

## Filarial Epididymo-Orchitis – A Case Report

Vaidehi Nagar<sup>1\*</sup>, Sharad Gor<sup>2</sup>, Amita Patel<sup>3</sup>

<sup>1</sup>Senior Resident, Department of Pathology, GMERS Medical College and Hospital, HWVC+C6G, Halar Rd, Nankwada, Valsad, Gujarat 396001, India

<sup>2</sup>Associate Professor, Department of Pathology, GMERS Medical College and Hospital, HWVC+C6G, Halar Rd, Nankwada, Valsad, Gujarat 396001, India

<sup>3</sup>Associate Professor, Department of Pathology, GMERS Medical College and Hospital, HWVC+C6G, Halar Rd, Nankwada, Valsad, Gujarat 396001, India

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\*Corresponding author: Vaidehi Nagar

Senior Resident, Department of Pathology, GMERS Medical College and Hospital, HWVC+C6G, Halar Rd, Nankwada, Valsad, Gujarat 396001, India

### Abstract

### Case Report

In an endemic country like India, the occurrence of filariasis is very common, especially in the states of Uttar Pradesh, Bihar, Jharkhand, Odisha, Andhra Pradesh, and Tamil Nadu. We present a case of a 50-year-old male with scrotal swelling. The patient had a history of trauma before a month. The sonography report suggested the possibility of hematocele. During histopathological examination, it was diagnosed as epididymo-orchitis caused by an adult filarial worm (*Wuchereria bancrofti*). From this, it can be concluded that the possibility of parasitic infestation as a differential diagnosis should be kept in mind when encountering cases of hydrocele, hematocele, or epididymo-orchitis.

**Keywords:** *Wuchereria bancrofti*, testis, hydrocele, filariasis, epididymo-orchitis.

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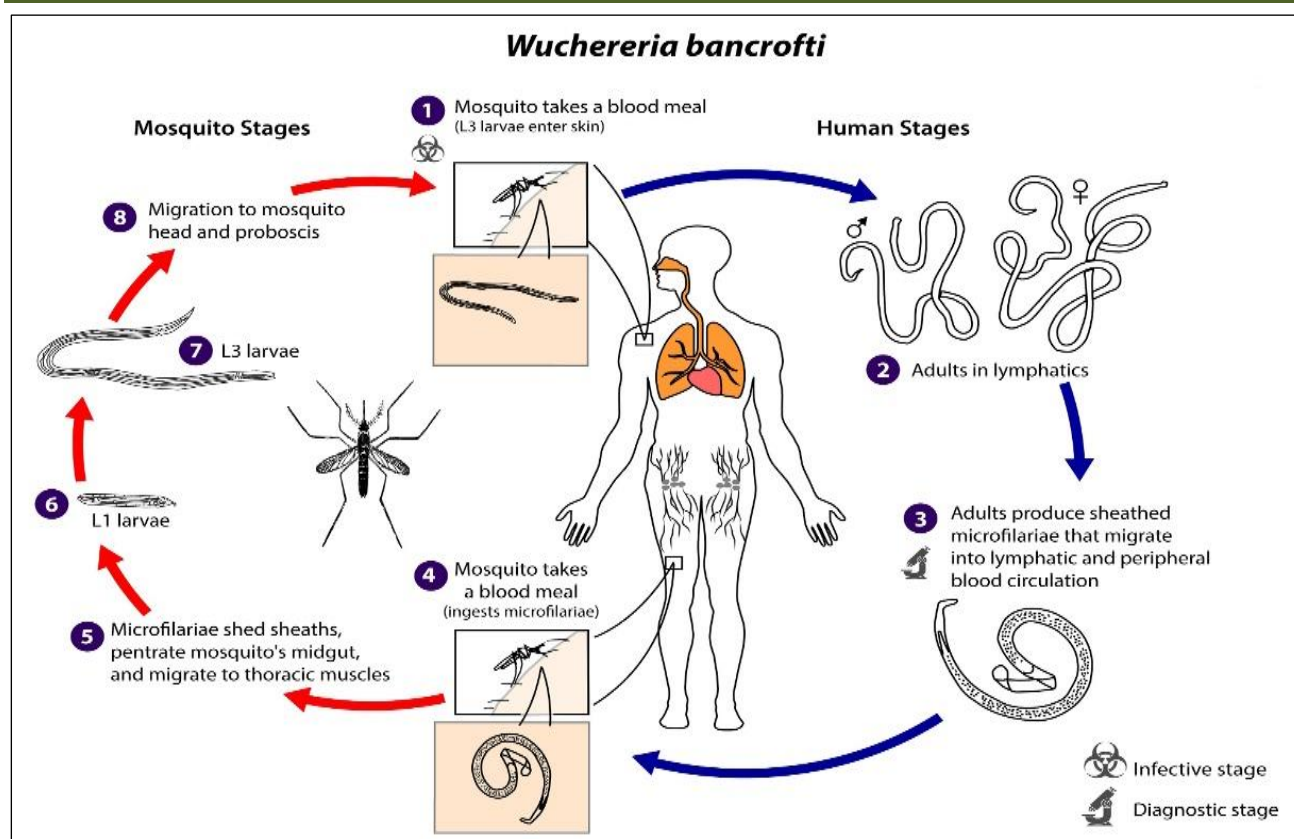
## INTRODUCTION

Filariasis is quite common in an endemic country like India, especially in the states of Tamil Nadu, UP, Bihar, Jharkhand, and Odisha [1]. *Wuchereria bancrofti* is the cause of more than 90% of cases globally, with *Brugia malayi* and *Brugia timori* following closely behind [2]. The adult *W. bancrofti* can produce lesions in a number of lymphatic regions, including the female breast, spermatic cord, epididymis, testis, and retroperitoneum [3].

The accumulation of fluid in the tunica vaginalis within the scrotal sac causes hydrocele. It is a common disorder that causes the scrotum to expand painlessly, and it mostly affects adult males. There are several causes of chronic hydrocele, which can also develop as a side effect of other conditions, including filarial infection or testicular cancer. Chronic hydrocele is quite likely, particularly in regions where filariasis is widespread and *Wuchereria bancrofti* is the causal agent. The parasitic illness filariasis is spread by mosquitoes.

Consequently, a late and persistent sign of filariasis is filarial hydrocele. Over 40 million people are thought to suffer from the persistent, disfiguring symptoms of filariasis in endemic areas. These include lymph scrotum (chylocele), elephantiasis of the scrotum, and filarial hydroceles (affecting about 27 million males) [4].

The most common manifestation of the genital illness is hydrocele, which is caused by blockage or lymphatic channel malfunction [5, 6]. Nematodes are transmitted by mosquitoes. Geographically, the mosquito species that transmit filariasis include those in the genus *Culex*, *Anopheles*, *Aedes*, *Mansonia*, and *Coquillettidia*. The sexual developmental stages take place in humans, the so-called definitive host. In humans, the mature worms do not reproduce. The larvae grow into fully grown adult worms, which mate and mostly generate sheathed microfilariae at night. Additionally, a mosquito consumes microfilariae once more during a blood meal; these transform into larvae, which might spread the disease to another person when the insect consumes blood again, completing the life cycle [7].



#### Lifecycle of *Wuchereria bancrofti*

The figure was retrieved from the CDC (<https://www.cdc.gov/parasites/lymphaticfilariasis/biology.html>).

Data on testicular filariasis and, more especially, filarial epididymo-orchitis, are few [8]. This case report aims to raise awareness regarding filarial epididymo-orchitis and broaden physicians' differential diagnosis of testicular discomfort and swelling based on a patient's medical history.

## CASE REPORT

A 50-year-old male came to the surgical outpatient department of our institute with a complaint of rightsided painless scrotal swelling for a month. The patient reported that scrotal swelling appeared after a trauma and was gradually increasing in size. The ultrasound findings were in favour of hydrocele. Surgical intervention was planned with a clinical diagnosis of right-sided post-traumatic hydrocele. Orchidectomy with the removal of the sac was done, and the specimen was sent for histopathological examination.

### Findings on Histopathology

The right testis with an attached spermatic cord and scrotal sac were received in the histopathological section. The specimen was grey-brown in colour with firm consistency and measured about 10 x 9 x 7 cm in size. After cutting open, blood clots were identified within the scrotal sac. The testis was grey-white and soft to firm, with a large area of central necrosis. Tunica vaginalis was thickened, measuring about 1 cm. The external surface of the epididymis was smooth, grey-

brown, and firm measuring 3 x 2 cm. The cut section was grey-white and firm, with areas of necrosis. The attached spermatic cord measures 3 cm in length (Figures 1 & 2).



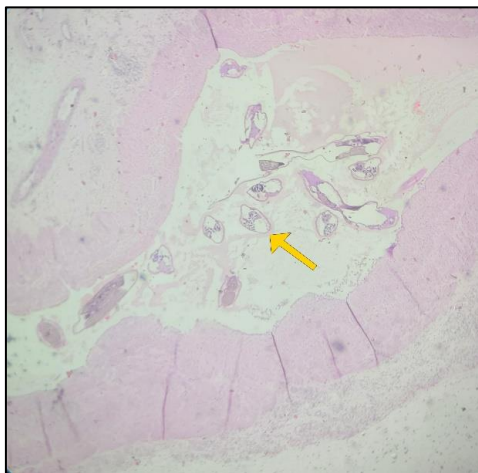
Figure 1: Gross appearance of testis with scrotal sac



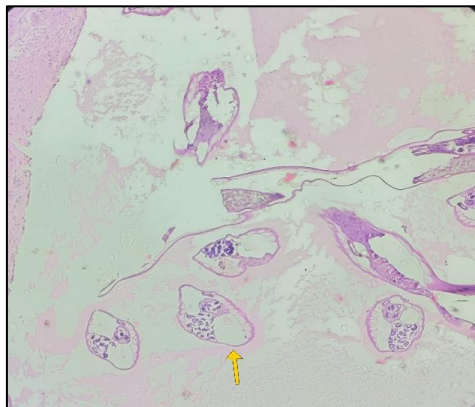


**Figure 2: Cut section shows necrosis of testis and thickened scrotal sac**

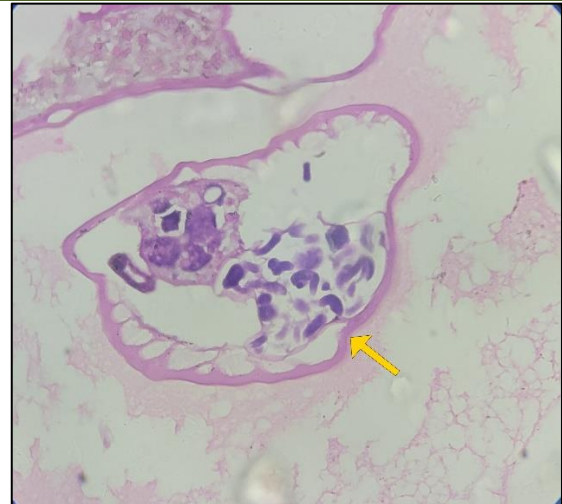
Microscopic examination showed testis and epididymis infiltrated by polymorphs, eosinophils, lymphocytes, and macrophages with areas of necrosis. An adult filarial worm was detected in the spermatic cord along with congestion and abscess formation. The nematode was approximately 150 mm in diameter and contained a gut and paired uteri. The final diagnosis was signed out as epididymo-orchitis caused by an adult filarial worm, *Wuchereria bancrofti* (Figures 3-7).



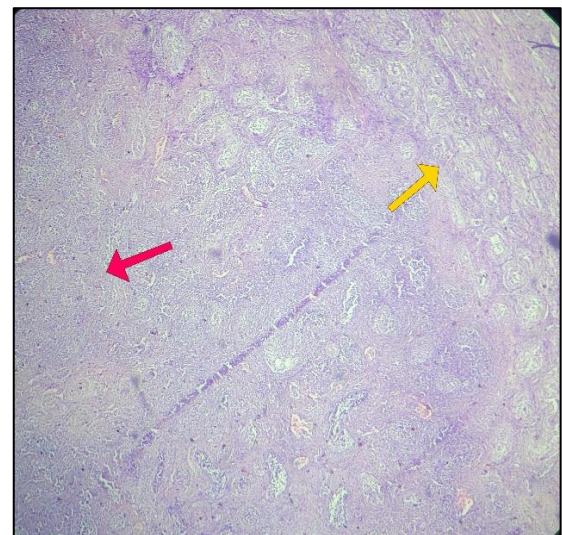
**Figure 3: Filarial nematode seen in testis (yellow arrow), H&E stain, 40X magnification**



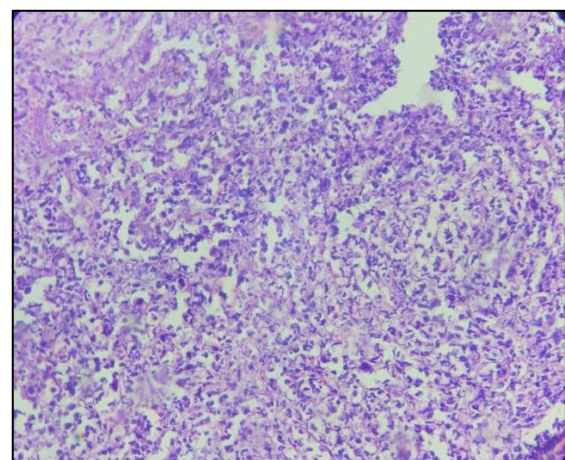
**Figure 4: Low power view of filarial nematode (yellow arrow), H&E stain, 100X magnification**



**Figure 5: Paired uteri with partially calcifying microfilariae (yellow arrow), H&E stain, 400X magnification**



**Figure 6: Degenerated inflammatory cells in testis (red arrow) with seminiferous tubules (yellow arrow), H&E stain, 40X magnification**



**Figure 7: The entire picture shows inflammatory cells predominantly neutrophils and eosinophils, with necrotic debris, H&E stain, 100X magnification**

## DISCUSSION

In 600 BC, Susruta is reported in medical literature to have identified the clinical presentation of elephantiasis and named it elephantiasis arabicum [9]. In India, filariasis is a prevalent parasitic infestation. The greatest rates of infection in our country are seen in Uttar Pradesh, Bihar, Jharkhand, Andhra Pradesh, Orissa, Tamil Nadu, Kerala, and Gujarat [10].

There are eight species of microfilaria; *W. bancrofti*, *B. malayi*, and *B. timori* are the ones that cause lymphatic filariasis. The first two of them have a nighttime periodicity and are common in India. The entire picture shows inflammatory cells, predominantly neutrophils and eosinophils, with necrotic debris. Usually affecting the lymphatic system, the parasites induce fever, lymphangitis, lymphadenitis, and

lymphedema, which can lead to elephantiasis. In addition, they can result in chyluria, epididymo-orchitis, hydrocele, etc. Aspiration cytology has been used in a number of publications to identify the presence of microfilaria in a variety of locations, including the spermatic cord, epididymis, testis, retroperitoneum, soft tissue, and breast [2, 3, 11-13].

The document of several case studies and best practice standards is represented in the suggestions below for healthcare professionals who treat individuals who have an unusual testicular tumour, scrotal edema, as well as relevant travel history (Table 1). Peripheral eosinophilia is another symptom of filarial illness that might arise from a systemic reaction. However, because of the blood-testis barrier, the testicle has immunological privilege, and localised parasite infections could not result in systemic inflammation [14].

**Table 1: Guidelines for examination in suspected filarial infestation**

Guidelines for examination
Use testicular ultrasonography to check for signs of a "filarial dance" and rule out testicular neoplasm.
A fine needle aspiration biopsy should not be carried out.
Giemsa staining and examining a thick smear of peripheral blood that was drawn late at night for microfilariae
Using immunochromatographic methods, ELISA testing, and CFA assays
Card-based assays that can qualitatively describe the burden of filarial illness
Serologic testing for anti-filarial antibodies

Two instances that resembled our case were discovered in 2017 and 2018 [14, 15]. In 2008, another instance of filarial granuloma imitating a testicular tumour was reported [8]. Filarial orchitis may mimic malignant testicular tumours; therefore, a differential diagnosis of filariasis must be kept in mind while dealing with testicular swellings in endemic areas [15]. The preferred medication is considered to be diethylcarbamazine (DEC). The illness frequently results in unilateral orchiectomy as it mimics clinical suspicion for malignancy. Testicular-sparing surgery may be a helpful tool in the therapeutic strategy for these individuals, even if criteria for surgical intervention have not yet been established [8].

## CONCLUSION

It is imperative for clinicians in endemic regions to consider parasitic infestation as a potential differential diagnosis, particularly in cases involving hydrocele, hematocele, or epididymo-orchitis. Proper diagnostic protocols and heightened awareness can lead to more accurate and timely interventions for affected individuals. A comprehensive understanding of the local disease landscape is essential for effective patient care and management.

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