Hydatid disease - new approach to management

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Abstract
Until 3 years ago, surgical intervention was the gold standard in management of hydatid cysts. Unfortunately it was not free of morbidity and mortality. In recent years, many advances have been made in treating hydatid disease.

In 1986, we published the first complete treatment of ruptured hydatid cyst into the biliary tree by ERCP. Since then this method has been successfully applied by us in another additional 7 cases. Other authors have also reported the endoscopic management of obstructive jaundice caused by ruptured hydatid cysts. Percutaneous drainage of liver cysts followed by irrigation has been achieved by Bret et al, Mueller and other authors. The feared side effects of anaphylaxis did not occur. In our unit, we have already treated 5 patients having 6 hydatid cysts with this method. Medical treatment has also substantially improved with the introduction of albendazole, which has been used by many authors and also by our group in 22 patients with good results but the treatment required quite a considerably long period of time for its effect. We have combined albendazole use with praziquantel with synergistic effect and shortening of the treatment period in more than 20 patients. In view of all these developments, we think that the only indication left for surgical management is the ruptured cyst into the peritoneal cavity. The new methods of management surely will reduce the morbidity and mortality of this disease and surgery in these cases might not be required any more.

Saudi Medical Journal 1996; Vol. 17 (3): 286-289

Keywords: Hydatid cyst, endoscopic management, medical treatment, percutaneous drainage

Human hydatid disease was recognised by Hippocrates over 2,000 years ago. The Arab physician, Al Rhazes made reference to hydatid disease of the liver in 900 A.D.

Echinococcus granulosus is the most common form of hydatid disease in humans. It involves mainly the liver and lungs and it can disseminate in the whole body. It is endemic in the Mediterranean areas, Middle East, South America, Australia, Baltic borders, New Zealand and Africa.

Clinical manifestation occurs as a result of gradual increase in the size of the cyst with local pressure or from rupture of the cyst into various cavities including the peritoneum, alimentary canal, biliary tree, pleural cavity, airways etc. Substantial progress has been made in the diagnosis and management of this disease, specifically with the introduction of ultrasound, MRI, CT and ERCP.

Until the last decade the only available treatment of all forms of hydatid disease was surgical management, but in the last few years a large number of publications on alternative methods of management of hydatid disease includes medical treatment, endoscopic and percutaneous methods.

We have been fortunate to be part of this development in different publications concerning endoscopic treatment and medical treatment. In view of the lower morbidity and mortality of these alternative methods, surgical management in hydatid disease might be reduced to only very specific indications. In this paper we would like to discuss the different new approaches in the management of hydatid disease.

Medical therapy in hydatid disease

1. The first drug was mebendazole. The main handicap of this drug was the poor absorption rate and increased side effects which made the therapeutic level very difficult to achieve and patients required repeated courses due to lack of response.

2. Albendazole: This drug is very promising. It is the same as mebendazole, in the benzimidazole group, usually given at a dose of 400 mg twice daily. It is less toxic than mebendazole.

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Received September 1994. Accepted for publication in final form May 1995.

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Different authors have studied the use of albendazole in hydatid cysts and our group have prospectively studied 22 patients with hydatid cyst of the liver where, followed by ultrasound, CT and some of them even MRI, the result is effective in about 80% of the patients but the main problem was the need for long term treatment. Some of the patients required more than one year of treatment and in more than 50% of the patients no disappearance of the cyst was achieved. Two patients had ruptured cysts which might be contributed to albendazole therapy by softening of the membrane. This drug has minimal side effects and we observed only temporary loss of hair in 2 patients.7,12

3. Combination of praziquantel and albendazole: Praziquantel has been shown to be effective against intestinal parasites, schistosomiasis, cysticercosis and other helminths.13-18 Praziquantel, when used as a scolocidal agent in vitro and in vivo in animal models, is found to be effective against echinococcus granulosus.19 It has been suggested by Yao Ping Li et al 1985 that praziquantel may be of value in the treatment of human echinococcus granulosus infection and Henriksen et al.20 used praziquantel alone in one patient in 1989. We reported 4 cases which were treated with a combination of albendazole and praziquantel with excellent response to therapy and a shorter period of treatment2 (Fig.1).

Endoscopic diagnosis and management of hydatid disease This method is very valuable in cases of biliary rupture of a liver cyst. Initially ERCP was used as a diagnostic procedure.21 In 1985 we published the first report on the use of ERCP with endoscopic sphincterotomy and extraction of retained echinococcus daughter cysts from the common bile duct.7 At the 6th International Symposium of Emergency of Gastroenterology, held in Munich 1986, we reported the first complete endoscopic treatment in patients with liver hydatid cysts ruptured into the biliary tree, whereby we extracted all daughter cysts from the biliary tree and irrigated the main cyst via a nasobiliary tube with hypertonic saline.4 In the meantime we have treated 8 cases in a similar way with excellent outcome and no further complications22 (Figs. 2, 3, 4). Our first case has now had a follow-up of more than 6 years without any evidence of recurrence of the cyst. In one patient we were able to extract the daughter cysts from the biliary tree and decompress the biliary tree, but we observed that the communication between the main cyst and the biliary tree was blocked so that irrigation with hypertonic saline was not possible and the patient had to have alternative therapy.

Percutaneous treatment Many reports are accumulating now in the literature showing the successful, intended or unintended, percutaneous drainage of hydatid cysts with minimal side effects and no anaphylactic shock as feared and anticipated in many of the textbooks. Mueller reported successful drainage of hepatic echinococcus cyst (1985).23 Breet et al recently reported the successful percutaneous aspiration and drainage of 13 hydatid cysts of the liver.24 Sterilisation of the cysts was achieved using different scolocidal solutions such as 10% hydrogen peroxide or hypertonic saline. No recurrence was observed in the first 12 months after percutaneous drainage in all cases and no complications occurred except for urticaria and pruritus. Khuoo et al reported also a series of patients treated by percutaneous drainage24 and in the last year we have treated 5 patients with 6 cysts25 also by the percutaneous route. In our cases no major side effects were observed but in one patient urticaria-like reaction occurred. In one patient, one year after drainage, recurrence of the cyst was observed (Fig. 5).

Conclusion In view of all progress made in the different forms of therapy, we would like to suggest the following approach to hydatid disease.

1. Medical therapy in all forms of elective cases with the use of the new combination praziquantel and albendazole.

2. Endoscopy should be the emergency treatment and diagnostic tool for biliary echinococcus. It can be successfully employed to evacuate biliary daughter cysts and to irrigate the main liver cyst resulting in complete cure of the disease. It prevents development of cholangitis.

3. Percutaneous drainage of liver cyst to be used in all forms of hydatid cyst which are not responding to medical therapy or in the case of acute presentation of signs such as obstructive jaundice without rupture into the biliary tree. This method seems to be an attractive alternative to surgery. It has the advantage of being simple and the expected side effects are minimal.

4. Surgery should be reserved for those cases who have acute rupture of the cysts into the peritoneal cavity. The method has a relatively high morbidity and mortality.
In view of the achieved developments in the treatment of hydatid disease on medical therapy, percutaneous management and endoscopic management, we think that the indication for surgical therapy in hydatid disease is now very limited.

References

ملخص:

حتى السنوات الثلاث الأخيرة كانت الجراحة هي الوسيلة المثلى لمعالجة داء الأكياس الكلابية.

وللاسف لم تكن هذه الطريقة تخلو من المضاعفات أو حتى الوفيات، وفي السنين الأخيرة حدث تقدم مضطرد في علاج هذا المرض وفي سنة 1986م نشرنا ولأول مرة عن الطريقة الكاملة في استعمال المنظار في علاج كيس داء الكلب في الكبد، والتي أنفجرت إلى مجرى المرارة، ومنذ ذلك الوقت أعلنا استعمال الطريقة نفسها في 7 حالات أخرى. وقد نشر لاحقًا عن طريقة استعمال المنظار في علاج الصفراء الناتجة عن انفجار الأكياس الكبدية إلى مجرى المرارة.

كما أن طريقة سحب سائل الأكياس الكلابية في الكبد وغسلها عن طريق الجلد نجحت سابقا كما ذكر بيرت وميلر وآخرون. كان الخوف سابقا من الصدمة الناتجة عن الحساسية، ولكن ذلك لم يحدث في أي من الحالات.

وقد تم علاج 5 مرضى مصابين بـ 6 أكياس كلابية بالطريقة نفسها عن طريق الجلد. أما العلاج الطبقي فقد تحققت فيه تقدم كذلك بعد استعمال البيبنادوزول والذي استعمله من قبل كثير من الأطباء ومن فسمنا كذلك، حيث تم علاج 22 مريضا بنتائج طبية ولكنها استدعي وقتًا طويلاً لتحقيق هذه النتائج المرضية.

ولذلك فقد تم استخدام دواعين مع هما البرازيفوكونتين مع البيبنادوزول مما حقق فعالية أفضل ووقتًا أقصر في العلاج. وقد تم استعمال هذا العلاج لأكثر من 20 مريضا بنجاح.

ونظرا لكل هذه التطورات فإننا نعتقد أن لا يبقى الأسلاوب الجراحية إلا في حالات انفجار الأكياس في التجويف البريتوني.

وإذا توقع أن يكون للعلاج الحديث المذكور تأثير مباشر في تقليل المضاعفات من هذا المرض ومن طرق علاجه، وتقليل الوفيات الناشئة عن المضاعفات بمشيئة الله، وربما يستطيع عن الجراحة في هذه الحالات نهائياً.