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Case Report

Microbiology Section

Dioctophymiasis: A Rare Case Report

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ABSTRACT

Dioctophyma renale commonly known as "giant kidney worm" is found in the kidney of carnivorous mammals. Human infestation is rare, but results in destruction of the kidneys. Very few cases have been reported worldwide. We are here reporting a case of Dioctophymiasis in a 35-year-old male patient who presented with retention of urine and subsequent passage of worm and blood in urine. The worm was confirmed as *Dioctophyma renale* based on its morphology and clinical presentation. This is a very rare case report and to best of our knowledge only two cases have been reported from India.

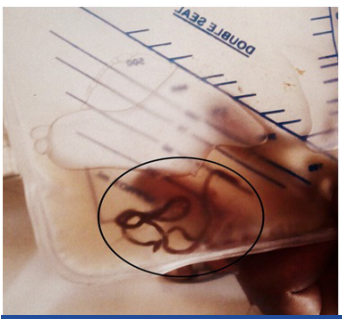
Keywords: Haematuria, Nephrectomy, Zoonotic

CASE REPORT

A 35-year-old male patient presented to the Emergency department of LLRM medical college, Meerut on 16/6/2015 with complains of retention of urine and fever for 2 days. At the time of admission his vitals were normal except tachycardia. General examination showed pallor while systemic examination was normal. The patient was a non vegetarian and of low socio economic status.

The patient was catheterized. His blood counts showed Total Leukocyte Count of 10,400cells/mm^3, Polymorphs-83%, Lymphocytes-13%, Eosinophils-03%, Monocytes-01%, Platelets:1.4 lacs/mm^3, ESR:24mm for first hour and Haemoglobin as 9.0 gm/dl. Biochemical profile was Na: 139 meq/l, K: 4.5 meq/l, Ca: 1.03meq/l, Fasting blood sugar: 200mg/dl, Total Protein:8.1 gm/dl, Albumin: 4.2 gm/dl, Globulin: 3.9gm/dl, Total bilirubin: 0.5 mg/dl, Direct bilirubin: 0.3 mg/dl, Indirect bilirubin: 0.2 mg/dl, SGOT: 41.0 IU/L, SGPT: 51.0 IU/L, ALP: 217.0 KA Unit, Serum urea: 37.0mg/dl and Serum creatinine: 0.90 mg/DL. Urine analysis revealed Albumin in traces, Sugar: ++, RBC: 10-12/hpf, Pus cells: Numerous, Epithelial cells: 2-3/hpf. HIV, HCV and HBsAg: Non Reactive.USG abdomen showed bilateral hydronephrosis.

The patient was started on IV fluids, antibiotics (Ceftriaxone and Metronidazole), Pantaprazole, antipyretic and an alkalizer. On day 2 following admission patient complaint of passage of worm [Table/Fig-1,2] along with haematuria in the urobag. The urine sample along with the worm was sent to Microbiology department for confirmatiom. The worm was confirmed to be a rare parasite *Dioctophyma renale* based on its morphology and clinical presentation. The worm was blood red in colour, approximately 30 cm in length, 3-4mm in diameter tapering at both ends [Table/Fig-2]. However, microscopic examination of the urine did not show eggs of the parasite. Even subsequent examination of urine for next three days did not reveal any eggs neither did the patient pass more worms.



[Table/Fig-1]: Urobag showing the worm. **[Table/Fig-2]:** The worm in the tray.

DISCUSSION

Dioctophyma renale (giant kidney worm) causing Dioctophymiasis a Zoonotic disease is one of the largest parasitic nematodes known [1]. The worm is mostly found in kidneys of flesh eating mammals like mink, dogs, wolves, etc [2]. Eggs are excreted in the urine. They develop into first stage larvae in about 4 weeks. On ingestion by aquatic oligochaetes (aquatic worm), the larvae hatch out of eggs in the intestine and after two months they metamorphose to the infective larvae. Infective larvae may be taken up by tadpoles or frogs or fish which serve as paratenic or transport hosts. Man acquires infection by ingestion of raw or inadequately cooked fish or frog containing infective larvae. The worm may remain alive for up to 5 years in the kidneys. It may cause obstruction, hydronephrosis and destruction of the renal parenchyma. Patient may present with renal colic and haematuria [3]. The treatment in complicated cases is limited to surgical removal of the affected kidney [4,5].

The worm is cylindrical, covered with an outer cuticular layer and is blood red in colour. The females may measure up to 103cm in length and have a diameter of 5-12mm. The males are 35cm long and 3-4mm in diameter. The male has a conspicuous, bell shaped copulatory bursa that lacks supporting rays or papillae [6]. The worm in our case was identified as male due to its morphological characteristics.

This nematode is apparently worldwide in distribution although rarely causes human infection. A Pub med search revealed only 23 cases worldwide of human infection with regions around Caspian Sea having highest incidence specifically Iran. Two case reports of human infection have been reported from India. While in case report by Agarwal R et al., *Dioctophyma renale* was an accidental finding [7], in the other case report by Venkatrajaiah N et al., patient presented with high grade fever and subsequent passage of worms and haematuria [8].

In our case reported here, the patient was non-vegetarian giving history of eating raw fish from the lake near his village. Eating raw fish can probably be the aetiology behind this case. Another risk factor was diabetes. The patient also complained of passage of such worms in the past. The patient was on symptomatic treatment but left the hospital against medical advice so could not be followed.

CONCLUSION

Human infection although rare can lead to serious complications, with Nephrectomy as the only treatment option. However, infection can be prevented by thorough cooking of fish, frogs and boiling of water. To best of our knowledge this is the third case report from India. This case highlights the fact that a rare parasite like *Dioctophyma renale* should be considered in differential diagnosis of patient presenting with haematuria and retention of urine, and clinicians must be aware of its pathogenic role.

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