

Scrotal Filariasis: Post Operated Case of Hydrocele

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Abstract: We Present Here, A Case Of Genital Filariasis, Who Was Operated For Hydrocele. Patient Presented With Blackish Swelling Over Scrotum Associated With Watery Discharge From Penis And Scrotum. (Lymphocutaneous Fistula). An Evaluation, No Eosinophilia, No Microfilaria Seen In The Peripheral Blood Smear. In spite Of All, Patient Underwent For Penile Grafting With Complete Excision Of Hydrocele Sac With Scrotal Reduction. Histopathology Confirmed It To Be An Adult Filarial Worm Wuchereria Bancrofti With Minimal Tissue Reaction Around The Worm. It is noted that chronic Filarial Hydrocele is more common in patients living in a bancroftian filariasis endemic area filariasis, previously operated case of eversion of sac.

Keywords: scrotum, filariasis, hydrocele, recurrence, endemic

1. Introduction

Lymphatic filariasis, which is colloquially known as elephantiasis, is a parasitic disease caused by the nematodes *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*.

The adult worms of the species *W. bancrofti* have a predilection for the intrascrotal lymphatic vessels in hosts; thus, hydrocele is the most common manifestation of bancroftian filariasis. In endemic areas, filarial hydrocele is a major cause of disability and disfigurement, as well as a source of direct and indirect economic loss, social stigma, family discord, and sexual burden.

In Developing countries like India, occurrence of genital lymphocutaneous fistula or chronic Filarial Hydrocele is more common in patients living in a bancroftian filariasis endemic area filariasis, previously operated case of eversion of sac.

2. Case Report

a) A 47 year old patient from bancroftian filariasis endemic area () presented with chief complaints of: watery discharge from scrotal area since 4 year.

b) History of Presenting Illness:

- Patient had past history of scrotal swelling. Patient operated for hydrocele (eversion of sac done). Since then patient suffering from watery discharge, along with blackish swelling over penile root.
- Swelling was small in size gradually progressive in nature to present size associated with discharge.
- Patient visited a family physician and was given symptomatic treatment with antibiotics.

c) On evaluation

- Pulse 88 beats per minute
- Blood pressure recorded 120/74 mm hg in right upper arm in supine position.

d) General Examination

- No pallor, cyanosis, icterus, lymphadenopathy, clubbing.

e) Systemic Examination

Respiratory System Examination

- air entry in chest bilaterally equal
- no adventitious sounds heard

Per-abdomen Examination

- No tenderness, guarding, rigidity
- No organomegaly

f) Other Systems

- Within normal limits.

g) Work up

- Blood investigation
- revealed no eosinophilia

Peripheral Smear examination

- no microfilaria seen

h) Differential diagnosis

- lymphocutaneous fistula
- scrotal filariasis.

i) Management

- Patient underwent penile grafting with complete excision of hydrocele sac with scrotal reduction.
- Histopathology confirmed it to be an adult filarial worm *Wuchereria bancrofti* with minimal tissue reaction around the worm.
- Postoperatively patient is asymptomatic till present.

3. Discussion

Filariasis has been a known disease for thousands of years. The first documentation of this disease was found in Egyptian papyrus prior to 5000 BC. In 1900, Sir Ronald Ross, a scientist from the Liverpool School of Tropical Medicine, reported that lymphatic filariasis is transmitted through mosquito bites. In 1902, Sir Ross was awarded the Nobel Prize in medicine for his discovery that malaria is transmitted to humans through mosquito bites. The adult worms of *Wuchereria bancrofti* have a predilection for the intrascrotal lymphatic vessels, and lymphatic obstruction can result in a fluid collection within the tunica vaginalis of the scrotum. Hydrocele is the most common manifestation of chronic *W. bancrofti* infection in males in endemic areas. In females, similar fluid collections can develop along the canal of Nuck. Filarial hydroceles are more difficult to

excise surgically than idiopathic hydroceles, because of scarring and fibrosis. 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 reservoir. 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.

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 filaria dance sign (FDS). The CFA detection tests are now regarded as the 'gold standard' for diagnosing *W. bancrofti* infections.

The adult *W. bancrofti* may produce lesions by involving the lymphatics of the lower limbs, spermatic cord, epididymis, testis, retroperitoneum, and female breast. Its typical presentations are elephantiasis, funiculitis, and lymphadenitis.

To guide surgical management, Capuano and Capuano have proposed a standardized clinical classification of filarial hydroceles, based on four criteria:

- Type – Unilateral versus bilateral
- Side (left/right)
- Scrotal enlargement - Rated from I to VI
- Grade of burial of the penis – Rated from 0 to 4

For size of the scrotum, the rating scale is as follows:

Stage I: Smaller than a tennis ball

Stage II: Larger than of a tennis ball up and down; the lower pole of the scrotum does not reach halfway down the thigh (between the lower edge of the great trochanter and the upper edge of the patella)

Stage III: The lower pole of the scrotum reaches the area between mid-thigh and the knee (upper edge of the patella)

Stage IV: The lower pole of the scrotum reaches the area between the upper edge of the patella and the lower edge of the knee (tibial tuberosity)

Stage V: The lower pole of the scrotum reaches the area between the lower edge of the knee (tibial tuberosity) and the middle of the lower leg

Stage VI: The lower pole of the scrotum reaches the area between mid-leg and the ankle (bi-malleolar line)

For burial of the penis, which can be assessed with the patient standing or lying down, the rating scale is as follows:

Grade 0: No apparent burial; penis length is within normal limits

Grade 1: Partial burial; the length of the visible part of the penis is > 2 cm

Grade 2: More important partial burial; the length of the visible part of the penis is < 2 cm

Grade 3: Total burial; the prepuce, or the tip of the glans penis if the patient is circumcised, is visible and flush with the surface of the scrotum

Grade 4: Total burial; the glans penis is invisible, and the burial cannot be reduced and causes micturition problems

Case where the patient had a solitary scrotal swelling which was not diagnosed by ultrasound (absence of FDS). The swelling was excised and examined. Cross-section and microscopic examination confirmed it be *W. bancrofti*. The interesting negative finding of the absence of FDS prior to surgery by ultrasound is noteworthy. Thus, in a country like India, where lymphatic filariasis is endemic, clinical differential diagnosis of filariasis has to be kept in mind in the absence of FDS.

It is generally believed that the pathogenesis of acquired hydroceles, irrespective of the etiology, is an unbalanced process between transudate production and reabsorptive activity of the tunica vaginalis parietal lymphatics [17], [18]. Thus, the rationale for open hydrocelectomies is to expose, permanently, the hydrocele fluid to an absorbing surface [19]. The mechanism of generating hydrocele has been considered to be the same in all acquired hydroceles and the etiology, per se, has not been considered when choosing the surgical approach.

The very significant difference in hydrocele rate recurrence ($p < 0.001$) observed between patients two different surgical approaches – (1) complete excision and (2) eversion with or without partial excision of sac – could reflect more than differences in surgical technique. It may also signify that the pathogenesis of chronic filarial hydrocele is rather complex. The intrascrotal lymphatic vessels appear to be the preferred site for the adult worms of *W. bancrofti* in infected men. Extensive clinical, surgical and histological observations indicate that in almost 90% of infected men, adult *W. bancrofti* can be detected in the lymphatic vessels of the scrotal area [9], [10]. The primary lesion of bancroftian filariasis, while adult worms are alive, is non obstructive lymphatic vessel dilation without inflammation [8], [11]–[13]. Norões et al. [7] demonstrated that, by contrast, acute filarial hydrocele is a consequence of acute interruption of lymph flow from the tunica vaginalis of the testis. This obstruction is caused by filarial granuloma (corresponding to the formation of palpable nodules detected by physical examination of intrascrotal contents [15]) resulting from death of *W. bancrofti* adult worms in the lumen of intrascrotal lymphatic vessels.

4. Conclusion

In conclusion, in bancroftian filariasis endemic areas, lymphatic fistulae are likely to be an important mechanism responsible for chronic hydrocele, whether recurrent or not. Particularly with the intent to avoid hydrocele recurrence and testicular damage, complete excision of the hydrocele sac.

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