

Research Article**Unaccustomed Localizations of Hydatid Cyst Experience of the Service****Mountassir Moujahid^{1,4*}, Hicham Iraqui¹, Mohamed Ghari², Issam Serghini³, Khalid Chekoura³, Moulay Hassan Tahiri¹**¹Departement of Surgery, General Service of Surgery, 5th Military Hospital, Guelmim, Morocco²Departement of Radiology, General Service of Surgery, 5th Military Hospital, Guelmim, Morocco³Departement of Reanimation, General Service of Surgery, 5th Military Hospital, Guelmim, Morocco⁴Résidence ibnou khaldoun, B40, rue oued el makhazine, Harhoura – Temara, Morocco***Corresponding author**

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Abstract: The hydatid cyst is a cosmopolitan parasitic infection that constitutes a problem of the public health in the zones of raising of the developing countries. We return the result of a retrospective survey of 64 cases of unaccustomed localizations of hydatid cysts collected in the general surgery service of the Avicenne military hospital on one period of 17years. The middle age of our patients is of 32years with extremes going from 9 at 66 years. The clinical symptom depended on the seat of the hydatid cyst and the medical imagery permitted to put the diagnosis in the majority of the cases. All patients have been operated and the operative gesture was the most conservative possible and it varied according to the seat and the character of the lesion. The operative mortality is hopeless and the morbidity is at the surroundings of 20%.The human Hydatid disease provoked by the larval shape of a tapeworm of the dog: the echinococcus granulosus. It is an anthroozoonose that rages in several countries from the world to the endemic state. The localizations of predilection are the liver and the lungs of which they represent 85% of the cases; but in practice all organ can be reached. We returned in this survey 64 cases of rare and unaccustomed localizations of hydatid cyst. In conclusion, the hydatid cyst constitutes a real public health problem. It is always necessary to think of it especially among subjects living in a country to elevated endemic and to ask for the necessary complementary exams to put the diagnosis and to avoid therapeutic mistakes. The eradication of this affection rests on the prophylaxis.

Keywords: Cyst hydatid, Hydatid disease, Echinococcosis, Rare localizations, Diagnosis and treatment

INTRODUCTION

The hydatid cyst is a cosmopolitan parasitic infection which constitutes a real problem of the public health in the cattle-breeding areas of developing countries.

It seemed to us useful, saw the endemic character of the hydatid disease in our country, to report especially the rare and unusual localizations of the hydatid cyst operated in our service.

MATERIALS AND METHODS

We report the result of a retrospective study of 64 unusual localizations of hydatid cysts brought together in the service of general surgery of the military hospital over a period of 17 years (1990-2007). This represents 11,32 % , 565 of the hydatid cysts operated in the service any localizations confused during the same period.

The average age of our patients is of 35 years with going extremes of 9 at 66 years. The sex ratio is of the order of 2 Men/1Women.

The clinical symptom depended on the seat of the hydatid cyst and the abdominal echograph realized at all our sick allowed to make the diagnosis in the majority of the cases. The abdominal scanner has reliability for the topographic diagnosis in 90 % of the cases. The intra venous urography realized at four sick presenting a hydatid cyst of the kidney showed signs of expulsion and compression, these four cases were excluded from our study because the surgical care was confided to our colleague's urologists of the hospital.

The unusual seat of these cysts distributed in the following way

- 17 cases of muscular hydatid cysts;
- 14 cases of spleen hydatid cysts ;
- 2 hydatid of the pancreas cysts;
- A hydatid of the heart cyst;
- And 30 cases of peritoneal hydatidosis.

In our series we report 17 cases of the muscular hydatid cyst, this represents 3 % of 565 hydatid cysts

operated in the service. The average age of the patients is 37,8 with a male ascendancy of 66,6 % of the cases. The clinical signs were dominated by atypical pains for the deep localizations and a tumoral syndrom when the cyst is peripheral. The discovery was fortuitous in 4 patients. The standard radiography showed a basi thoracic opacity in the right diaphragm and an image of pleurisy for a diaphragmatic cyst broken in the left pleura. The echograph and the scanner specified the exact seat in 60 % of the cases.

The lesional topography is especially dominated by diaphragmatic and of the psoas infringements (Table 1) All the patients were operated, the way at first was elective for the peripheral localizations while for the deep localizations it differs according to the muscular infringement (Table 2) .The treatment consisted of a resection of the striking dome or in a partial or total perikystectomy (Table 3). The Consequences were marked by a crural paralysis spontaneously resolute and a enkysted pleurisy operated successfully. A single case of second recurrence of a cyst of the diaphragm two years after the first intervention is successfully operated.

The spleen localization occupies the fourth place after the liver, the lungs and the muscle. The frequency is 2.47 %. The average age is of 39 years with extremes of 27 at 60 years and so many women as men. Clinically, the symptom was dominated by the pains of the left hypochondria and a splenomegaly. A feverish syndrome at 3 sick in touch with an under diaphragmatic abscess secondary to a resection of the striking dome of a hydatid cyst of the spleen in other formations (Table 4).

The imaging made the diagnosis in every case by specifying the diameter and the exact seat of cysts (Fig. 2) .The biology was without specificity in this pathology. All our sick were operated (Table 5). The follow up were simple and the morbidity amounted in two cases of syndromes Feverish in touch with lung infections handled effectively by an adapted antibiotic treatment. No case of second recurrence was noticed.

Two hydatid cysts of the pancreas at 52 and 32-year-old patients respectively. This represents 0,35 % of all the hydatid cysts operated in the service. The clinical symptom was dominated by the epigastric pain associated with a feverish syndrome, and by the palpation of an abdominal mass in a case.

The echograph and the abdominal scanner showed a cystic image at the level of the pancreas without specifying the hydatid nature of this lesion. Both operated by a median way and it is only in per operating that the diagnosis of the hydatid cyst was established. The operating gesture consisted besides the usual treatment of the hydatid cyst in a resection of the dome with external drainage in a case and a kysto

gastrostomy in the other case .The consequences were simple, no case of second recurrence.

Exceptionally the cyst can be located at the level of the heart, its frequency is 0.17 % of all the localizations. The liver and the lungs occupy a big place with respectively 82.8 and 7.5 %. It is the case of a 31-year-old patient without pathological histories admitted for a dyspnoea of effort with palpitations and a point of left quotation. The lung radiography showed a cardiomegaly and in the echotomography a cystic image full of vesicles falling on the cardiac area evoking a pericardiac hydatid cyst stadeIII . The scanner confirmed the diagnosis (Fig. 3). it was operated by a Left thoracotomy with realization of a pericardotomy, extraction of the prolifere membrane and economic resection of the circumferences of the cyst and a thoracic drainage. The follow up were simple with a good clinical and radiological evolution. No sign of second recurrence on a backward movement of two years.

Our series contains also 30 cases of peritoneal hydatidosis this represents 5.3 % of 565 hydatid cysts brought together during this period. The average age of our patients was 31years with extremes of 15 at 60years and an ascendancy of the male genital organ. 4 sick had histories of hydatid cyst of the liver operated previously. This hydatidosis was primitive in 8 cases (26,6 %). The symptom was dominated by the pain and the abdominal masses. The abdominal echograph realized 25 times asserted the diagnosis of hydatid disease in 95 % of the cases but is reliable only in 55 % of the cases. The scanner was realized at 18 sick only, its reliability is 90 % of the cases for the precise topographic diagnosis.

All the sick were operated, the way at first most used is the median. The exploration showed 10 cysts at the level of the big epiploon, 4 at the level of the young epiploon, 8 at the level of the douglas and 2 cysts of the cross-functional mesocolon. The lesional association made with 25 hydatid cysts of the liver, 3 diaphragmatic cysts and two spleen hydatid cysts (Fig. 4). The surgical treatment consisted of a total kystectomy in ten cases partner in an omentectomy every time it was necessary, a total perikystectomy at 12 sick, a resection of the dome jutting out for cysts localized at the level of the douglas. The associated gestures consisted of a resection of the dome jutting out for 18 hydatid cysts of the liver, 7 partial perikystectomy, two resection of the dome for diaphragmatic cysts and two partial splenectomy for hydatid cysts of the spleen. The medical treatment with albendazole was established at 12 patients because of the very high cost. The mortality is nil, the morbidity is of the order of 20 %, made by an occlusion of hail by a vesicle girl omitted on the mesentery and taken back surgically in third days, two abscesses of the douglas, a punctured pleurisy and an

unexplained feverish syndrome having evolved well under treatment. No case of second recurrence.

Table 1: Lesional topography of muscular hydatid

Lesional topography of muscular hydatid cysts	Number of cases	Percentage
Diaphragm	7	41,17
Psoas	5	29,41
Triceps	1	5,88
Sartorius	1	5,88
Gluteus	1	5,88
Anterior Jambier	1	5,88
Intercostal	1	5,88

Table 2: Ways at first deep muscular hydatid cysts

First ways	Number of cases	Percentage
Median	4	40
Median + Thoracotomy	1	10
under costal	3	30
Bi under costal	2	20

Table 3: Modalities of the surgical treatment of muscular hydatid cysts

Methods	Number of cases	Percentage
Resection of the striking dome	7	41,17
Total perikystectomy	6	35,29
partiel perikystectomy	4	23,52

Table 4: clinical symptoms of hydatid cyst of spleen

Symptoms	Number of cases	Percentage
Pain	12	85,71
Splenomegaly	5	35,71
Fever	3	21,42
Abdominal mass	3	21,42

Table 5: Modalities of the surgical treatment of hydatid cysts of spleen

Méthods	Number of cases	Percentage
Total splenectomy	4	28,57
Partiel splenectomy	7	50
Resection of the striking dome	2	14,28
Perikystectomy	1	7,14



Fig. 1: Scan showing a voluminous hydatid cyst developed on the psoas muscle



Fig. 2: Abdominal scanner showing an enormous hydatid cyst occupying almost the totality of the spleen



Fig. 3: Sight operating view showing a spleen hydatid cyst



Fig. 4: Thoracic scanner showing a pericardium hydatid cyst



Fig. 5: Abdominal scanner showing a hepatic and spleen hydatid cyst



Fig. 6: Abdominal scanner showing hydatid cysts of the liver and the peritoneum

DISCUSSION

The human hydatidosis is a cestodose caused by the embryonic shape of a tape worm of the dog the *Echinococcus granulosus*. It is an anthrozoosis constituting a real problem of public health. The disease rages in an endemic way in certain countries of the Mediterranean Basin in Oceania and in South America. It is a disease of the rural world where is practiced the traditional breeding.

The definitive host is represented by the dog, the man is accidentally in the cycle of the parasite. The embryonic eggs eliminated in the outside environment with the saddles of the dog, are ingested, penetrate into the digestive wall, win by the system carry the liver, sometimes exceed the liver by veins known hepatic and reach lungs. The localizations at the man are varied, unique or multiple, isolated or associated whose leader of thread is represented by the liver and the lung. More rarely, the localization can be made in any point of the body by the general circulation.

Once in the internal organ, the embryo is transformed into hydatid larva. The cycle is closed when the dog devours the viscera of the lived as a parasite sheeps. The man contaminates in ingesting eggs by direct way, more rarely by indirect way (water, fruits, vegetables soiled by eggs) [1].

It is the cosmopolitan parasitosis which rages especially in areas of traditional breeding, it's frequent in Latin America, in Asia, in Australia, in the Mediterranean Basin, western Africa the main home is in Kenya, it is rare in east Africa. The prevalence at the man varies of 1 à 6,6% in Turkana when the prevalence is the highest of the world [2]. The structure of the cyst includes a hard fibro conjunctively hull which is the adventitious and the hydatid larva or hydatid vesicle, filled with clear liquid, water of rock, surrounded with two membranes: the external (day pupil) or the cuticle and the internal or proliger, with capsules of scolex [1-3].

The hydatidosis is characterized by the slowness of its evolution and by its insidious look. It is very often asymptomatic or of fortuitous discovery or during a complication. The clinical symptom when exists expenses of the localization and the seat of the cyst [3, 4].

The leader of thread is represented by liver 75 % and the lung 15 % but the localization can be made in any point of the body with a simultaneous localization to one or several viscera in 25 % of the cases [3, 5].

Of other one unusual localizations were reported in particular the bone 3 %, pleura or peritoneum 4 at 7 %, spleen and kidney 2 at 5 %, brain 1 at 5 %, heart 0,5 at 2 % [4]. More exceptionally the thyroid, the thymus the pancreas, the ovaries, the orbits, the articulations, the mild parts under cutaneous and muscular [6-12].

The peritoneal hydatidosis is first of all in our series 5,3 %, its frequency varies between 1,4 at 9,4 % [13] with a clear women ascendancy, the ascendancy of the male genital organ in our series is essentially due to the mode of recruitment of the hospital which concerns in 80 % of the cases of the military men. This hydatidosis can be primitive by hematogenic way or by migration of a hydatid cyst most of the time hepatic. It is often secondary in a break or in a discreet crack of a hepatic hydatid cyst in 66 à 85 % of the cases or spleen in 10 in 20 % of the cases according to DEVE [14]. The clinical symptom is polymorph and the medical imaging plays a stage important for the diagnosis. The treatment is surgical coupled in some cases with the medical treatment with albendazole . The is rather dark and expenses of the precocity of the diagnosis and the treatment of the primitive localizations [15].

The muscular hydatidosis is in second place in our series 3 % of all the hydatid cysts .it is exceptional even in country of endemic disease , it comes to the third rank from the liver and the lungs, while it is usually in the fourth rank after the spleen [10]. The frequency varies between 2,4 at 5,3 % [12]. This is due to the fact that the embryo hexacanth has to cross two important filters which are the liver and the lung before arriving at muscles and that the muscular fiber is the seat of a contractility and a production of lactic acid, which prevent the development of the cyst at the level of the muscle. There is no preference for the age or the sex. The clinical diagnosis is very difficult because of the lack of the signs which direct the diagnosis, and the symptoms Vary according to the muscular seat of the cyst. The radiological exploration establishes an important stage in the diagnosis of the muscular hydatid cyst .The serology is often negative in this shape because the muscular cysts are badly translated in serology [2]. The treatment is exclusively surgical basing itself essentially on the total or partial

perikystectomy. The way at first differs according to the localization of the cyst. The mortality is nil.

The third place is occupied by hydatid cysts of the spleen with 2,4 % of 565 hydatid cysts operated in the service, in the majority of the studies, it occupies the third place after the liver and the lungs with a frequency of 2 at 5,1 % of this whole parasitosis [16]. The contamination of the spleen can be made or by systematic way having crossed the most important both filters of the body which are the liver and the lung against the current by the spleen vein or lymphatic way or in a secondary way by colonization of the spleen by a cyst of neighborhood. The private hospital amounts most of the time to a pain of the left hypochondria or to a splenomegaly in 77 at 83 % of the cases [17], it is 35 % in our series, it can be misleading to type of the vomiting Digestive and urinary signs, pleura lung signs even reactional pleurisies and this according to the localization of the cyst at the level of the spleen, sometimes signs of high blood portal pressure by compression of the spleen vein [16]. The diagnosis widely benefited from the contribution of the imaging. The echograph became the examination of first intention allowing the classification of the cyst according to Hassine and Gharbi in five types [18]. The scanning has a better specificity. The serology represents a diagnostic complement; it finds the interest in the post-operative surveillance. The treatment is surgical; all the authors are unanimous on the conservation of the spleen as far as possible, the spleen being an organ lymphoïde which plays an important rôle in the immune systems of the body.

The pancreatic site of the hydatidosis remains exceptional even in the endemic countries, its difficulty is not therapeutic but diagnoses codified well in the report of Mallet and Mercadier [19]. The medical imaging largely facilitated the diagnosis which was often an operating discovery, the frequency varies between 0, 2 at 1, 6 % [4, 5, 8, 19], in our series it is 0,35 %. The contamination is made by systematic way through the mesenteric superior artery. The evolution is insidious and the symptom is variable going of the tangible mass, the signs of compression typical icterus, portable high blood pressure; pains, change of the general state or the allergic reactions further to a fissuring or a break of the cyst. The treatment is surgical and the resection Of the striking dome is the simplest and most desirable as long as to make can. In case of canalaire fistula a left pancreatectomy is realized if the cyst is corporeal and caudal or an anastomosis between the residual cavity and the jejunum if the cyst is cephalic .the suture on drain trans duodenal and trans papillaire is a alternative therapeutic [8, 19].

The cardiac localization is more exceptional with a frequency of 0,5 à 2 % of all the hydatid localizations, in

our series it is 0,17 %. The parasite gains the heart by the lung circulation, arrives at the myocardium by the coronary arteries. The hydatid cyst of the heart can be primitive and isolated (65 %) is associated with other visceral infringements (35 %) [20], essentially hepatic or lung. The clinical symptom is very polymorphic dependent of the seat of the cyst, going of the total clinical latency to fatal complications.

The echocardiography is at present the first examination has to ask to look for a hydatid cyst of the heart because of its harmlessness and of its ease of use. The scanning allows to make the diagnosis by visualizing a liquid formations at the level of the cardiac muscle and inside cavities.

The magnetic resonance imaging is interesting in case of doubt diagnosis. The treatment is essentially surgical. The surgery with closed heart concerns classically the young cysts isolated under epicardic, not complicated. Actually for most part of the authors, any hydatid cyst of the heart must be operated under corporal extra circulation [20, 21].

Other rare and unusual sites were reported in the literature such as the ovarian localizations [4, 5, 9], orbiters [10, 13], intellectual [4, 5], thymus [7], thyroid [6], parotid [22], suprarenal gland [23], mammary [24] and even at the level of the spermatic cord [25].

CONCLUSION

The hydatid cyst is a cosmopolitan parasitic infection which constitutes a real problem of the public health in the cattle-breeding areas of developing countries.

The leader of thread is represented by the liver and the lung but the cyst can be located in any point of the body.

It is always necessary to think to it especially at subjects living in a country with high endemic disease and to ask for necessary additional examinations to make of the diagnosis and avoid therapeutic errors.

The eradication of this affection bases especially on the disease prevention by the sanitary education of the populations, the supervision of the slaughter of animals, the treatment of the domestic dogs by Praziquantel and systematic euthanasia of stray dogs.

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