

“Echinococcosis in non-human primates”



“Mounir KHAYLI”

“National Focal Point/ Morocco”

“National Office of Food Safety (ONSSA)”



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6th cycle Training of National Wildlife Focal Points

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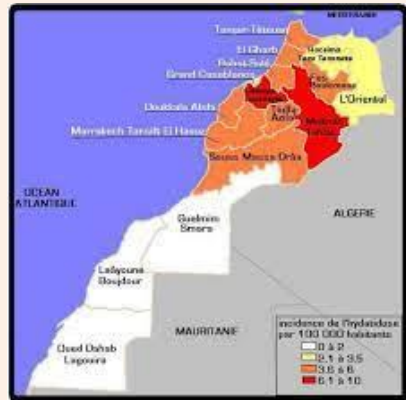
Author Introduction Auteur(s)

- Mounir KHAYLI: DVM, Msc, PhD
- Epidemiologist
- National Focal Point / Morocco



Background : The disease

- Cystic Echinococcosis is a Parasitic disease caused by *Echinococcus granulosus*. It is particularly endemic in Mediterranean countries and is one of the major zoonoses.
- The Middle Atlas is a region where the prevalence of cystic echinococcosis is the highest in the Kingdom, both human and animal (El Berbri, 2015).



- Being endemic in this region, the Magot monkey would be highly exposed to the disease. This is explained by the pastoral nature of small ruminant breeding and the habitual use of forest areas.
- The dog, definitive host of the parasite, being omnipresent in this context.



Background: The host

- **Conservation status: Magot Monkey**

- IUCN: Endangered

- CITES: Appendix I

- Law 29-05: Category I

- *Macaca Sylvanus*, the only African macaque, endemic to North Africa (Fooden, 1982).

- In Morocco, the forests of the Middle Atlas are home to about 65% to 75% of the world population of this species (Ciani, 1986), whose number is estimated at about 5000 individuals (van Lavieren & Wich 2010). In the Rif, the average size of groups is about 40 individuals (Ménard, 2002). In the High Atlas, about 14 groups are identified (Cuzin 2003).

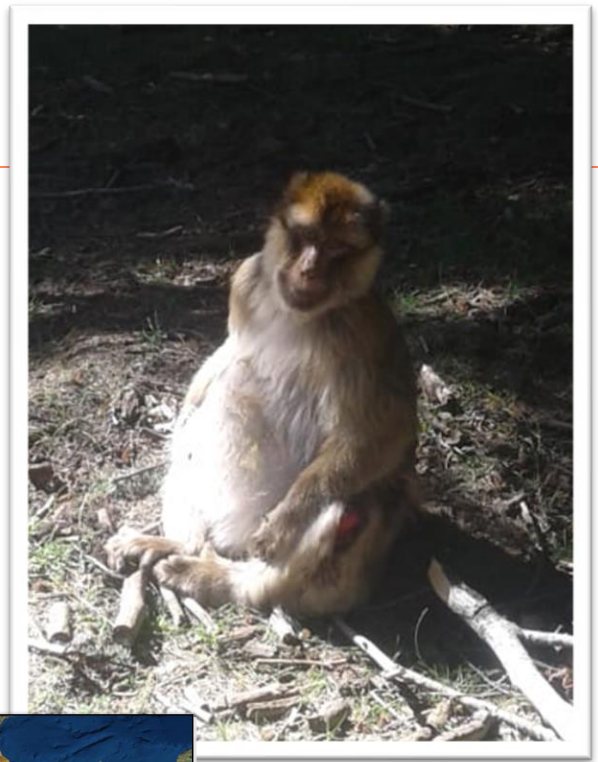




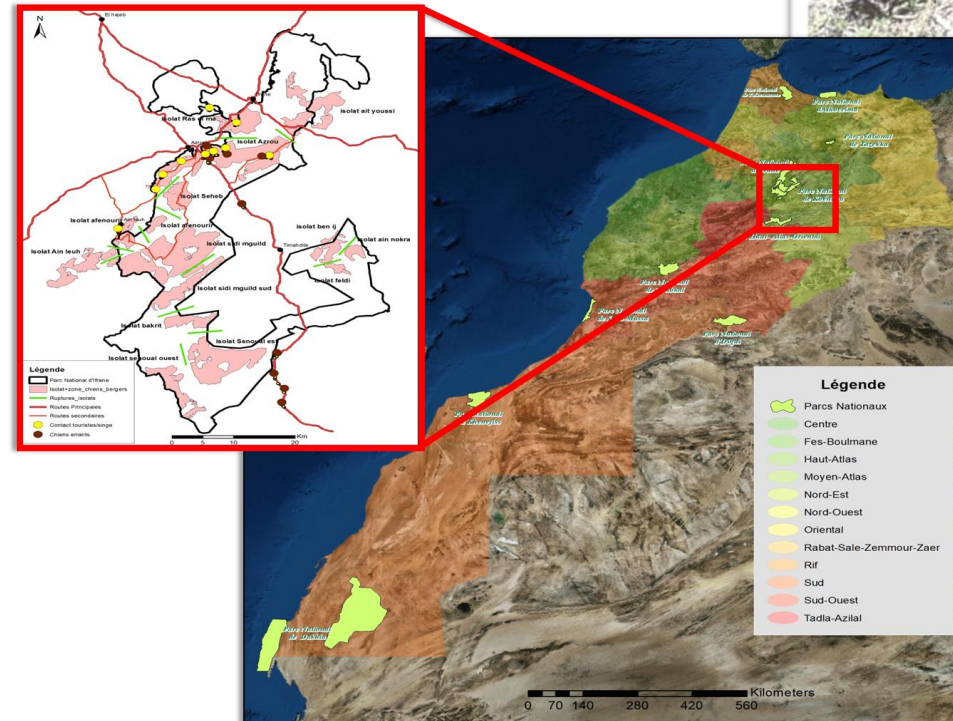
Subject matter: **Case report**

- **Memorials**

Magot monkey, male, over 14 years old, belonging to the wild population of the Middle Atlas region, presenting before death, significant abdominal distension and a marked drop in activity.



Distribution of the Magot monkey population in Ifrane National Park





Subject matter: **Case report**

- ***Table of lesions at autopsy***

- Presence of hundreds of double hydatid cysts
- Membrane containing a transparent liquid under pressure,
- in the abdominal cavity.
- Absence of all internal organs, Following, most likely,
- to post-mortem predation by a carnivore.





- **Diagnostic**

- In the light of these results and the histo-anatomopathological examination of the lesions, the established diagnosis is oriented towards an infestation by *E. granulosus*.
- Molecular analyzes can determine the causal strain(s), possibly circulating in wildlife in the Moroccan context.

***E. granulosus* at the level of the abdominal cavity
(autopsied monkey)**



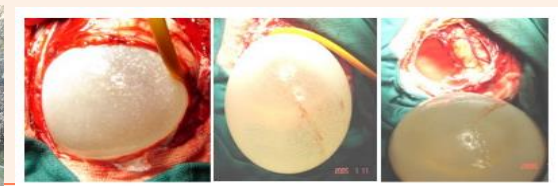




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It is a One Health theme

“

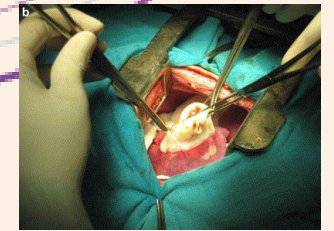
Hydatidosis is not only one of the most devastating parasitic diseases in humans, but it is also very difficult and expensive to treat and prevent in Morocco.

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In Morocco
Annual incidence
rate is 12%
For every 100,000
inhabitants

An annual
average of
1600 surgeries

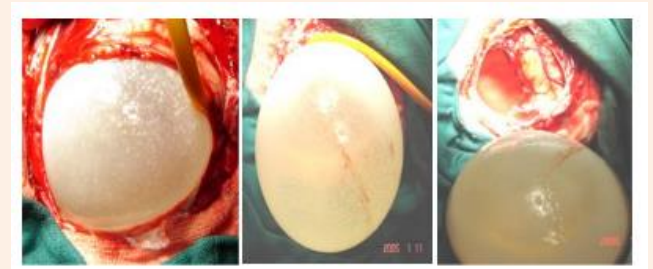
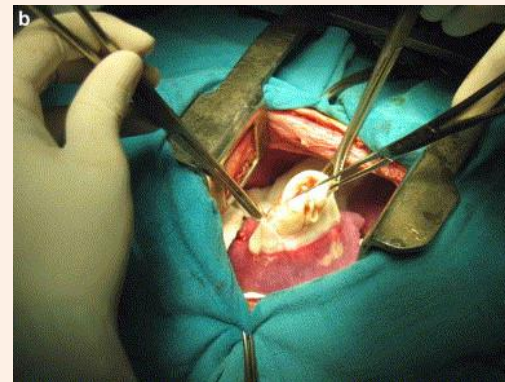
On average
\$2.500 direct
costs of medical
care per patient





Conclusions

- This discovery of the surveillance network highlights the important role that wildlife could play in the transmission of hydatid disease in the epidemiological context of the Middle Atlas.
- Also, he suggests the need to include the wildlife link, usually hidden, in the measures taken for the prevention and control of the disease, but also the conservation of the Magot monkey in Morocco.





Conclusions

- Preventive measures taken are mainly:

Intermediate hosts
(Livestock)

- Development of slaughter structures
- Fight against illegal logging
- Control of public landfills

Definitive Host
(Dog)

Accidental Host
(Human)

- Stray dog population control
- Pest Control for Owned Dogs
- Public awareness
- Information, education and awareness





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- Dr. Latifa Sikli: Veterinary Officer (Forests Department.)



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