Journal of Current Medical Research and Opinion
CMRO 08 (11) 4495-4497 (2025)
DOI: https://doi.org/10.52845/CMRO/2025/8-11-1
www.cmro.in
CMRO
ISSN (O) 2589-8779
(P) 2589-8760

Original Article

Novel Household Contamination with Hydatid Cysts

Hichem Derrar[1], Mohammed Chadli[2], Mohammed Amine Boumelik[3], Assia Meradji[4], Adila Bassaid[5], Yassine Merad[6]

[1]Pulmonary disease department, Djilali Liabes University of Medicine, Sidi-Bel-Abbes, Algeria

[2]Emergency department, Djilali Liabes University of Medicine, Sidi-Bel-Abbes, Algeria

[3]Forensic department, Djilali Liabes University of Medicine, Sidi-Bel-Abbes, Algeria

[4]Parasitology-Mycology department, Abdelhamid Benbadis Hospital, Faculty of Medicine, Constantine, Algeria

[5]Parasitology-Mycology department, Mustapha Hospital, Faculty of pharmacy, Algiers, Algeria

[6]Central Laboratory department, Djilali Liabes University of Medicine, Sidi-Bel-Abbes, Algeria

Abstract

Cystic echinococcosis (CE) is a parasitic disease caused by *Echinococcus granulosus* with high prevalence in North Africa. Dogs are the definitive hosts. This commentary highlights a significant risk factor for CE transmission in peri-urban areas, where unfinished construction projects create environments conducive to parasite survival. These peri-urban areas, often characterized by a combination of stray dog populations, poor sanitation, and proximity to rural areas where CE is prevalent in livestock, present a unique challenge. While sandboxes and playgrounds are recognized health hazards, construction sites on the edges of cities, with their abundance of sand and gravel, become readily contaminated with *Echinococcus granulosus* eggs shed in the feces of stray dogs. Children who play in these contaminated zones are at increased risk of infection, particularly given the extended viability of the eggs in arid climates

Keywords: Eggs, Hydatid Cyst Transmission, *Echinococcus Granulosus*, Cestodes, Parasitic Transmission

Introduction

North Africa has a high prevalence of cystic echinococcosis, with dogs serving as the definitive hosts for the parasite[1,2]

Tapeworm eggs, shed by dogs feces, can be accidentally ingested by human, penetrate the intestinal wall, and travel through the liver. In some cases, they bypass the liver and reach the lungs. Therefore, hydatidosis most often affects the liver (75%) and less frequently the lungs (15%)[1,2,3]

Infection with *Echinococcus granulosus* most commonly occurs through ingestion (contaminated food, water, or soil). Infection can also occur through contact with contaminated animal fur. While other transmission routes have been suggested, they lack strong evidence. For example, airborne transmission through the lungs

Corresponding Author: Yassine Merad, Central Laboratory department, Djilali Liabes University of Medicine, Sidi-Bel-Abbes, Algeria
E-mail: yassinemerad8@gmail.com

Received: 20.08.2025 | **Revised:** 27.10.2025 | **Accepted:** 08.11.2025 | **Published:** 13.11.2025

and direct skin penetration have been proposed, but not definitively proven[4].

On the outskirts of our cities, unfinished buildings are surrounded by sand and gravel, ideal breeding grounds for parasites. Stray dogs, often infected with Echinococcus granulosus, contaminate these areas with their feces at night.

In the morning, the children of the owners of the unfinished and under-construction individual houses play in the sand.

Since these eggs can survive up to two years under arid climate climate, these children are at a high risk of contamination[5].

While sandboxes and playgrounds are recognized health hazards[6,7] construction sites pose an even greater threat in our regions. This public health issue demands wider dissemination among medical professionals and researchers. Prevention and screening must be addressed to these patients given that this pathology often goes unnoticed at the very beginning.

Methods and results

This observation is based on monitoring of the peri-urban regions of the city of Sidi-Bel-Abbès over the last five years.

Stray dogs prefer the peripheral zones of the city, not the central regions.

Stray dogs gather around construction sites after sunset, mainly congregating in sand piles next to the houses being built in the peri-urban areas.

The peri-urban regions experience a significant influx of stray dogs because of the abundant garbage that is thrown preferably on the outskirts.

we noticed that large garbage piles were common in peri-urban areas

Discussion

Cystic echinococcosis poses a significant public health challenge in North Africa, where its prevalence is high, with dogs acting as the definitive hosts. Hydatisosis is primarily a rural disease, associated with traditional livestock farming[1,2,3]

Our manuscript highlights a critical, yet often overlooked, transmission pathway in our region: the presence of unfinished and under-construction buildings on the outskirts of our cities. These sites, characterized by sandy and gravelly terrain, provide ideal breeding grounds for parasites. Stray dogs, frequently infected with Echinococcus granulosus, contaminate these areas with their feces, posing a substantial risk, particularly to children who play in these areas.

Given the parasite's ability to survive for up to two years in arid climates, the risk of contamination is prolonged and significant. While the health hazards associated with sandboxes and playgrounds are well-documented[6,7], our manuscript argues that construction sites represent an even greater threat in North Africa.

We believe that this public health issue requires broader awareness among medical professionals and researchers. Our manuscript emphasizes the urgent need for increased dissemination of information regarding this transmission route and advocates for the implementation of effective prevention and screening strategies, especially given the often-asymptomatic nature of early-stage cystic echinococcosis.

A study has shown that the bacterial load in dog feces deposited on beach sand was the highest among many mammals[8]. Children are particularly vulnerable to parasitic infections due to their common hand-to-mouth behavior and less frequent handwashing. Their play activities, especially in sandboxes or with soil, increase the likelihood of ingesting contaminated material[9]. Moreover, geophagy is associated with inbuilt response to malnutrition (nutrient supplementation), it also relieves gastrointestinal disorders such as nausea and diarrhoea[10]

Stray dogs are disease carriers. As long as there are available food sources, dogs from the surrounding areas will enter the urban environment[11]

The urban individuals can contribute to managing the dog population by not dumping waste in public.[12,13]

Conclusion

To confirm the peri-urban contamination linked to unfinished construction, we need to extract trends in the attitudes of residents from across the socio-economic classes of the world.

The value of the results and policy suggestions in this study can be verified by future interventional research that quantifies the impact of " stray-dogs" on the health of the population.

As Reese (2005) said, “the success of such control measures depends heavily on an understanding of the dog ecology and the nature of the dog-human bond in the locale under consideration"[13]

Ethical considerations

The authors have no interest conflict to disclose

References

1. Merad Y, Derrar H, Zeggai A, Belkacemi M, Belmokhtar Z, Adjmi-Hamoudi H. A rare primary hydatid cyst of the psoas muscle in a rural setting: A case presentation. Ann Med Surg (Lond). 2020 Sep 9;59:86-88.
2. Merad Y, Derrar H, Zeggai A, Chadli M, Bemrah N, ElHabachi B. Primary splenic hydatid cyst an unexpected diagnosis: Case report. Ann Med Surg (Lond). 2021 Apr 20;65:102293.
3. Benatta M, Yassine M. A Giant Primary Adrenal Hydatid Cyst: The First Case Report in a Endemic Country: Algeria. AJCRS, 2021
4. Vecchio R., Marchese S., Ferla F., Spataro L., Intagliata E. Solitary subcutaneous hydatid cyst: review of the literature and report of a new case in the deltoid region. Parasitol. Int. 2013 Dec;62(6):487–493. doi: 10.1016/j.parint.2013.06.013
5. Thevenet PS, Jensen O, Drut R, Cerrone GE, Grenóvero MS, Alvarez HM, Targovnik HM, Basualdo JA. Viability and infectiousness of eggs of Echinococcus granulosus aged under natural conditions of inferior arid climate. Vet Parasitol. 2005 Oct 10;133(1):71-7.
6. Acosta-Jamett G, Weitzel T, Boufana B, Adones C, Bahamonde A, Abarca K, Craig PS, Reiter-Owona I. Prevalence and risk factors for echinococcal infection in a rural area of northern Chile: a household-based cross-sectional study. PLoS Negl Trop Dis. 2014 Aug 28;8(8):e3090.
7. Da Silva AM, Bastien M, Umhang G, Boué F, Bastid V, Boucher JM, Caillot C, de Garam CP, Renault C, Faisse M, Courquet S, Scalabrino V, Millon L, Knapp J, Poulle ML. Soil contamination by Echinococcus multilocularis in rural and urban vegetable gardens in relation to fox, cat and dog faecal deposits. Parasite. 2021;28:74.
8. Wright ME, Solo-Gabriele HM, Elmir S, Fleming LE. Microbial load from animal feces at a recreational beach. Mar Pollut Bull. 2009 Nov;58(11):1649-56.
9. Overgaauw P. A. M., van Knapen F.: Veterinary and public health aspects of Toxocara spp. Vet. Parasitol. 2013, 193, 398-403
10. Malepe RE,Candeias C, Mouri H. Geophagy and its potential human health implications - A review of some cases from South Africa. Journal of African Earth Sciences, Volume 200, April 2023, 104848
11. Bhalla SJ, Kemmers R, Vasques A, Vanak AT. 'Stray appetites': a socio-ecological analysis of free-ranging dogs living alongside human communities in Bangalore, India. Urban Ecosyst. 2021;24(6):1245-1258.
12. Herbert M, Basha R, Thangaraj S (2012) Community perception regarding rabies prevention and stray dog control in urban slums in India. Journal of Infection and Public Health 5:374–380.
13. Reese JF(2005) Dogs and dog control indeveloping countries. In: Salem DJ, Rowan AN (eds) The state of the animals III: 2005. Humane Society Press, Washington, DC, pp 55–64