



RESEARCH ARTICLE

**PREVALANCE OF OCCULT FILARIASIS AMONG PATIENTS ATTENDING THE
OUTPATIENT DEPARTMENT OF RAJA MIRASUDAR HOSPITAL, THANJAVUR,
TAMILNADU, INDIA**

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ABSTRACT

Prevalence of occult filariasis was studied among the patients attending the outpatient department (OPD) of Raja Mirasudar Hospital, Thanjavur, an endemic area for filariasis in Tamil Nadu using the Sevafilacheck test system for detection of filarial antibody against a purified microfilarial excretory secretary antigen (ES) fraction.

The common clinical presentations of positive patients before Diethylcarbamazine (DEC) treatment were analysed. A total of 34 patients (15.5%) out of 220 showed filarial antibody in their serum, with arthritis (52.9%), tropical pulmonary eosinophilia (23.5%), joint pain-knee (17.6%) generalized myalgia and low back pain (5.9%) as common symptoms. All the 34 patients positive for filarial antibody were treated with DEC (6mg/kg body weight/day for 21 days each month for three months). The patients so treated showed a dramatic clinical relief.

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INTRODUCTION

Lymphatic filariasis is a major vector – borne disease problem in many developing countries. About 119 million people in 73 countries are infected; 40% in India alone (Michael et al., 1996). In India 419.85 million people (National Institute of Communicable Diseases / National Anti malaria Programme, 1996) and nearly half of the country's population are at risk, while 27.64 million people are microfilaria (mf) carriers and 20.81 million people have one or other form of disease manifestation (Sunitha Patel et al.,2000). Human lymphatic filariasis has a wide spectrum of clinical manifestations ranging from asymptomatic and amicrofilaraemic to individuals with clinical symptoms like hydrocoele, elephantiasis who may or may not have microfilaraemia and occult filarial infections without any classical symptoms. The term occult filariasis refers to filarial infections in which the classical manifestations are not present and microfilariae are not found in the blood, although they may exist in the internal organs or tissues (Subramania Sivam et al., 1994).

Millions of people suffer with occult filarial infection in endemic areas without diagnosis (Harinath et al., 1999). Occult clinical cases contribute a considerable amount of morbidity in India and other tropical countries where lymphatic filariasis continues to be a major public health problem.

It is Possible that in an endemic area occult forms of filarial infections account for several other clinical entities (World Health Organization ,1984)) such as tropical pulmonary eosinophilia (Ottesan et al.,1979), acute glomerulonephritis (Chugh et al.,1978), endomyocardial fibrosis (Rao, and Kumar, 1982), arthritis (Ismail and Nagaratnam, 1973), tenosynovitis, retroperitoneal lymphadenopathies (acute abdomen) and acute conjunctivitis (World Health Organization,1984). Accurate diagnosis of occult filarial infections is a major problem for both individual clinicians and coordinators of filariasis control programmes as the conventional methods have no role in detecting these infections. Although several studies have been carried out to measure the quantum of transmission of lymphatic filariasis in endemic areas like Thanjavur district, no focus has been given to detect a microfilaraemic cases with occult filarial infections

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by varied clinical presentations. Hence this study was undertaken to assess the prevalence of occult filariasis among patients attending the outpatients' department (OPD) of Raja Mirasudar Hospital (District Headquarters Hospital) Thanjavur.

MATERIALS AND METHODS

Patients with non-specific symptoms like wheezing, persistent dry cough especially nocturnal cough, joint pain (knee), and arthritis were selected for the study. All the patients were initially screened by conventional night blood smear examination. All the identified amicrofilaraemic individuals were subjected to immunodiagnosis for confirming the filarial aetiology. Three ml of intravenous blood samples were collected. The sera were preserved at 4° C and analysed by Sevaflaccheck test, an indirect ELISA based diagnostic test developed by the Mahatma Gandhi Institute of Medical Sciences, Sevagram for detection of filarial antibody against a purified microfilarial excretory secretory (ES) antigen fraction. In indirect ELISA microfilarial antigen is used for the detection of filarial IgG antibodies in human sera. The mf antigen coated cellulose acetate membrane sticks are incubated with filarial sera followed by antihuman IgG Penicillinase conjugate. When the sticks are finally incubated with blue coloured starch iodine-Penicillin substrate, the disappearance of the colour earlier than control indicates the presence of filarial antibody (Harinath et al. 1996).

RESULTS AND DISCUSSION

Total of 220 samples were collected and analysed for the prevalence of filarial antibody. 50.9% of the total samples collected were from males and 49.1% from females. 34 samples were found positive with an overall positivity of 15.5%. The positivity was distributed equally between males and females (50%) (Table .1)

Table 1 Age and Sex distribution of the cases screened for filarial aetiology

Age Group (Years)	Number of sera samples collected		Number positive	
	Male	Female	Male	Female
0-10	3	2	--	1
11-20	16	10	--	2
21-30	32	38	5	9
31-40	24	35	4	3
41-50	18	11	3	1
51-60	11	10	2	1
61 +	8	2	3	--
Total	112 (50.9%)	108 (49.1%)	17 (50%)	17 (50%)

Figures in parenthesis denote percentage.

Table.2 Age group distribution of occult filarial infection

Age Group (Yrs)	Number of sera tested	Number Positive	% of antibody prevalence
0-10	5	1	2.9
11-20	26	2	5.9
21-30	70	14	41.2
31-40	59	7	20.6
41-50	29	4	11.8
51-60	21	3	8.8
61 +	10	3	8.8
Total	220	34	15.5

The overall positivity was 15.5%. The highest percentage was in the age group 21-30 years with 41.2% followed by 20.6% in the 31-40 age group, 11.8% in the 41-50 age group, 8.8% each in 51-60 years and 61+ age group and 5.9% in the 11-20 age group. The least percentage of positivity (2.9%) was found in 0-10 age group.

Analysis of the symptoms among the patients declared positive for occult filariasis shows that out of 34 positives, 18 patients had arthritis, 8 patients had tropical pulmonary eosinophilia, 6 patients had joint pain (knee), and 2 had generalized myalgia and low back pain.

Among the commonly presenting symptoms of occult filariasis the following symptoms had more frequency among the patients and dominated the other symptoms (Table 3).

Table 3 Commonly presenting symptoms

Sl.No	Symptoms	No. of Patients
1	Arthritis	18(52.9)
2	Tropical pulmonary eosionphilia	8(23.5)
3	Joint pain(knee)	6(17.6)
4	Generalized myalgia &Low back pain	2 (5.9)

Occult filariasis is believed to result from a hypersensitivity reaction to filarial antigen derived from microfilaria (Subramania Sivam, 1994). The diagnosis of occult filariasis is difficult, as microfilariae cannot be detected in the night blood smear. In an endemic area such cases could be diagnosed only by the detection of filarial antibody in the samples collected. Our basic objective of the study is to emphasize the prevalence of occult filarial infections in endemic areas and also the common clinical presentations associated with these infections. All the 220 study subjects had neither microfilaria in the peripheral blood nor reported to have any typical clinical presentations of filariasis. However, 34 patients with non-specific symptoms of filariasis showed filarial antibody. The results of the study reveals that a certain proportion of the community in endemic areas are suffering from the non-specific symptoms like arthritis, tropical pulmonary eosinophilia, joint pain (knee), and generalized myalgia, and. Low backache.

Arthritis has long been recognized as a possible manifestation of filariasis (Rao, and Kumar, 1982; Ismail and Nagaratnam, 1973; Manson Bahr,1966 and Maitland, 1898). In this study 52.9% of patients with occult infection had arthritis. All the patients had swelling and pain in joints. Among occult filarial presentations, arthritis, and joint pain are the well-recognized clinical symptoms whereas in earlier studies tropical pulmonary eosinophilia (TPE) and arthritis were the well-recognized clinical entities (Ismail and Dissanayake, 1981and Harinath, 1984). Tropical pulmonary eosinophilia occurs only in a small percentage of patients (mostly males) with Bancroftian filariasis (Magnussen, 1905 and Dreyer, 1996) and non-filarial helminthes can cause a similar clinical syndrome (Rocha, 1995). Filarial TPE is a syndrome clinically characterized by symptoms of bronchial asthma with paroxysmal nocturnal cough and anorexia (Dreyer, 1999). In this study 23.5% of patients had nocturnal cough and symptoms of bronchial asthma who were considered as TPE of filarial origin.

All the 34 cases were treated with DEC (6mg/kg body weight/day) for 21 days in a month for a period of three months and the treated patients showed clinical relief. The present study clearly indicates the prevalence of occult filarial infection in the study area, which had not been documented earlier. In endemic area filarial aetiology is not generally considered for provisional diagnosis in patients who present with non-specific symptoms of filarial infection. Under such circumstances awareness among the clinicians pertaining to the non-specific clinical presentations of occult filarial infection should be generated for suspecting such cases and subsequent management.

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