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Attempt of Experimental Transmission of Hydatid Infection from Human to Dogs

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Summary

An experimental infection of 3 dogs with *protoscoleces* of human origin were carried out Hydatid cyst was surgical removed from 26 years old female. On autopsy all dogs were found not harbor any *Echinococcus granulosus* worms Infection with the metacestode stage in unusual intermediate hosts failure for procreation which do not play a role in the transmission cycle in Iraq. In conclusions: the reason could be related between the host and chemical composition of hydatid fluid failure of induces infection

Key words: dogs, infection, protoscoleces, hydatid cyst, *Echinococcus granulosus.*

محاولة نقل تجريبية لداء العدريات من الإنسان إلى الكلاب

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الخلاصة

نُفذت إصابة تجريبية 3 كلاب باستخدام الرؤيسات الأولية لكيس عذري أنساني الأصل ازيل جراحيا من الرئة اليسرى لفتاة تبلغ 26 سنة. و عند قتل وتشريح الكلاب لم يُعثر على ديدان المشوكات الحبيبية بينت نتائج الدراسة عدم تقبل الكلاب الإصابة عند إعطائها رؤيسات الأولية لأكياس عذرية من مضائف وسطية غير اعتيادية التي لاتلعب دوراً في دورة انتقال المرض في العراق. ونستنتج من هذه الدر اسة ان السبب قد يعزا الى وجود علاقة بين المضيف والتركيب الكيمياوي للسائل العذري في فشل احداث الاصابة.

الكلمات المفتاحية : اصابة الكلاب تجريبيا رؤيسات انسانية الأصل

Introduction

It is now the truth of at least three distinct strains of *Echinococcus granulosus* in Iraq. On the other hand remarkable results is that revealed some differences in morphological and biological features (1-6) An obvious variability in the DNA banding patterns of *Echinococcus granulosus* isolates from humans suggests that humans can be infected with more than one strain of this parasite in Iraq (4). In previous studies (3and5). It have isolated the developed *Echinococcus granulosus* from experimental infected dogs with *protoscoleces* of hydatid cyst removed from camel and donkey respectively.

Our aim was tried to confirm the existence of human strain of these worms to provide information about the possible origin of infection in humans.

Material and Methods

Large pulmonary hydatid cyst of *Echinococcus granulosus* 140 mm in diameter and 430ml of hydatid fluid with numerous protoscoleces about 70072 was surgically removed from female's left lung 26 years old without treatment by any drug and removal contact.

Three puppies local strain aged about five months were initially treated with anti - helminthes (Mebendazol). The dogs were housed separately and fed on cooked bones and meat. The protoscoleces were isolated microscopically with viability rate about 87.34% to infect puppies orally at dose 60 000 protoscoleces five ml / puppy. At 35 days post infection killed dogs and examined the small intestine for *Echinococcus granulosus* (7).

Results and Discussion

Periodical fecal examination was negative at thirty and thirty five days post infection. Non of the dogs which received protoscoleces of human origin *Echinococcus granulosus* were found.

In most parts of the world where hydatid disease occurs in men and animals the former host is not involved in the Human hydatid disease (8and9) From the epidemiological point of view it might be useful to differentiate between intermediate hosts which play a role in the perpetuation of the cycle and "aberrant or accidental hosts " which represent a blind alley for the parasite as the latter are not involved in disease transmission This may be due to metacestode stages do not become fertile in these hosts or because such hosts do not interact in the transmission cycle. Thus the metacestode in an abnormal intermediate host may lose its full capacity for procreation (8-12). Although entirely absent of Echinococcus *granulosus* in the immunized dogs it appears that resistance in the dog no immunological basis or at least did not involve immune responses. A striking natural resistance and 100% inhibition were observed by some authors in Beagle puppies in South Wales Australia (13). The mechanisms underlying natural resistance remain obscure (13 and14). However there is highly related between the host and chemical composition of hydatid fluid factors such as complement might be involved (15). Also, (14and15) show that complement is highly lethal to adult *Echinococcus granulosus* in vitro. On the other hand some dogs may have a genetically natural resistance to *Echinococcus granulosus*. If there is a genetically determined such factors is likely to be particularly strong in the introduction of resistant dog breed and strains into high risk area might reduce the spread of hydatid disease (11). When infection occurs in humans the cycle comes to a dead end because the human hydatid cysts are unlikely to be eaten by dogs. On the other hand when natural transmission from man to dog is likely to occur as in hyper endemic region

of eastern Africa (Trukana /Kenya) an experimental infection of dogs with protoscoleces of human origin was readily achieved (16 and 17).

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