

Percutaneous Aspiration of a Renal Hydatid Cyst with Ultrasonographic Guidance

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Abstract

Hydatid cysts are slowly enlarging cystic masses caused by a parasite named *Echinococcus granulosus*. The most frequent locations of the cysts are liver and lungs. They can be rarely located in kidney. We present our case of the renal hydatid cyst that we used the percutaneous aspiration method. The 9 years old male patient, with the opaque tomography a cystic mass was detected in the right kidney that was partly egzotific located with a thin periphery and a size of 12 × 8 plain contour observing septations in it. With the accordance of ultrasonography we performed (Puncture, aspiration, injection, reaspiration) (PAIR) procedure. Six months later during the ultrasonographic examination there was no fluid collection in the cyst or echogenity and it was observed that the cyst was completely collapsed. We think that this can be an alternative medical treatment for the kidney located hydatid cysts which are not related to the collective system and for the case of protection needed renal parenchyma in order not to have a loss of tissue and not to have a complication risk comparing to the previous cases.

Keywords: Hydatid Cyst, *Echinococcus Granulosus*, Percutaneous Aspiration

1. Introduction

Hydatid cysts are slowly enlarging cystic masses caused by a parasite named *Echinococcus granulosus*. They are common in the areas that deal with animal husbandry such as Asia, Australia, South America, the Near East and South Europe [1]. The incidence in Turkey is very high and they are seen in the 4.4 of 100.000 people. They are common at every age, however they are more frequent for the children that adults [2].

The most frequent locations of the cysts are liver [3] and lungs [3,4]. They can be rarely located in brain [5], bone [6], kidney [1,7] and pancreas [8,9]. The kidney located cysts are with a frequency of 2-3 % of all patients.

Although the liver and lung located cysts can be treated with the usage of albendazole and mebendazole medically, there is not any data about the medical treatment for the kidney located cysts and the treatment is generally surgical and in selective cases [10,11]. Although the method of percutaneous aspiration is especially used for liver located hydatid cysts, it can also be preferred for the renal hydatid cysts under the prophylaxis [12].

We present our case of the renal hydatid cyst that we used the percutaneous aspiration method.

1.1. Case

The 9 years old male patient had the complaint of abdominal fullness and with ultrasonography a hydatid cyst in the liver was diagnosed that was a plain contour at the size of 12 × 8 cm. Upon the diagnosis the patient was referred to our clinic.

The abdominal examination of the patient was normal and no mass was palpated there. The serology of the hydatid cyst was Ig G 1/2500, the tests of liver and kidney functions, urinary microscopy are normal. Albendazole treatment was started lasting for three months. After three months the patient was examined with the ultrasonography (US) (**Figure 1**) and it was detected that the right kidney had a compressed appearance because of the cyst and there was grade I ectasia in the collective system. With the opaque tomography (**Figure 2**) a cystic mass was detected in the right kidney that was partly egzotific located, pressuring the renal parenchyma, with a thin periphery and a size of 12 × 8 plain contour observ-

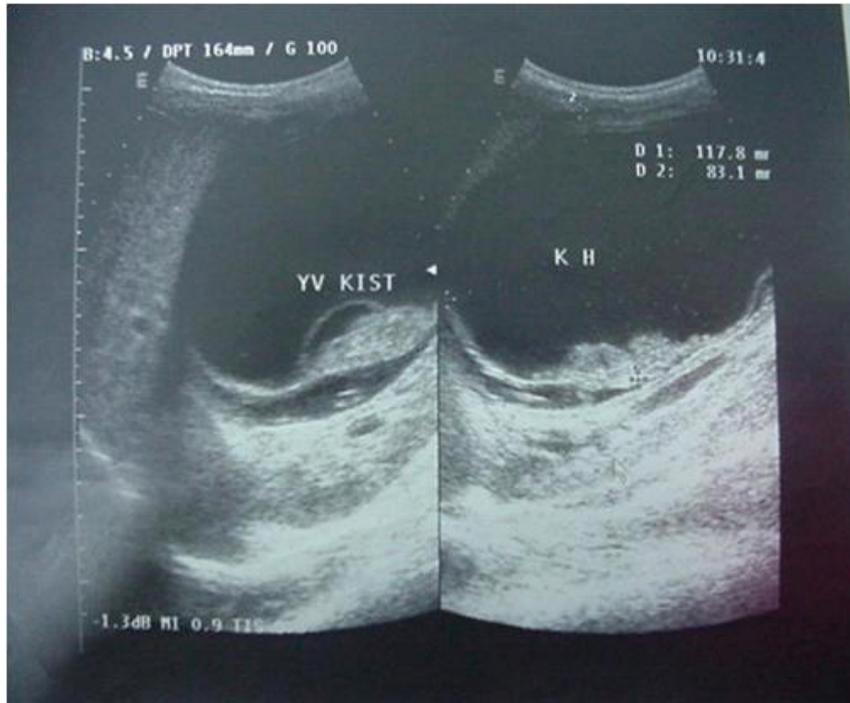


Figure 1. Ultrasonographic appearance of the cyst. The right kidney had a compressed appearance because of the cyst and there was grade I ectasia in the collective system.

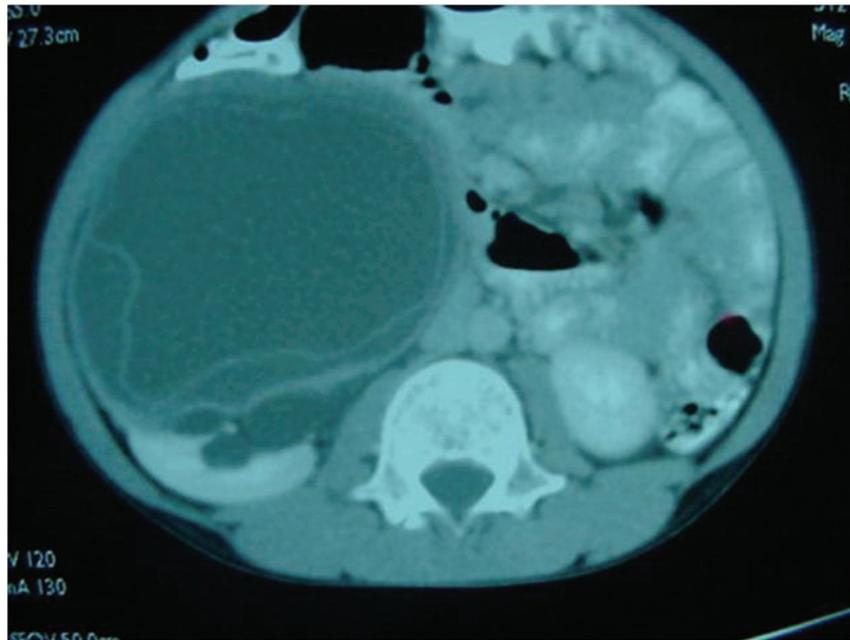


Figure 2. The opaque tomographic appearance of the cystic mass. The right kidney that was partly exotopic located, pressuring the renal parenchyma, with a thin periphery and observing septations in it.

ing septations in it. It was seen that the cyst was not relevant with the collective system of kidney. Later 8F was located into the cyst with the accordance of ultrasonography and the 260 cc cystic fluid was drained. The inside of the cyst was filled with 30 % NaCl and witing

for ten minutes it was aspirated again. In case there will be drainage anaphylaxis and a laryngeal oedema, the operation was done in the operating room with the emergent equipment.

Ultrasonographic control showed that cyst was com-

pletely drained and cystic cavity was totally collapsed. Albendazole treatment was continued for three months following intervention. Six months postintervention control revealed no complication.

The conventional treatment of hydatid disease is surgical. For hydatid cyst of the kidney, enucleation of the cyst, cystectomy, partial or total nephrectomy can be performed related to its localization. As in our case, in selected cases with hydatid cyst, percutaneous drainage may be utilized with the major aim of preservation of renal parenchyma. Postoperative with the ultrasonographic examination on the first day, the drained was stopped and the patient was discharged from the hospital after it was seen that the cyst was drained completely and the periphery of the cyst was shrivelled. Postoperative the prophylaxis was done for a month. Six months later during the ultrasonographic examination there was no fluid collection in the cyst or echogenity and it was observed that the cyst was completely collapsed.

2. Discussion

EG is a parasite that lives in the intestinal system of the adult infected dogs [13]. The eggs of this parasite are ejected by the small intestine feces and they are swallowed by lambs, cattle, goats or humans. The humans can also be swallowed them by means of drinking water and food or by toughing the dogs directly. The capsules of these eggs are opened after they come to the human intestines and the come out larva penetrates to the jejunum, venous and lymphatic system can be located in any organ [1].

Cysts that are the rarely in kidneys are unique and locate at the cortex kidney [1]. For the renal hydatid cysts the only pathognomonic diagnosis is hydatidore, but they can only be seen if the cyst is related to the collective system and they can be seen in the 5-28% of the patients [10]. The diagnosis for these patients are nonspecific and they are usually the mass in the flank area and the symptoms depends on its pressure [7,14]. Acute retention of urine and anuria can be rarely seen [1,15].

The treatment for the hydatid cysts on every organ is usually surgical operation [10]. Related to the location and the size of the cyst, the operations can be enucleation, cystectomy [9,10]. Especially for the renal hydatid cysts on the surface, the surgical operation is recommended and for the cysts in the parenchyma is recommended [9]. However, the loss of parenchyma at different rates is possible for these patients and this situation make the surgeons to search for an alternative treatment.

It is believed to be contraindicated for the hydatid cysts because of the cyst high percutaneous drainage cyst rupture and also anaphylactic shock progress risk [3].

Prophylaxis cyst material's being nonantigenic and its having less anaphylaxis risk are very important [12]. Moreover, it is declared that the prophylaxis decreases the tension on the cyst periphery and the risk of its spread. Percutaneous nephrostomy was tried in 1973 by Roylance and his friends, but it could not be used for a long time because of the complications such as acute anaphylaxis, laryngeal oedema, respirator arrest and the spread of hydatid cyst. However, McCorkell examined the injection aspiration for diagnosis of the lungs masses that were hard to diagnosed radiologically declared that three of these masses were hydatid cysts and after the aspiration there would be no problem [16]. Later Mueller used this method for the treatment of a liver located hydatid cyst and he succeeded [17]. By this method, accordance with the ultrasonography and BT a hypertonic saline solution (15% saline solution) was aspired with an injection or a thin catheter and the ingredient was aspired again (Puncture, aspiration, injection, reaspiration) (PAIR). This was repeated until the endocyst was separated. Many authors justify that this method is very effective and safe [3]. Goel and his friends said that the need for nephrectomy was increased for the laparotomy, only one of the four patients needed nephrectomy because of the severe inflection and bleeding. They declared that the four of them would need nephrectomy if these operations were laparotomy [12].

We think that this can be an alternative medical treatment for the kidney located hydatid cysts which are not related to the collective system and for the case of protection needed renal parenchyma in order not to have a loss of tissue and not to have a complication risk comparing to the previous cases. By this method, the postoperative time of staying in hospital is shorter than before. For laparotomy, the retroperitoneal spread can occur. That's why; (especially for the prophylaxis) we think that retroperitoneal spread can be neglected considering the possibilities for the percutaneous drainage.

3. References

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