

Descriptive epidemiology study of pulmonary hydatid cysts

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ABSTRACT

Retrospective descriptive study concerted 21 cases of lung hydatid cysts collected from 2006 to 2010, with an average the 4.2 ± 2 cases / year). The age of patients is between 8 and 75 years, with an average of 36 ± 4.3 years. Women are most at risk with 76% of cases (sex ration (F / M) = 3). The distribution of the disease in the community has shown us that the rural areas were the most affected (61%) compared to rural. 95% of patients underwent surgery only, 5% had two interventions. The outcome was favorable. © 2014 Trade Science Inc. - INDIA

KEYWORDS

Lung;
Epidemiology;
Hydatidosis.

INTRODUCTION

Pulmonary hydatidosis is a disease due to the location at the pneumonic device larval form of the dog tapeworm '*Echinococcus Granulosus*'. The definitive host is a dog, which is contaminated by ingesting offal or infected tissue. The parasite develops in the small intestine of the dog. Once the mature parasite, he regularly releases proglottids containing infective eggs, which are eliminated in the external environment. The intermediate host, herbivore or omnivore, is contaminated by ingesting the eggs in contact with a noisy dog, or by drinking water contaminated fruit or raw vegetables, when ingested, eggs release the oncosphere which will pass through the intestinal wall and encyst in an organ, usually the liver or lungs, forming hydatid cysts containing protoscoleces that infect the definitive host^[2].

It is a cosmopolitan disease, but can be observed with high frequency in countries where there is still

the traditional sheep framed by sheepdogs (Mediterranean, Canada, South America, Eastern Europe, Australia, and in north Africa), some parts of the Mediterranean with a prevalence of up to 5 % of the population in areas of high endemicity, such as sheep rearing regions of the Mediterranean^[1]. In Morocco, the repeated dog - men contacts, the importance of livestock and pasteural prophylactics underdeveloped, explain the frequency of this disease poses a real health problem. The objective of this work is to study the main epidemiological characteristics of pulmonary hydatid cysts in comparing our results with data from the literature.

PATIENTS AND METHODS

This is a retrospective descriptive study based on data from the Provincial Delegation of Health Kenitra, service infrastructure and provincial ambulatory actions Morocco during the period 2006

Review

and 2010. The data are entered in Excel and analyzed by statistical software, the variables studied were epidemiological variables.

The statistical methodology was based on the calculation of frequencies or averages for each study variable that allowed us to describe the cases operated on for pulmonary hydatid disease. To identify liaison between variables we used the chi-square test of Pearson and student t-test to compare means. On the other hand, to study and visualize the existing correlations between the variables, we used principal component analysis.

RESULTS

The study on hydatid cysts shows that during the period 2006-2010, 21 cases were operated on for pulmonary hydatidosis, averaging 4 ± 2 cases / year. Different epidemiological characteristics of our series for each variable are reported in TABLE 1. Figure 1 show hydatid cysts.

These results show that all age groups have been affected by this disease, the age of patients is between 8 and 75 years, with an mean of 36 ± 4.3 years, the two age groups [20-40 [and [40-60 [represent the most high frequency. Women are most at risk with 76% of cases (sex ratio (F / M) = 3). Rural areas was very dominant over the urban areas,

TABLE 1 : Epidemiological characteristics of the study population

Variables	n	(%)	χ^2 to 5%	P
Age groups				
[0-20]	4	19	21	P<0,001
[20-40]	9	42,9		
[40-60]	5	23,8		
? 60	3	14,3		
Sex				
Female	16	76	5,76	P= 0,02
Male	5	24		
Area				
Urban	8	38	11,09	P<0,001
Rural	13	62		

p e" 0.05: no significant difference, 0.05 < p d" 0.01: significant difference; 0.01 < p d" 0.001: highly significant difference, p d" 0.001.

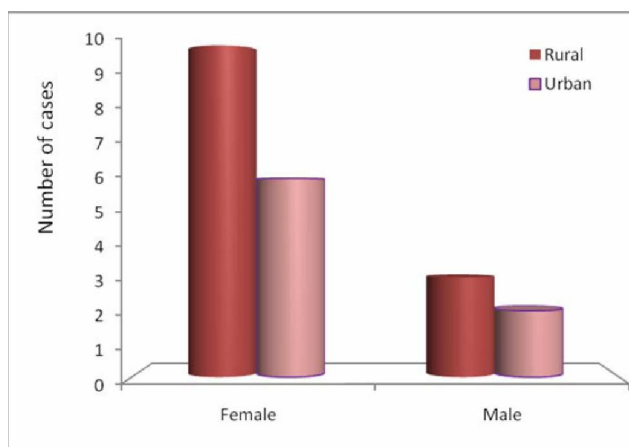


Figure 1 : Distribution of cases operated by sex and middle

the highest number of cases was observed among women of rural origin Figure 1.

To compare the distribution of the age variable in both Female/ Male, the two box plots are defined respectively for the male group and the female group is used [Figure3], there is an age difference between the female and male, the median value is 38 for men and 26 for women. Considering the spread in the central part of the distribution, there is an existence of an atypical age for both sex.

To detect significant differences between the age groups liaison, we calculated the Student t test, according to this result there is a very significant relationship (P <0.001) for the portion of [20-40] and another significant for the age group [40-60].

To visualize existing correlations between sex, age groups, the middle and the distribution of the disease we used principal components analysis. The results shown schematically in Figure 3.

According to the first factor (30.53%) there is

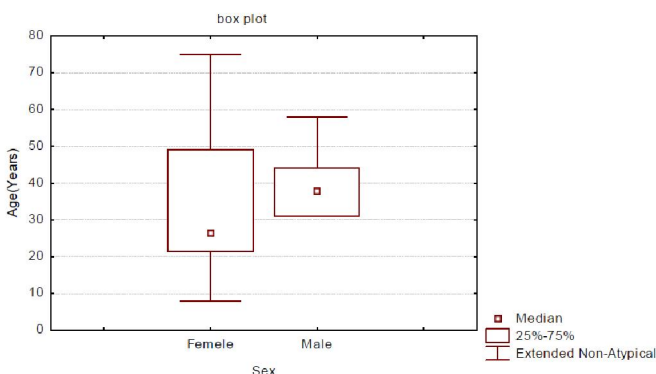
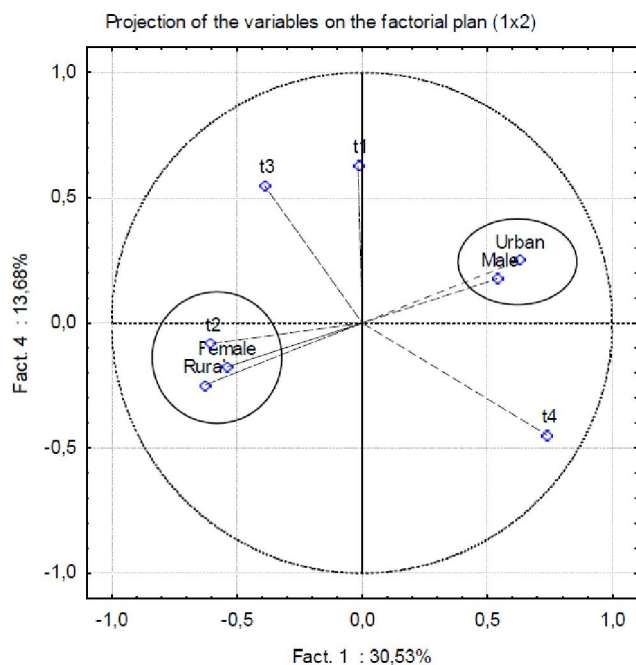


Figure 2 : Distribution of the variable age by sex, 2006-2010

TABLE 2 : Comparison of means of different age groups

	t	Sig. (bilaterale)	mean difference	Confidence interval 95% of the difference	
				Inferior	Superior
[0-20[	1,844	0,083	0,167	-0,02	0,36
[20-40[	5,831	P<0,001	0,667	0,43	0,91
[40-60[	2,915	P=0,01	0,333	0,09	0,57
?60	1,844	0,083	0,167	-0,02	0,36

p e" 0.05: no significant difference, 0.05 < p d" 0.01: significant difference; 0.01 < p d" 0.001: highly significant difference, p d" 0.001.



Age Groups : t1 : [0-20], t2 : [20-40], t3 : [40-60], e"60 : t4

Figure 3 : Representation of the influence of age groups, sex and the area on the distribution of the disease

an association between women, rural and age[20-40] side (X). While urban correlates with men on the side (X+). These results confirm a strong correlation between changes between the female and the rural middle

Radiology has represented (66.6%) of the average of the diagnosis, followed by ultrasound (28.6%), followed by computed tomography (4.8%). The majority of patients (95%) underwent surgery alone, 5% had two interventions. The outcome was favorable in all cases operated.

DISCUSSION

Pulmonary hydatid disease is a parasitic infec-

tion found mainly in the areas of farming. The lung is the organ that occupies the second position after the liver. Humans are contaminated by an accidental impasse. Once the eggs are eliminated in the external environment with the feces of dogs, are ingested through the intestinal wall and pass into the bloodstream, earning the liver and lungs, more rarely, the location can be done in other organs.

The disease affects both sexes, with the predominance of females (76.2%), these results is concordante with littérature^[4-6]. In our series we found that women in rural areas are the most effective high (10 rural cases, urban 6 cases). The rate in rural areas was approximately (61.9%) because the latter is a reservoir renewal cycle of the parasite and the ignorance of the population to control measures and other studies rural is represented (73.7%) of cases^[10]. The age of our series between 8 and 74 years with a mean age of 36.2 ± 4.3 years, these results are similar with the other cases in the literature^[5] the disease can occur at any age, because the parasite is characterized by a phase very long latency times the age of discovery may be very early^[8] described an attack to 9 months.

Treating the majority of patients had surgery that aims to remove the parasite, preventing seeding and spread fertile hydatid element that could rise to a secondary hydatid^[7]. At the heart of this study it was found that 95 % underwent surgery alone, 5% two interventions.

All patients benefit from a chest radiograph, it is the first and most important investigation in pulmonary hydatid cyst (66.6%) followed by ultrasound in second place (28.6%), it is practiced in the part of a staging and computed tomography (4.8%) that can provide the precise location and nature of the

Review

cyst, it can not only be useful in the diagnosis in doubtful cases and in planning surgical method^[3]. The outcome was favorable in all cases operated

CONCLUSION

Pulmonary hydatid disease is a disease of rural world where there is livestock and the presence of dogs, promoting the renewal cycle of the parasite. The lung is the second location of hydatid disease after liver. So early diagnosis and prophylaxis are key factors to reduce the risk of disease.

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