

Uncommon locations of abdominal hydatid disease

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SUMMARY South Chile is an endemic zoonosis area of hydatid disease, where prevalence rates can be 30 to 40/100 000 habitants. Not only is surgery performed on a great number of liver and lung hydatid cysts every year, but also upon cysts found in uncommon abdominal locations such as spleen, peritoneum and kidney. Information on this subject is scarce. We reviewed PubMed index from 1975 to 2001 and found only five related articles, reporting more than 30 cases.

Patients and methods

Forty-three patients with uncommon locations of abdominal hydatid cysts were treated and operated on (by CM) at the Surgical Department of the Regional Hospital of Temuco, Chile, from January 1994 to March 2002.

Details relating to the patients, the hydatid cyst features, surgical findings and follow-up data were collected by an independent investigator (HL). The surgical procedures used varied according to the surgical findings. Partial cystectomy¹, complete cystectomy and/or splenectomy in some spleen hydatid cyst cases were amongst the procedures performed.

Enzyme-linked immunosorbent assay-gamma G immunoglobulin (ELISA-IgG) and abdominal ultrasonography, at months 1, 6, 12, 24, 36, 48, 60, 72 and 84 of the post-surgery period, were performed to ascertain possible recurrence and/or surgical morbidity.

Results

The series of 43 patients comprised 21 men and 22 women, with a median age of 42 years (20–80 years). Fifteen (35%) had previous liver hydatid cyst surgery and 15 (35%) had associated pathology, diagnosed before the operation

- malnutrition – 5 (11.6%)
- cirrhosis – 3 (7%)
- chronic airflow obstruction – 3 (7%)
- lung hydatid cyst – 3 (7%)
- spinal hydatid cyst – 1 (2.4%)

The sensitivity of an ELISA-IgG was 78.6%. Ultrasonography demonstrated echo lucid cysts in 91% of the patients. The median cyst diameter was 13 cm (5–30 cm) and the most frequent unusual locations were the

Table 1 Uncommon abdominal hydatid cysts and affected organs (N=43)

	No. (%)
Affected organs	
Peritoneum only	13 (30.2)
Spleen only	11 (25.6)
Peritoneum and pelvis	8 (18.6)
Pelvis only	5 (11.6)
Retroperitoneum	2 (4.7)
Kidney	2 (4.7)
Spleen	
Pancreas and peritoneum	1 (2.3)
Pancreas, peritoneum and pelvis	1 (2.3)

Table 2 Uncommon abdominal hydatid cysts characteristics (N=43)

Characteristics	No. (%)
Abdominal non-hepatic cysts	
One	15 (34.9)
Two	4 (9.3)
Three	1 (2.3)
Four	4 (9.3)
Five or more*	19 (44.2)
Concomitant hepatic cysts	
None	10 (23.2)
One	11 (25.6)
Two	7 (16.3)
Three	4 (9.3)
Four or more	11 (25.6)

*In one patient 4 kg of cysts were removed; in another, 16 kg of cysts were extirpated

Table 3 Surgical procedures performed on non-hepatic abdominal hydatid cysts (N=43)

Procedures	No. (%)
Partial cystectomy	14 (32.6)
Splenectomy	5 (11.6)
Complete cystectomy	3 (7.0)
Multiple procedures	21 (48.8)

peritoneum (60.5%) and spleen (25.6%) (Table 1). Forty-two per cent had five or more cysts and 76.7% had a coexistent liver hydatid cyst (Table 2).

Partial cystectomy was the most frequent surgical procedure performed (32.6%) (Table 3). The median hospital stay was 6 days (2–31 days), and the median follow-up period 53 months (1–102 months). No mortality was observed – morbidity was 23.2%. There were five cases of medical complications (11.6%): lung atelectasia (2), acute bronchitis (1), urinary infection (1) and post-operative renal insufficiency (1). Five (11.6%) had surgical complications: abdominal collection (3), superficial wound infection (1) and evisceration (1). Three of these five required surgical procedures (the two with abdominal collection and the patient with evisceration). Three cases (6.9%) had recurrent disease in the peritoneum and pelvis, and were treated with albendazole.

Sixteen patients (37.2%) had been treated with three cycles of 30 days each with albendazole 10 mg/kg/day after surgery: they all had multiple organ disease, with

more than 20 cysts, some of which were under 0.5 cm diameter.

Discussion

Approximately 80 cases of hydatid disease are treated each year at the study hospital (45 located in the liver and 35 in the lung). In the study period (1994–2002), 682 patients with hydatidosis were treated and 43 (6.3%) had cysts in uncommon abdominal locations. This prevalence is similar to that reported in previous studies^{2–5}.

A history of previous surgery for liver hydatid cyst is generally not mentioned in the literature. In this study, 35% of the patients had been previously operated on for hepatic hydatidosis and it is likely that in a significant number of these cases either the cysts were spread during the surgery or small coexisting cysts had been unnoticed by surgeons. However, new hydatid infection is possible as most patients return to their homes and maintain old lifestyles in spite of the educational efforts made before discharge. Pancreas, kidney and spleen location pathogenesis are different because they are considered primary sites for parasites.

That 44.2% had five or more abdominal cysts demonstrates the severity and advanced level of the disease, with the parasite located in multiple organs in the abdomen and pelvis.

The more frequent uncommon locations in this series in decreasing order were peritoneum, spleen, pelvis, retroperitoneum, pancreas and kidney. This is a sequence not mentioned in previous publications, although the peritoneum has been mentioned as being the most frequent site followed by the spleen³.

It is important to mention the significant role of conservative surgery of the spleen, even in hydatid disease. Splenectomy was only performed in 45.5% of our patients. Berrada *et al.*⁶ presented 36 cases of splenic hydatid disease and compared morbidity and mortality between patients who underwent splenectomy and spleen preservation. They observed a mortality of 8.3% and morbidity of 37.5% in the splenectomy group, against 0% mortality and 16.6% morbidity in the conservative splenic surgery group. Berrada's results provide support for conservative surgery when the spleen is involved.

The 6.9% recurrence rate of this series seems satisfactory when compared with other series that report values ranging from 6.1 to 10.7%^{3,7}. It is of interest that these subjects had received albendazole after surgery, raising the question of the efficacy of a treatment which is both expensive and has a high risk factor.

The morbidity (23.2%) and mortality (0%) rates for this series are acceptable in light of the results of other groups in which they ranged between 30% to 41%^{3,7}, and 2.5% to 8.8%⁹, respectively.

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References

- Manterola C, Molina E, Fernández O, Garrido L, Acencio L, Barroso M. Partial cystectomy: a surgical alternative in liver hydatid cyst treatment. *Rev Chil Cir* 1998;**50**:621–9
- Prousalidis J. Uncommon sites of hydatid disease. *World J Surg* 1998;**22**:17–22
- Gómez R, Marcello M, Moreno E, *et al.* Incidence and surgical treatment of extrahepatic abdominal hydatidosis. *Rev Esp Enferm Dig* 1992;**82**:100–3
- Cangiotti L, Muiesan P, Begni A, *et al.* Unusual localizations of hydatid disease: an 18 year experience. *G Chir* 1994;**15**:83–6
- Karavias DD, Vagianos CE, Kakkos SK, Panagopoulos CM, Androulakis JA. Peritoneal echinococcosis. *World J Surg* 1996;**20**:337–40
- Berrada S, Ridai M, Mokhtari M. Hydatid cysts of the spleen: splenectomy or conservative surgery? *Ann Chir* 1991;**45**:434–6
- El Mansari O, Zentar A, Sair K, Sakit F, Bounaim A, Janati JM. Peritoneal hydatid cysts: apropos of 12 cases. *Ann Chir* 2000;**125**:353–7
- Abi F, el Fares F, Khaiz D, Bouzidi A. Unusual localizations of hydatid cysts: apropos of 40 cases. *J Chir* 1989;**126**:307–12
- Moumen M, el Alaoui ME, el Mansouri A, Mokhtari M, el Fares F. Peritoneal echinococcosis. Diagnostic and therapeutic problems: apropos of 34 cases. *Chirurgie* 1991;**117**:854–9

Contamination of soil with parasites in a tropical hilltribe village in Northern Thailand

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Introduction

Soil transmitted helminthic disease is a worldwide problem, and its prevalence is closely associated with climatic and geographical features¹. It is endemic in tropical countries including Thailand². Under optimal conditions the soil will be contaminated for the whole life cycle of the parasites whose larvae will reach the stage where they can infect humans³.

Many faecal examinations for intestinal parasites have been carried out in rural areas in Thailand and high infection rates have been revealed^{4,5}. However, the results obtained by faecal examination do not indicate the extent to which residents are at risk of parasitic diseases, but simply demonstrate the prevalence. Thus, soil contamination would appear to be a more reliable indicator of the risk².

Attempts to isolate the parasite ova from the soil have been made in many countries. Soil samples collected from parks, playgrounds or sandpits in Argentina, Zimbabwe and Japan^{5–7} revealed the presence of *Toxocara* ova, showing that the soil in these countries is contaminated with pet faeces. However, there have been few other similar studies in other tropical countries including in the Southeastern Asian region. In Thailand, there has been only one previous report of soil contamination².