

## ORIGINAL RESEARCH

# HYDROCELE MANAGEMENT IN A FILARIA ENDEMIC AREA

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### ABSTRACT:

Lymphatic filariasis (LF), a leading cause of permanent and long-term disability, affects 120 million people globally. Hydrocele, one of the chronic manifestations of LF among 27 million people worldwide, causes economic and psychological burdens on patients and their families. The present study explores and describes the impact of hydrocele on sexual and marital life as well as on marriage ability of hydrocele patients from rural areas of Bhuj, Gujarat, an western state of India. Out of 1000 patients operated in that year, 155 were of hydrocele (12.33%). 155 patient records were analyzed. 10 patients were excluded due to presence of concurrent hernia. 145 patients were treated for hydrocele and 6 patients had pyocele. Table.1 details the characteristics of the patients and Table 2 mentions the type of surgery, complications and follow up findings. We may conclude that Filarial Hydrocele is a physically and mentally debilitating disease. Surgery remains the mainstay of treatment and a simple eversion of the sac can bring succour to the patient. Jaboulay's procedure is a safe and effective treatment for filarial hydrocele.

Keywords: Hydrocele, Filariasis, Management

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## INTRODUCTION

Lymphatic filariasis (LF), the second leading cause of permanent and long-term disability, affects 120 million people globally.<sup>1</sup> It is a mosquito-borne parasitic disease caused by *Wuchereria bancrofti*, which accounts for approximately 90% of all LF cases, followed by *Brugia malayi* and *Brugia timoti*.<sup>2</sup> India contributes about 40% of the total global burden of LF. In India, a total of 554 million people are at risk of infection, and there are approximately 21 million people with symptomatic LF and 27 million asymptomatic microfilaria carriers. The manifestations of disease are mostly irreversible and a cause of socioeconomic and psychological problems for patients and often their families. Hydrocele, an accumulation of fluid in the tunica vaginalis in the scrotum that causes it to swell, is one

of the chronic manifestations of LF among men. There are 26.79 million cases of hydrocele worldwide and 48% of these cases are in India. However, little information is available from India, specifically on disability due to hydrocele, except for a few studies on productivity in children, the main cause of hydrocele is a congenital patent processus vaginalis, which allows the transfer of fluid between the peritoneal and tunical cavities. Such hydroceles usually resolve by 18–24 months.<sup>3</sup> 6 adult hydroceles are generally acquired and, in the majority of cases, idiopathic in origin. Both etiologies are possible in adolescents; the hydrocele can be caused by a patent processus vaginalis that has remained silent until puberty, or can appear de novo. a history of varicocele or inguinal

surgery can also cause the development of a hydrocele.<sup>4</sup>

In a recent publication 'Global programme to eliminate Lymphatic filariasis' World Health Organization (WHO) suggested "The choice of method depends mainly on the practice of the surgical service in the district."<sup>5</sup> In this study we aim to identify the preferred procedure of surgeons for hydrocele in Bhuj district of Gujarat, an endemic area, and assess its outcome.

### MATERIAL & METHOD:

The case records of all patients operated for hydrocele at the Gujarat Adani Institute of Medical Science, Bhuj from January 2010 to January 2011 i.e. one year, were analyzed and data collected. Patients with concomitant hernia on the same side were excluded from the study. These patients were prospectively followed up.

### RESULTS:

Out of 1000 patients operated in that year, 155 were of hydrocele (15.55%). 155 patient records were analyzed. 10 patients were excluded due to presence of concurrent hernia. 140 patients were treated for hydrocele and 5 patients had pyocele. Table.1 details the characteristics of the patients and Table 2. mentions the type of surgery, complications and follow up findings. The youngest patient was aged 18 years and the oldest was 76 years old. Almost all cases had straw coloured hydrocele fluid, only two patients had milky fluid suggestive of chylocele. The average amount of fluid was 500cc with a range from 200 to 1500cc. All patients were admitted and the duration of stay ranged from 7 days to 14 days. Most of the patients received spinal anaesthesia with only 7 patients being operated under local anaesthesia due to fitness issues. All patients received preoperative intravenous antibiotic which was continued for 3 days postoperatively. Injectable analgesic was given for 2 to 3 days postoperatively. Drain was placed in all patients and removed on third postoperative day and wound was kept exposed till stitch removal on 8th to 10th postoperative day. All patients though operated upon by different surgeons had undergone eversion of the hydrocele sac with or without partial excision. The 10 patients with pyocele underwent orchidectomy. The follow up period ranged from 9 months to 1.5 years.

**Table 1: Characteristics of Patients**

<b>No. of Men with Hydrocele</b>	<b>140</b>
<b>No. of Bilateral</b>	40
<b>No. of Unilateral</b>	100
<b>No. on Right</b>	42
<b>No. on Left</b>	58
<b>Total No. of Hydroceles</b>	145
<b>Total No. with straw colored fluid</b>	130

**Table 2: Type of surgery, complications and follow up**

<b>No. eversion of sac with partial excision</b>	<b>34</b>
<b>No. eversion of sac with excision</b>	111
<b>Postoperative haematoma</b>	0
<b>Postoperative wound infection</b>	10
<b>No. of lymph scrotum</b>	0

### DISCUSSION

Abnormal collection of serous fluid between the visceral and parietal layers of the tunica vaginalis is termed as hydrocele. It is the commonest reason for painless scrotal swelling and affects about 1% of men, mostly above forty years of age, and 4.7% neonates.<sup>6</sup> A hydrocele is an abnormal collection of fluid, usually serous, in the sac of the tunica vaginalis. It represents the most common complication after varicocele surgery<sup>7</sup>. It is common in newborn males. Most hydroceles in newborns are harmless and will resolve on their own by 12 months of age. The causes of hydroceles that develop in children are different from those in adults. The testicles initially develop in the abdomen. In most boys, they move down into the scrotum before birth. As they do this, some of the lining of the abdomen comes down as a sack containing the testicle. In most boys, the sack's connection to the abdomen is closed at birth, but in some boys it remains open. When it is open fluid produced in the abdomen can then freely move into the scrotum and back.<sup>8</sup>

Filariasis has been a major public health problem in India. The disease was recorded in India as early as 6th century B.C. by the famous Indian physician, Susruta in his book 'Susruta Samhita'. National Filaria Control Programme (NFPCP) was launched in the country in 1955 with the objective of delimiting the problem and to undertake control measures in endemic areas.<sup>9</sup> The manifold increase in filariasis during last four decades reflects failure of filariasis control programs. Currently there may be up to 31

million microfilaraemics, 23 million cases of symptomatic filariasis, and about 473 million individuals potentially at risk of infection in the country. Lymphatic filariasis (LF) is a major impediment to socioeconomic development (estimated loss \$1 billion per year) and is responsible for immense psychosocial suffering among the affected.<sup>9</sup>

Men with LF may develop hydroceles even after all immunological markers for active infection have resolved.<sup>10</sup> Unless otherwise proven all hydroceles in *W.bancrofti* endemic areas are to be considered as of filarial origin. Operations are many but which is best and best for filarial hydrocele? Our study seems to go in favour of the Jaboulay's procedure unanimously with all the surgeons, 15 surgeons with experience ranging from 35 yrs to recently graduated, doing the same procedure. Lymphatic filariasis is a parasitic disease with a lot of morbidity and disability to its credit. India leads the rest of the world in its endemicity with nearly 40% cases occurring in India.<sup>11</sup> In endemic areas upto 40% population is affected, however in infected men the incidence of hydrocele approaches 100%.

The Jaboulay's procedure i.e. eversion of the sac with or without partial excision of the sac has a higher recurrence rate as per their study. However, other studies show good results with the procedure.<sup>12</sup> Our study too shows only one recurrence and incidence of lymph scrotum was seen. The World Health Organisation (WHO) in its 2002 guideline manual suggested 'complete excision of the sac' for filarial hydrocele and in a subsequent publication leaves the choice of method on the surgeons preference. The choice of procedure depends on surgeon and patient factors with the safety and simplicity of the procedure going hand in hand with its efficacy, size of hydrocele, recurrence rate, complications etc. So far no clear consensus has emerged. Our study shows a surgeon preference for eversion of the sac at the District Hospital. The eversion technique is a simpler procedure with minimal dissection, minimal bleeding and wider acceptance whereas complete excision requires more meticulous haemostasis and may prolong the surgery.<sup>13</sup> A prospective comparison study of the different surgical techniques for hydrocele with a longer period of follow up is necessary to bring in a consensus.

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## CONCLUSION:

Filarial Hydrocele is a physically and mentally debilitating disease. Surgery remains the mainstay of treatment and a simple eversion of the sac can bring succour to the patient. Jaboulay's procedure is a safe and effective treatment for filarial hydrocele.

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**Conflict of interest:** None declared