International Pathology Day 2024

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#IPD2024

From Mosquito to Microscope: A Rare Case of Subcutaneous Dirofilariasis in a 13-Year-Old

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Background

Dirofilariasis is a zoonotic infection caused by *Dirofilaria* species, transmitted through mosquito bites. It is rare in humans, especially as subcutaneous dirofilariasis, which is uncommon in pediatric cases. This report describes a 13-year-old female with subcutaneous dirofilariasis, diagnosed through histopathological examination.

Case Report

Presenting complaints:

A 13-year-old female presented with non-progressive, painless swellings:
- 2x3 cm mass in the right retroauricular region and
- 4x3 cm mass in the left iliac fossa. The patient had no systemic symptoms.

Lab Results:

- **CBC:** Leukocyte count 8,110 cells/cumm, eosinophils 5.1%
- **Peripheral Smear:** No hemoparasites

Investigations

Histopathology Findings (from paraffin block sections):

- **Specimen:** Swelling from right mastoid region
- **Gross Description:** Nodular tissue measuring 1.5 x 1.0 x 0.5 cm with a cystic lesion measuring 1.0 x 0.7 x 0.3 cm. The cyst lumen contained purulent material and a parasitic structure measuring 8.5 cm in length. (Fig.A)
- **Microscopy:** Sections showed a fibrocollagenous cyst wall with ulcerated epithelium (Fig.B). The cyst wall demonstrated dense mixed inflammatory infiltrates with numerous eosinophil (Fig.C). A parasite was identified, characterized by a thick laminated cuticle, prominent longitudinal ridges, and large lateral cords, features typical of *Dirofilaria* species (Fig.D).

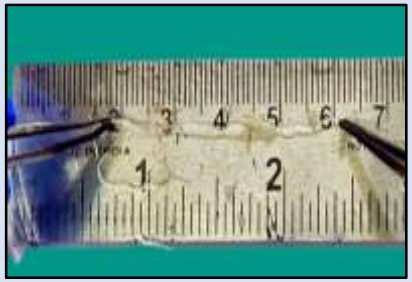

FIG A. Gross image of *Dirofilaria*

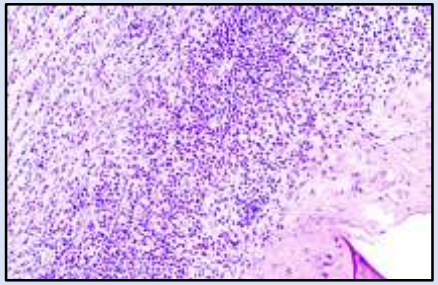

FIG B. Microscopic image of cyst wall (H&E, 10X)

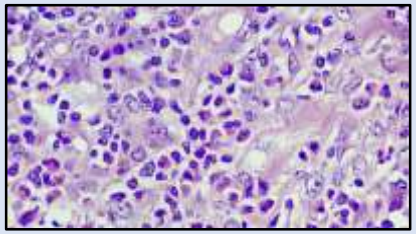

FIG C. Dense inflammatory infiltrate with eosinophils (H&E, 40X)

FIG D. Microscopic image of cross-section of the parasite. (H&E, 10X)

Radiological Findings (USG)

Ultrasound showed hypoechoic cystic lesions in the right retroauricular and left inguinal regions with echogenic linear structures suggestive of dirofilariasis.

Management and Treatment

- Surgical excision of the cysts was performed.
- Post-operative recovery was uneventful.

Discussion

Subcutaneous dirofilariasis is a rare parasitic infection caused by *Dirofilaria* species. It leads to cyst formation and is often misdiagnosed as benign or malignant. Histopathology is crucial for diagnosis, and surgical excision is both diagnostic and curative. This case highlights the importance of considering parasitic infections in cystic swellings, particularly in endemic areas.

Conclusion

Subcutaneous dirofilariasis should be included in the differential diagnosis of cystic lesions in endemic regions. Early diagnosis and surgical intervention are key to successful outcomes.

References:

(1)Wijekoon N, Antony D, Muhunthan T, Samarasinghe M. Dirofilarial nodule as a differential diagnosis for subcutaneous lumps in children. Pediatric Surgery International. 2022 Dec 21;39(1):55.
(2)Khurana S, Singh G, Bhatti H, Malla N. Human subcutaneous dirofilariasis in India: A report of three cases with brief review of literature. Indian journal of medical microbiology. 2010 Oct 1;28(4):394.
(3)Putnam TC. Lumps and bumps in children. Pediatrics in Review. 1992 Oct 1;13(10):371-8.