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Case Report

"Chyluria" A Rare Isolated Manifestation of Filariasis

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Abstract: Chyluria is an uncommon condition characterized by passage of milky urine. Lymphatic filariasis is the most common cause of chyluria. Here we are reporting a case of chronic chyluria in an adult married female, diagnosed for filarial infection by W. bancrofti and treated medically with resolution of symptoms.
Keywords: Chyluria, Filariasis, Wuchereria Bancrofti

INTRODUCTION

Chyluria is a rare clinical symptom due to passage of milky urine. Chyluria is a urological manifestation of abnormal lymphatic system due to retrograde or lateral flow of lymph from the lymphatics of the kidney, ureter or bladder allowing chylous material to be discharged into the urinary collecting system. Milky appearance of urine is due to presence of chyle composed of albumin, emulsified fat and fibrin [1]. Filariasis caused by W. bancrofti is an easily treatable cause for chyluria. Chyluria is a manifestation of chronic stage of filarial disease and is seen in 1-2% of patients of filariasis after 10-20 years of infection [2]. However there are many non-parasitic causes of chyluria that have been found. Here we are reporting a case of chronic chyluria in an adult female.

CASE DESCRIPTION

A 20 year old married homemaker, presented with a history of passing milky urine of 3 years duration. She noticed passing of milky urine was greater in the morning. She also had history of generalized weakness; however she did not have any history suggestive of dysuria, hematuria, lower abdominal pain, generalized pruritus, fever or loss of appetite. She had normal regular menstrual cycles. On examination the patient was poorly nourished and systemic examination was unremarkable. There were no palpable lymph nodes. On investigation, haemogram was normal except for elevated absolute eosinophil count of 1314 cells/mm^3. Her other blood investigations were normal. Mantoux test was negative. Early morning urine sample was milky white and turbid (Figure 1). Urine routine revealed proteinuria +++ and on microscopy there were no pus cells. Urine was negative for AFB stain and urine culture did not show any growth. Urinary triglyceride level was 400mg/dl and we also observed clearance of milky white colour of urine on adding equal amount of Ether and mixing vigorously (Figure 2). Midnight peripheral smear and DEC provocation test showed microfilariae having uniform tapering caudal end with no terminal nuclei suggestive of W. bancrofti (Figure 3). Radiological investigations like chest X-ray, ultra sound abdomen and CT KUB with contrast were within normal limit. Since history and investigations were suggestive of filariasis, patient was advised a fat free diet and she was given Diethylcarbamazine (DEC) at a dose of 6mg/kg in 3 divided doses along with Albendazole for 21 days. Patient was asked to follow up after 2 weeks. At 2 weeks the patient was asymptomatic and had clear urine. She also had fall in blood absolute eosinophil count and urine triglyceride levels.

Fig-1: Early morning milky-white and turbid urine

Fig-2: Ether test clearing urine

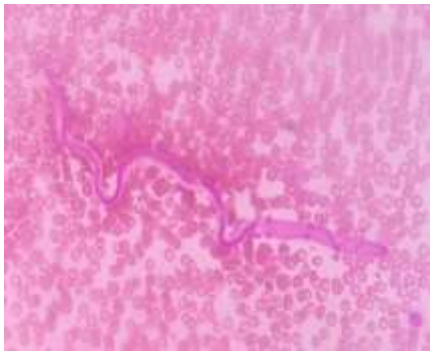

Fig-3: W. bancrofti having uniform tapering caudal end and absent terminal nuclei

DISCUSSION

In India**,** filariasis is a major health problem and is caused by Wuchereria bancrofti in 90% of patients. Chyluria is a state of chronic lymphourinary reflux via a fistulous communication secondary to lymphatic stasis caused by obstruction of lymphatic flow. Chyluria is seen in 1-2% of patients of filariasis after 10-20 years of infection [2, 3]. Chyluria is associated with abnormal retrograde or lateral flow of lymph from the intestinal lymphatics to lymphatics of the kidney, ureter or bladder allowing chylous material to be discharged into the urinary collecting system [1]. The renal lymphatics follow the renal vein and end lateral aortic glands. Efferents from here will drain into lumbar trunks. The intestinal trunks receive lymph from stomach, intestine, pancreas, spleen and liver. The lymph from lumbar and intestinal trunks drains into the cisterna chyli or thoracic duct. Pathological obstruction and/or insufficiency of the valvular system of lymphatic channels lead to retrograde flow to lumbar lymph glands draining into renal lymphatics. There will be short circuiting of chyle drainage from intestinal lacteals to renal lymphatics [4]. Causes of chyluria are etiologically classified into parasitic and non parasitic causes. Parasitic causes are mainly infection by W. bancrofti, Echinococcus, Bilhariziasis, Ankylostomiasis. Lymphangioma of urinary tract, megha lymphatic and urethral/ vesical fistula, retroperitoneal lymphangiectasia are common non-parasitic causes.

In chyluria of filarial origin, passage of milky urine is observed among 70% of patients. Weight loss, low back ache, fever with chills and hydrocele are other associated symptoms. Duration of symptoms may be varied as seen our case. Patients can present even 10 years after the infection or can present without overt manifestation of filariasis. Only 20% of patients may have documented filariasis. Clinically, the severity of the disease is graded into mild, moderate and severe chyluria. In chyluria, investigations are aimed to confirm the presence of chyle in urine. Urine analysis, Ether test, Methylene blue test and Sudan III test are initial test done to confirm chyluria. Urine triglyceride level has to be assessed in the morning sample and it is 100% specific for diagnosis of chyluria [5]. Demonstration of microfilaria in blood gives the conclusive and direct evidence of etiology of chyluria. DEC provocation and midnight peripheral smear examination is 80% efficacious in demonstration of microfilaria. Cystourethroscopy, retrograde pyelography and lymphangiography are done to localize site, caliber and number of fistulous communication. ELISA for filarial antigen helps in 89 -92% of patients, has 85% specificity and 95% sensitivity.

Chyluria is a debilitating but not life threatening condition. In patients with chyluria, medical treatment should be tried initially, which includes fat restricted diet, antifilarials like DEC 6mg/kg in 3 divided doses for 10-14 days. A single dose of Ivermectin 400mg/kg and Albendazole 400mg along with DEC for 14 days can also be given [6]. Patients are advised to take high protein, hematinic, multivitamins and green leafy vegetables. Abdominal binders are used during acute attacks of chyluria. Patients are reassessed after 3 weeks. If symptoms persist after 3 weeks one should plan for sclerotherapy. Sclerotherapy includes instillation of renal pelvis with chemicals: 0.1% - 3% silver nitrate, 0.2% povidone iodine, 10% - 25% potassium iodide or combination therapy using ureteric catheter after localizing site on cystoscopy. These agents mainly cause chemical lymphangitis and relief of chyluria. This procedure can be repeated after 6 - 8weeks if symptoms persists [7]. Surgical management includes lymphovenous disconnections in patients with severe chyluria if they fail to respond to conservative management and failure of sclerotherapy [8]. About 20% of chyluria patients have been found to require surgery [9]. Though our patient presented with 3 years of symptoms, she responded to conservative and medical line of management.

CONCLUSION

Though numerous etiological factors for chyluria are identified, we should always think of common causes like filariasis for chyluria. DEC provocation test has to be done to diagnose filariasis in

the absence of overt manifestations. Since a vast majority of these patients can be managed successfully with medical therapy, we can avoid invasive procedures and hospitalization of patients.

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