

# Hydrocele: Study in 120 adivasi patients in tribal area of Dhule region

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## Abstract

This is a clinical study of 120 patients of hydrocele, operated at Shri Bhausaheb Hire Government Medical College and Civil Hospital, Dhule during January to December 2012. In this study we come to a conclusion of increase number of patient of filarial infection as compared with primary primary hydrocele (data given from textbook). In adivasi area from Dhule District, the infections like Malaria, Filariasis are common because of presence of mosquito, filarial infection also provided by histopathological examination also. Data shows comparison of the disease. The total number of patients were 155 out of which 128 got operated. 120 cases were of hydrocele and 8 cases were of other diseases not related to hydrocele. Out of 120 patients, we came across majority cases of secondary hydrocele as compared to primary hydrocele, these includes infections like pyocele, hemocele, tuberculosis etc.

**Keywords:** brugia malayi, elephantiasis, eosinophilia, filariasis, lymphatic filariasis, pyocele, vaginal hydrocele, wuchereria bancrofti.

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## INTRODUCTION

Wuchereria bancrofti is the most common filarial parasite in human.<sup>1</sup> There are an estimated 82 million infected individuals and more than 900 million people at risk of infection. It is worldwide in distribution but occurs mainly in tropics. Wuchereria bancrofti is exclusively a human parasite with no known animal reservoir. In endemic area exposure begins early in childhood and continues throughout life. A wide variety of culine and anopheline mosquito vectors can transmit infection; infective larvae are deposited in the skin and crawl into the bite wound. The time required for adult to develop, mate and release microfilaria detectable in the circulation is 9 to 12 months or longer, and infection persists for 6 to

8 years.<sup>2</sup> In endemic area infections occurs without evidence disease: individual commonly remains asymptomatic despite detectable microfilaremia. Pathological condition results from continual lymphatic irritation and is strongly associated with variable host immunologic responsiveness between early and chronic infection.<sup>3</sup> Generally lymphatic disease can be divided into inflammatory manifestations and obstructive manifestations associated with fibrosis and skin thickening. Cases with inflammatory and obstructive lymphatic disease generally represent a small percentage of the infected community. Elephantiasis generally manifests in young adults after chronic infections and repeated exposure to filarial parasite. Upper and lower limbs and genitals can be affected with massive proliferation of lymphatic tissue. Clinical signs of Elephantiasis are usually associated with delayed hypersensitivity responses to filarial antigens : specific Ig E, LgG2 and IgG4 and filarial antibodies and eosinophilia are also present.<sup>10</sup> Inadequate immunity against infective larvae permits continual invasion of new worms and promote pathological condition.

Tropical pulmonary eosinophilia is asthma like disorder found in endemic area, generally among men. It is also an occult filariasis associated with marked

immunologic hypersensitiveness to microfilaria antigen. Massive accumulation of activated eosinophils in the lung results in a chronic obstructive or restrictive pulmonary syndrome. In pediatrics the drug of choice for lymphatic filariasis in DEC, this kills blood stage microfilariae. It has a short half life and very low toxicity in humans.<sup>4</sup>

A hydrocele testis is the accumulation of fluids around a testicle, and is fairly common. It may be treated surgically. A hydrocele testis is due to fluid secreted from a remnant piece of peritoneum wrapped around the testis called the tunica vaginalis. It can also be as a result of cancer, trauma (such as a hernia), or orchitis.<sup>9</sup> It can also be the result of a plugged inguinal lymphatic system caused by repeated chronic infection of Wucheria bancrofti or Brugia malayi, two mosquito-borne parasites of Africa and S.E. Asia, respectively. As such the condition would be a part of more diffuse sequelae commonly referred to as elephantiasis.<sup>5</sup>

Hydrocele can be produced by 4 ways<sup>6</sup> –

- 1) By excessive production of the fluid within the sac (secondary hydrocele)
- 2) By defective absorption of hydrocele fluid by tunica vaginalis (most common variety of the primary hydrocele)
- 3) By interference with the drainage of the fluid by the lymphatic vessels of the cord.
- 4) By connection with peritoneal cavity, as in congenital variety.

## MATERIAL AND METHODS

The study was conducted at Department of Surgery Shri Bhausaheb Hire Government Medical College and Civil Hospital Dhule during January to December 2012. The patients were from tribal area of the Dhule were investigated and treated in the surgery department. The hydrocele camps were arranged across the Dhule District regions at various places. The line listing of the patients were prepared at camp site. The special referral cards are given to the patient for further investigation and treatment in our hospital. The clinical examination of the patients by specialist were followed in the various department. Special designed proforma was prepared which includes the clinical history and laboratory Investigations. The investigator himself fills up

the special design Performa. The pre-operated and post operated care was taken and noted in the performa. A clinical study of 120 adivasi patients of hydrocele carried out in our hospital.

Some important terms and procedure during study period.

- 1) **Primary Hydrocele** – The hydrocele which have idiopathic origin.
- 2) **Secondary Hydrocele** - Hydrocele due to the disease of testis i.e. acute or/r chronic.
- 3) **Subtotal excision of the sac** – When the hydrocele is long standing and the sac is thickened.
- 4) **Lords operation** – A series of 10-12 catgut or dexton suture are woven radically from cut edge of the tunica to the reflection of the tunica from the testis and epididymis. When these are tied the whole tunica is bunched into ‘ruff’ at the edge of the testis.
- 5) **Jaboluleys Operation** : Eversion of the sac.

## Preparation of Blood Smear for Microfilarial Microscopy –

**I Step** - Select third/ring finger of the left hand of the patient. With palm upward hold with left hand between thumb and forefinger at the first phalangeal joint. Wipe fingertip with swab dipped in spirit or anti septic solution. Allow the finger tip to dry.

**II Step** – Hold the lancet in right hand and prick the finger using quick rolling action. Allow blood drop to ooze out.

**III Step** – Take a clean slide. Apply gentle pressure; take 2-3 big drops of the blood in the centre of the glass slide.

**IV Step** – Take another clean slide with smooth edges and use it as a spreader. Using the corner of the spreader, quickly join the larger drops of blood and spread to make an oval thick film (20 mm wide and 30 mm long). Put the slide number on glass slide with glass marking pencil. Allow it to dry flat.

**V Step** – Place the slide in a clean slide box or wrap the dry slide in a clean paper.

**VI Step** – On the following day, re-write the same slide number with lead pencil in the middle of thick smear before dehaemoglobinisation.

## RESULTS

**Table 1:** The Age incidence from 3 years to 65 years

Sr.No.	Age in Year	Total
1	0 – 5	1 (0.02%)
2	5-15	10 (8.33%)
3	15-45	85 (70.83%)
4	45-60	21(17.5%)
5	>60	3 (2.5%)
<b>TOTAL</b>		<b>120</b>

**Table 2:** Types of the Hydrocele

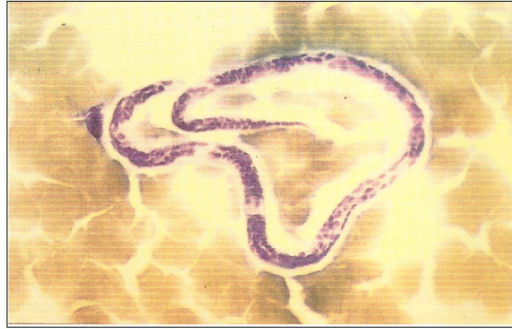
Total No. of patients	Primary Hydrocele	Secondary Hydrocele	Other
155	40	80	35

**Table 3:**Types of surgeries

Jabouleys operation	Lord's operation	Subtotal excision of Sac
28	12	80

**Table 4:** Peripheral blood smear For Microfilaria (Midnight sample collection)

No. of Patients	Peripheral blood smear Positive for Microfilaria	Peripheral blood smear Negative for Microfilaria
120	14 (11.66%)	106 (88.34%)



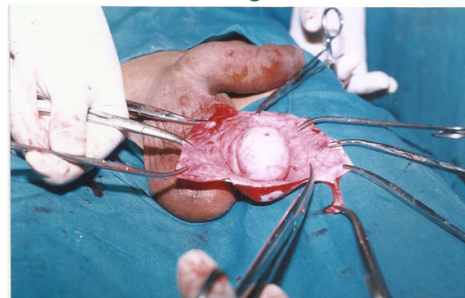
**Figure 1**



**Figure 2**



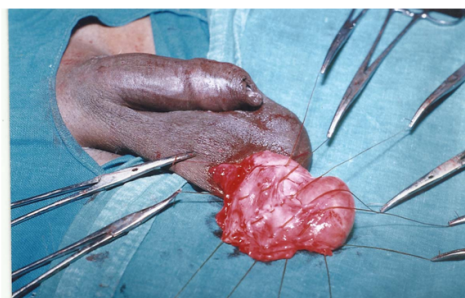
**Figure 3**



**Figure 4**



**Figure 5**



**Figure 6**

**Figure 1:** Wuchereria bancrofti under microscope.

**Figure 2:** Wuchereria bancrofti in blood

**Figure 3:** small secondary hydrocele

**Figure 4:** Another patient.sac opened, thick sac so subtotal excision of sac done for secondary hydrocele.

**Figure 5:** Another patient : jabouleys operation:eversion of sac done for primary vaginal hydrocele.

**Figure 6:** Lords placation done for small primary vaginal hydrocele.

## DISCUSSION

Multidiagnostic camps were arranged at Navapur by Civil Surgeon, Dhule. The author and other team were deployed for the multidiagnostic camps. In that camps, almost 350 cases of inguinoscrotal swelling were diagnosed. Out of these 155 cases were diagnosed to manage surgically. Out of 155 cases 128 got operated at Govt. Medical College, Dhule. Out of these, 120 cases were of hydrocele and 8 cases of other disease not related to hydrocele. Out of 120 operated cases, 14 patients were having positive night peripheral blood smear for micro filarial parasite (11.66%) and 106 patients were negative for micro filarial parasite.<sup>4</sup> The youngest patient was 3 years old while oldest was 72 years old. Majority of the bulk of patient were from 15-44 years of age (70.83%). Majority of the cases appeared in the middle age or elderly male.<sup>6</sup> Early childhood patients were uncommon. Clinically we suspect secondary hydrocele in 80 patients and primary hydrocele in 40 cases. The patient having other cause for inguinoscrotal swelling were 35.<sup>9</sup> We excluded these cases in present study. In secondary hydrocele the sac is thick, hydrocele is long standing so we do subtotal excision of sac.<sup>6</sup> In primary hydrocele the procedure of choice is lorch operation or Jaboulay's operation. In primary hydrocele too, sac excision is done in this study to avoid recurrence and other complications, as we suspect the Dhule Region is endemic for filariasis. In primary hydrocele, typically hydrocele fluid was found which was amber coloured, if analyzed we get specific gravity of 1.022 to 1.024. It contains water inorganic salts, 6% albumin and some quantity of fibrinogen.<sup>6</sup> Major manifestations of clinical disease are lymphadenitis in acute phase, hydrocele and elephantiasis of lower limb in chronic phase and involvement of lower limb in elephantiasis phase.<sup>1</sup> In our study all patients were in chronic phase and inguinoscrotal swelling was the complaint of all patients (100%). Not a single patient was having lower limb lymphadenitis in this study. By Sarma R.V.S.N *et al*<sup>1</sup>, also noted that within the chronic phase, genital involvement was more than of lower limbs. In our study hydrocele was present in all 120 patients; Adisak

Bhumiratna *et al*<sup>2</sup> in his study noted 4.6% male hydrocele in cross sectional community based study.

## CONCLUSIONS

- 1) This study reveals that the Dhule Region could be endemic region for filarial infections.
- 2) The subtotal excision of the Sac (as we do in second hydrocele) if you do the same procedure in primary hydrocele, it may help in the curing of this complication (Hydrocele)

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