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Unusual Presentation of Paediatric Dirofilariasis

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Abstract: ***Dirofilariasis is a zoonotic parasitic infection caused by filarial nematodes of the genus Dirofilaria, with humans serving as accidental dead-end hosts. It most commonly affects middle-aged adults, presenting as pulmonary or subcutaneous nodules. Pediatric involvement is uncommon and may mimic benign or malignant lesions, leading to diagnostic challenges. We report the case of a 2-year-old female from a rubber plantation region who presented with a gradually progressive, painless submental swelling. Ultrasound revealed a hypoechoic lesion with mobile linear echogenic structures, suggestive of dirofilariasis. Surgical excision and subsequent histopathological examination confirmed the diagnosis of Dirofilaria infection. This case highlights an unusual pediatric presentation of dirofilariasis and emphasizes the importance of considering parasitic infestations in the differential diagnosis of head and neck swellings in endemic regions.***

Keywords: Dirofilariasis, Dirofilaria repens, pediatric, subcutaneous swelling, zoonotic infection

1. Introduction

Dirofilariasis is an emerging vector-borne zoonotic infection caused by filarial nematodes of the genus Dirofilaria, most commonly D. immitis and D. repens. Dogs and cats act as definitive hosts, while mosquitoes serve as intermediate vectors. Humans are accidental dead-end hosts who acquire infection through mosquito bites.

In humans, dirofilariasis usually manifests as pulmonary nodules or subcutaneous lesions, with the highest incidence reported in adults aged 40-49 years. Pediatric cases are rare and often misdiagnosed as benign cysts or lymphadenopathy. Here, we present an unusual case of pediatric subcutaneous dirofilariasis in the submental region.

2. Case Report

A 2-year-old female residing in a rubber plantation region presented with a swelling below the chin persisting for four months. The swelling gradually increased in size, was painless, and was not associated with fever or trauma.

Examination findings:

A firm, well-defined swelling (1.5 × 1.5 × 1 cm) in the submental region. Irregular surface, not freely mobile, with normal overlying skin. Not fixed to underlying structures.

Differential diagnoses:

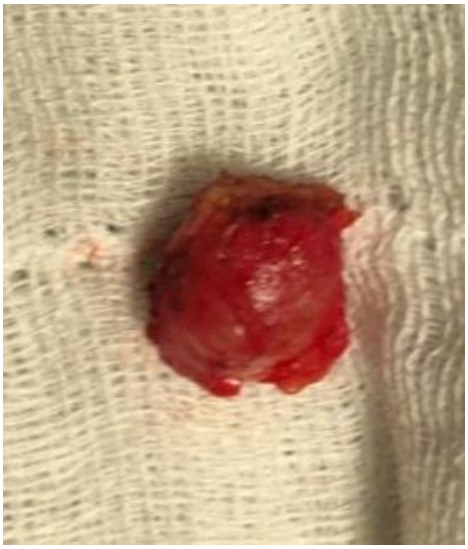
Dermoid cyst, lymphadenopathy, thyroglossal cyst, sebaceous cyst.

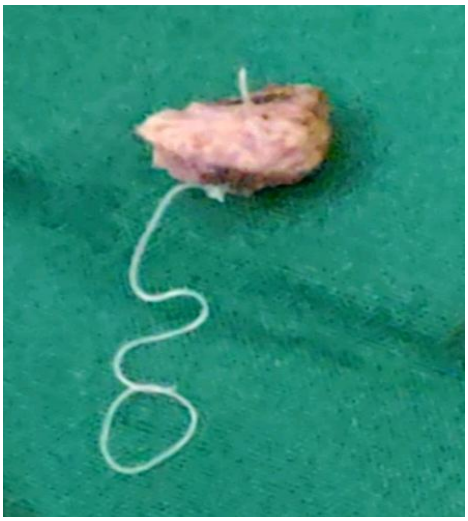
Ultrasonography:

A hypoechoic lesion of 7 × 5 mm with mobile linear echogenic parallel structures, anterior to the anterior belly of the right digastric muscle, suggestive of dirofilariasis.

Treatment:

Complete excision of the swelling under general anesthesia was done. And specimen send for biopsy. The postoperative course was uneventful.



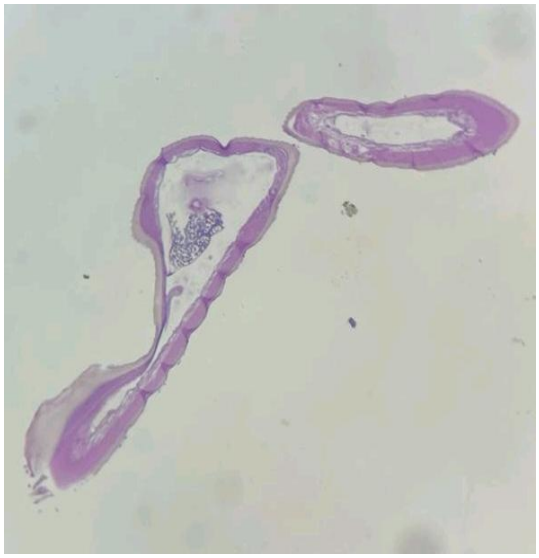


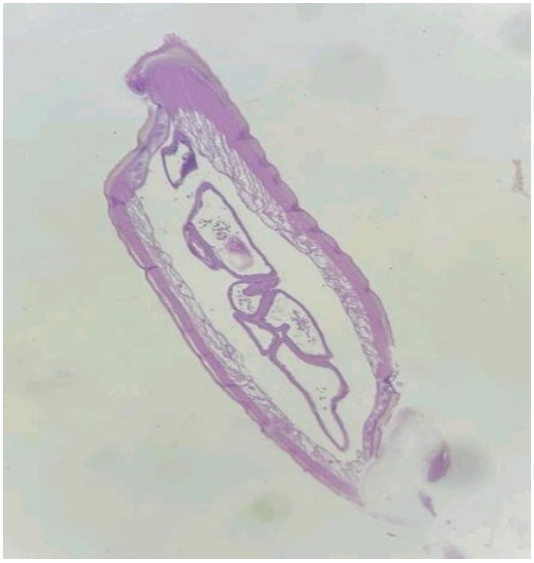
Histopathology:

Fibrocollagenous tissue with myltiple foci of dense inflammatory infiltrate composed of lymphocytes, plasma cells, and eosinophils.

Few areas of congested, dilated blood vessels. Sections from the worm shows parasite cuticle with longitudinal ridges and Lumen consisting of eosinophilic round structures.

Consistent with parasitic nodule due to Dirofilaria.





3. Discussion

Human dirofilariasis is a vector-borne zoonotic infection of increasing public health importance in tropical regions. The disease typically affects middle-aged adults, but pediatric cases are uncommon. Subcutaneous dirofilariasis often mimics benign and malignant swellings, making clinical diagnosis difficult.

Risk factors include high mosquito density, increased outdoor activity, and the presence of microfilaraemic dogs in endemic areas. Ultrasonography serves as a useful, non-invasive diagnostic tool, with surgical excision and histopathological confirmation being the definitive diagnostic and therapeutic approach. Pharmacotherapy is generally not indicated since microfilaremia is rarely seen in humans.

This case is noteworthy due to the patient's young age and the unusual submental location of the lesion, underscoring the need for clinicians to consider dirofilariasis in the differential diagnosis of pediatric subcutaneous nodules in endemic regions.

4. Conclusion

Subcutaneous dirofilariasis in children is rare and can clinically resemble several benign or malignant lesions. Early diagnosis with the aid of imaging and confirmation by histopathology is essential. Surgical excision remains the treatment of choice. Preventive strategies including vector control, canine chemoprophylaxis, and awareness among clinicians are crucial to reducing disease burden.

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