter, a single dose of Ivermectin (0.4 mg/kg) was prescribed. Six weeks after resolution of symptoms, patient's sperm count was 15 millions/mm³.

DISCUSSION

The filarial infection is prevalent in both the urban and rural areas. Adult worms are found in the lymphatic vessels and lymph nodes of humans only; there is no animal reservoir³. Adult worms in the lymphatic channels produce clinical manifestations of the disease due to lymphatic dysfunction, obstruction and inflammation. Genital bancroftian filariasis may manifest in several ways including hydrocoele, lymph varix, lymph scrotum, filarial penis or elephantiasis of the genitalia and chyluria. Hydrocoele accounts for 90% of the morbidity due to genital filariasis. Acute presentation of genital filariasis is rarely seen and includes acute funiculitis, orchitis and epididymitis². These acute manifestations are caused by secondary bacterial infection of obstructed lymphatic channels. Systemic antibiotics are invariably required for the resolution of acute genital filariasis.

Diagnosis of genital filariasis can be confirmed by direct demonstration of microfilaria in blood or aspirated fluid unequivocally. The tools available for the detection of active infection in an amicrofilaremic patient are circulating filarial antigen (CFA) tests and the ultrasound with

high frequency probe showing filaria dance sign (FDS). The CFA detection tests are now regarded as the 'gold standard' for diagnosing *W. bancrofti* infections⁴. The specificity of these assays is near complete, and the sensitivity is greater than that achievable by the night wet blood smears for microfilariae. Two commercial configurations of this assay are available, one based on enzyme-linked immunosorbent assay (ELISA) methodology that yields semi-quantitative results, and the other based on a simple immunochromatographic card test, yielding only qualitative (positive/negative) answers. The FDS represents living adult worms in their natural habitat (lymphatic vessels and lymph nodes) visualized by ultrasonography. This was first described by Amaral and coworkers⁵ in 1994 as "peculiar, random-appearing movements of objects inside a vessel-like structure". Various studies have established the role of high-frequency, high-resolution scrotal ultrasonography for diagnosing scrotal filarial infection in symptomatic patients⁶.

Our case highlights an unusual manifestation of genital filariasis, acute scrotum caused by severe congestion of testis and epididymis by a large number of microfilaria. Our patient responded to antifilarial drugs and analgesics and did not require antibiotics. This is unlike acute phase usually seen in genital filariasis where secondary bacterial infection of obstructed lymphatic channels is the cause of acute clinical manifestations. Suppuration usually takes place if systemic antibiotics are not instituted in these patients.

This case underlines the importance of ultrasound as a diagnostic tool in genital filariasis as it could give us a specific diagnosis in this patient. Though patient was in acute pain on the left side, peculiar filarial dance sign could be better perceived on the right rete testis. Possible reasons for this disparity may be manyfolds. The rete testis is a complex anastomosis of seminiferous tubules located in the mediastinum testis. Their drainage is via several efferent ductules which open to form the head of the epididymis. In our patient, there were more dilated channels along with lesser number of microfilaria on the right side as compared to left side. This provided enough room for the microfilarial motility which could be appreciated on USG with ease.

This case also questions the previous reports of filarial dance sign being a feature of adult worms. Microscopic examination of aspirate from the cystic lesion from the region of rete testis in our case, where filarial dance sign was appreciated on high resolution USG, revealed presence of microfilaria and not adult worm. We feel that these microfilariae, which were of the size of 50–100 microns, could be picked up on high resolution USG due to

their rapid movements within an ideal acoustic medium and turbulence within the surrounding fluid created by their movements. Shyamkumar *et al*⁷ presented the same findings and stressed renaming of this sign to “microfilarial dance sign” instead of filarial dance sign.

This case report highlights an unusual presentation of genital filariasis where intense congestion of testis and epididymis with microfilaria resulted in acute scrotum masquerading testicular torsion. High resolution ultrasonography is an invaluable tool for the diagnosis of genital filariasis and to assess the response of antifilarial drugs.

REFERENCES

1. Barreto SG, Rodrigues J, Pinto RGW. Filarial granuloma of the testicular tunic mimicking a testicular neoplasm: a case report. *J Med Case Reports* 2008; 2: 321.
2. Iturregui-Pagán JR, Fortuno RF, Noy MA. Genital manifestation of filariasis. *Urology* 1976; 8: 207–9.
3. Chaubal NG, Pradhan GM, J Chaubal JN, Ramani SK. Dance of live adult filarial worms is a reliable sign of scrotal filarial infection. *J Ultrasound Med* 2003; 22: 765–9.
4. Weil GJ, Lammie PJ, Weiss N. The ICT filariasis test: a rapid format antigen test of diagnosis of Bancroftian filariasis. *Parasitol Today* 1997; 13: 401–4.
5. Amaral F, Dreyer G, Figueredo-Silva J, Noroes J, Cavalcanti A, Samico SC, *et al*. Live adult worms detected by ultrasonography in human Bancroftian filariasis. *Am J Trop Med Hyg* 1994; 50: 753–7.
6. Bhaskar C, Harinath, Reddy MVR. Filariasis in India. *J Internatl Med Sci Acad* 2000; 13: 8–12.
7. Shyamkumar N, Mehrotra S, Athyal RP, Taranath A, Nair S, Govil S, Chacko NK. Can we see microfilaria on ultrasound? A real-time ultrasound and wet smear demonstration of dancing microfilaria. *The Internet J Urol* 2004; 2(1). Available from: <http://www.ispub.com/ostia/index.php?xmlFilePath=journals/iju/vol2n1/filaria.xml>.

Correspondence to: Bhupendra Kumar Jain, Director, Professor and Head, Department of Surgery, University College of Medical Sciences, Guru Teg Bahadur Hospital, Dilshad Garden, Delhi-110 095, India.
E-mail: bhupendrakjain@gmail.com

Received: 24 October 2010

Accepted in revised form: 20 May 2011