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Dioctophyma renale infection masquerading as a malignancy

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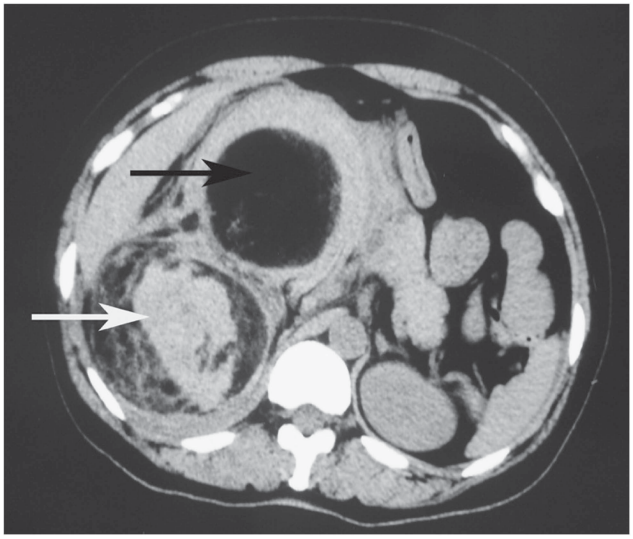

Figure 1 | Abdominal computed tomography without contrast medium showed two masses in the right renal region (white arrow) and perirenal area (black arrow). Density of the mass in the center area was relatively low in comparison with the periphery.

Figure 2 | Formalin-fixed adult *Dioctophyma renale* covered by a striated cuticle.

A 45-year-old farmer presented with intermittent gross hematuria and a 20-day history of right lumbago. On physical examination, his body temperature was 37.2 °C, and percussion tenderness over the right costovertebral area was noted. On abdominal computed tomography, a well-defined mass ($8 \times 9\,cm^2$) with contrast enhancement in the periphery, which was hypodense in the center, was found in the right kidney; another $4 \times 6\,cm^2$ mass extending into the retroperitoneal space was also seen (Figure 1). A diagnosis of renal malignancy was made, with local spread outside the renal capsule, and radical nephrectomy was advised. Before surgery, the patient was noted to be experiencing fevers to a temperature of 39 °C, which led to the operation being delayed. On the fifth day of fever, a large worm was expelled into the urine, which was confirmed to be *Dioctophyma renale* (giant kidney worm). The worm was red-brown in color and it turned gray-white after formalin fixation (Figure 2). The patient underwent nephrectomy after two courses of ivermectin. Dead worms were found in the renal pelvis. An exploration of two large masses certified that the right paravertebral lesion was indeed in a kidney.

Dioctophyma renale is found worldwide and has a wide range of mammalian host species, such as dog, wolf, cheetah, mink, horse, swine, and humans. Eggs are excreted in the urine of the host. Thereafter, they are ingested by an aquatic annelid, which is an intermediate host. Fish-eating mammals ingest the infected annelid and serve as transport hosts. Ingestion of the annelid by the definitive hosts results in migration of the larva from the intestine to the kidney, which is the maturation site for adult worms. Similar to a majority of reports published previously, our case also presented with unilateral involvement (typically the right kidney). The clinical manifestations are not specific. Infected patients develop hematuria and pain, likely due to migration of worms. Antibiotic therapy and surgical excision have been the recommended treatment.