

Eugene Paul Harper, M.D.¹, Justin Oring, D.O.², Harry Ross Powers, M.D.², Courtney Sherman, M.D.³, Benjamin Wilke, M.D.³, Donna Jane Hata, Ph.D.⁴, Aziza Nassar, M.D.⁴, Julio Mendez, M.D.², and Claudia Libertin, M.D.²

¹Department of Medicine, ²Division of Infectious Diseases, ³Division of Orthopedic Surgery, ⁴Division of Pathology and Laboratory Medicine
Mayo Clinic, Jacksonville, FL

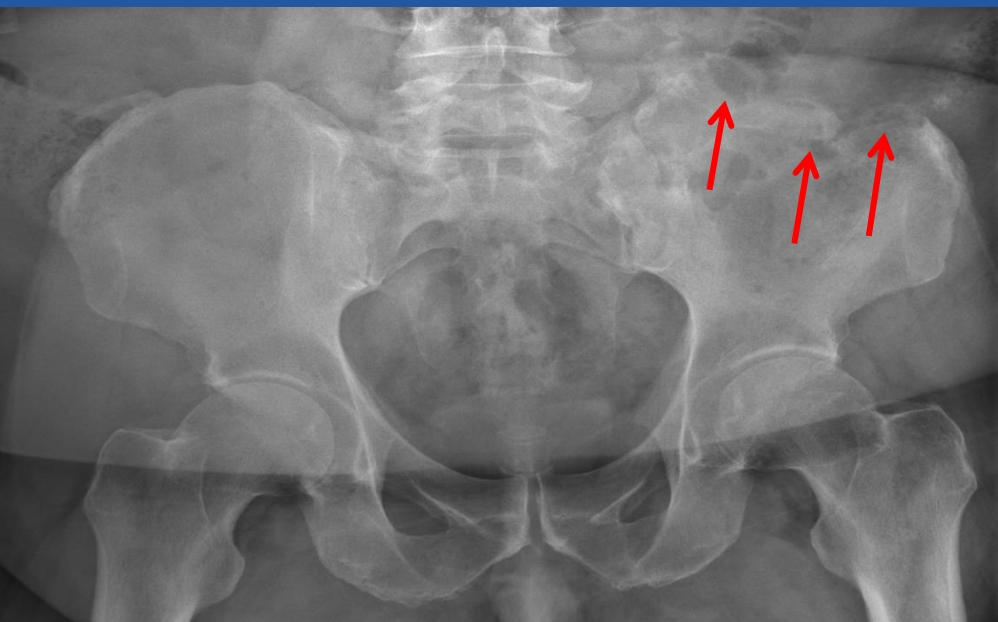
Background

Echinococcus multilocularis is a destructive zoonotic cestode with low human incidence. Hydatid disease classically presents with hepatic or lung involvement, but infrequently drives extrahepatic bone destruction. Diagnosis is challenging due to its latency and mimicry.

Case 1

A 57 year-old Albanian male with diabetes, latent TB, and left iliac lytic lesion presented with 4 weeks of left flank pain and was treated with 6 weeks of IV Ceftriaxone and Flagyl. 2 years later he returned with flank pain and purulent lumbar drainage. Hip x-ray suggested chronic osteomyelitis, with left psoas fluid collections on CT. Bartonella, Q fever, Brucella, HIV, AFB and fungal serologies were negative. Hemipelvis debridement revealed structures concerning for hydatid disease. *Echinococcus* IgG was equivocal. Histopathology was consistent with *Echinococcus multilocularis* species, and albendazole was started. On follow-up, he presented with left hip tenderness and toe extensor weakness. Labs showed mild leukocytosis. CT revealed progressive destruction of the left iliac with sacroiliac extension concerning for abscess.

Figure 1



X-ray imaging of the pelvis performed 1/7/2018 shows osseous destruction of the iliac crest secondary to known osteomyelitis, status post left ilium debridement.

Figure 2

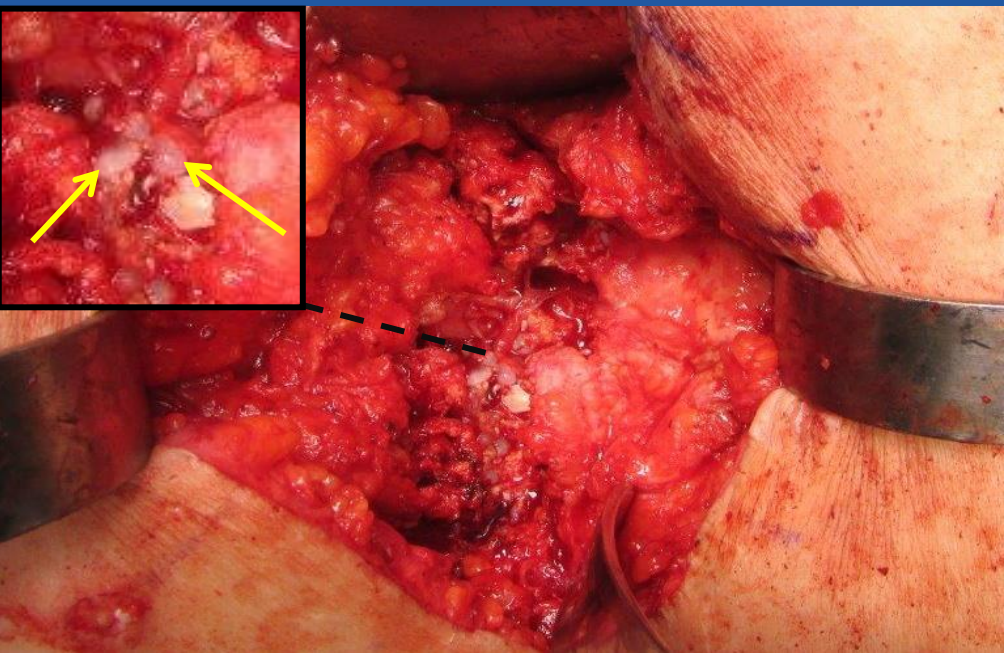
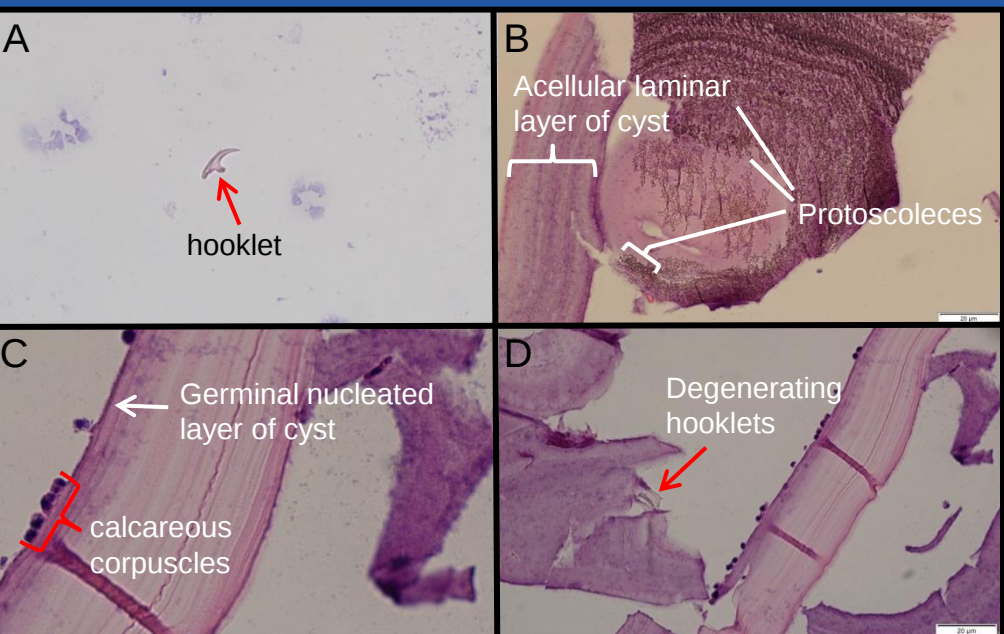


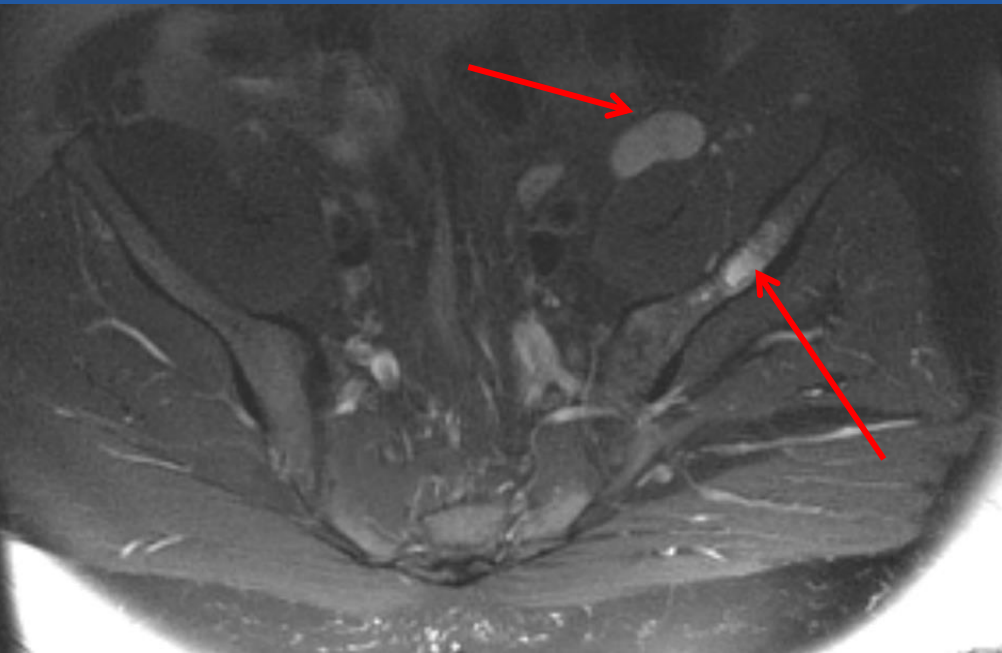
Photo taken during debridement of left ileac and hip. Note presence of white cysts discovered intraoperatively (see zoomed detail).

Figure 3



Histopathologic slides (H&E stain) demonstrating hooklets and scolices consistent with *Echinococcus multilocularis*. A. Hooklet (100x magnification). B. Hydatid cyst with black-staining structures suggestive of degenerating hooklets. C. Zoomed detail of cyst wall. D. Degenerating hydatid cyst and hooklets.

Figure 4



Magnetic resonance imaging performed 1/14/2019 of abdomen and pelvis demonstrates extensive osteomyelitis throughout left ilium. Stable scattered focal fluid collections seen throughout the left lower quadrant.

Case 2

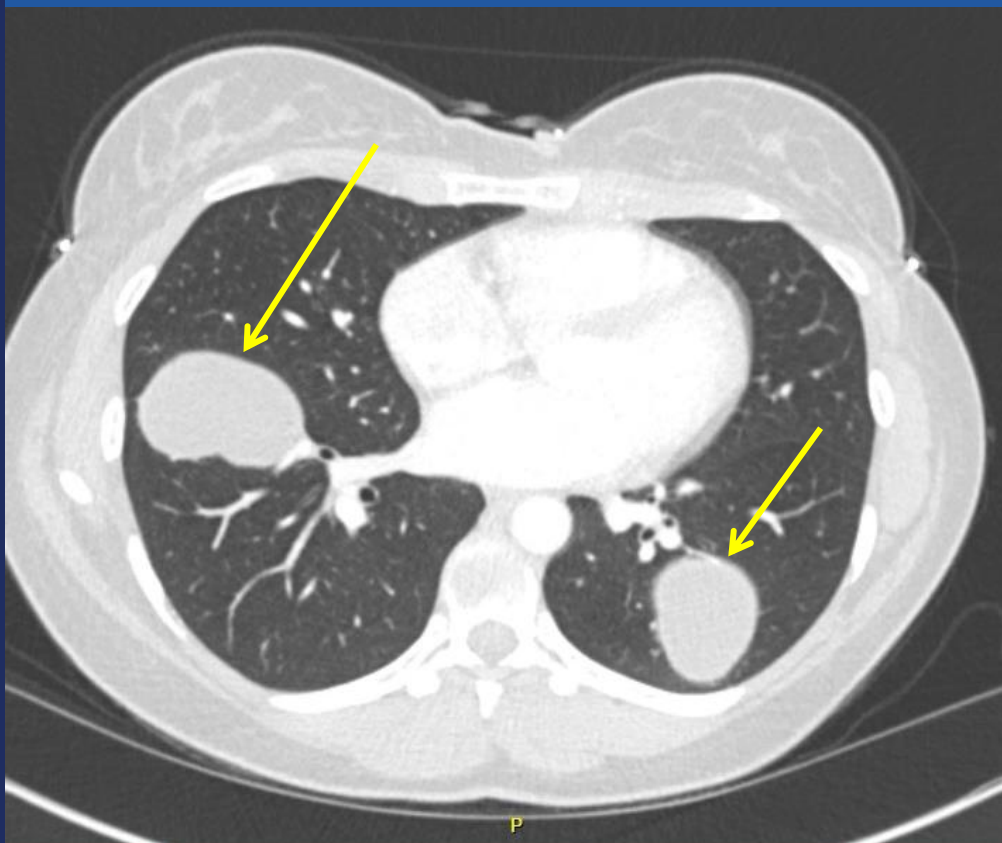
A 36 year-old female presented with lung and liver cysts, progressive dyspnea, and non-productive cough. She lived in Africa, Asia, and Europe, consumed local street food and unpasteurized milk. Hobbies included spelunking, and swimming in freshwater lakes. She had exposure to stray animals but denied bites or scratches. Over 4 years, dyspnea progressed to orthopnea. MR abdomen revealed a 10 x 6 x 12 cm liver cyst, and chest CT showed 2 fluid-attenuating lesions in the LLL and RLL, measuring 4.9 x 6.0 cm and 6.8 x 4.3 cm respectively. *Echinococcus*, Bartonella, Q fever, Brucella, HIV, AFB and fungal serologies were negative. Schistosomiasis serology was equivocal. Histopathology of both liver and lung cysts were consistent with *Echinococcus multilocularis* species.

Figure 5



Magnetic resonance imaging of the abdomen demonstrating a 10 x 6 x 12 cm cyst in the liver.

Figure 6



Chest CT showed 2 dominant fluid attenuating lesions within the LLL and RLL. The larger lesion in RLL measures 6.8 x 4.3 cm. The left lower lobe lesion measures 4.9 x 6.0 cm.

Follow-up

Patient 1 underwent type I hemipelvectomy. Patient 2 underwent pulmonary segmentectomy and liver lobectomy. Both patients were continued on albendazole.

Conclusion

Equivocal IgG serology does not exclude infection. History and clinical presentation are key to diagnosis, but histopathology remains the gold standard. Hydatid bone infection progresses insidiously and frequently recurs, depending upon excision and debridement. Finally, echinococcosis demands aggressive long-term therapy and surveillance.

Table 1: Labs & serology

	Echinococcus Antibody, IgG, serum	Eosinophils %	Histopathology
PATIENT CASE 1	Equivocal !	6.3	parasitic structures including hooklets most consistent with <i>Echinococcus multilocularis</i>
PATIENT CASE 2	Equivocal !	21.6	<i>Echinococcus multilocularis</i> - multiple sites: hydatid cyst of liver, LLL lung cyst

References

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