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Percutaneous Treatment of Complex Hydatid Cyst of the Liver Using Radio-Frequency; Report of the First Case

Surgical removal of a hydatid cyst is still considered the gold standard treatment in many countries. In recent years, percutaneous drainage has been increasingly favored as an alternative to surgery and chemotherapy alone, and has also been shown to be effective. The procedure has been commonly called PAIR (Percutaneous Aspiration, Injection of scolicide agent and Reaspiration). However, the terminology PAIR is not sufficient in our opinion as it excludes alcohol injection. In spite of recent progresses, percutaneous treatment for liver echinococcal cysts is still far from satisfactory in case of complex septated cysts, and new techniques have to emerge. However, the PAIR technique has been considered safe and efficient, and published by the World Health Organization (WHO informal working group on echinococcosis), collecting the data from selected centers, including our experience.^{1,2}

We report on the first observation of percutaneous treatment of a complex hydatid cyst of the liver, using radio-frequency as a scolicial method.

Patient and Method

A 28-year-old Tunisian man, without any particular medical history, was referred for upper quadrant abdominal pain, with radiation to the back. He was in good condition. Sonography and computed tomodensitometry showed a large 14 cm septated cyst of the posterior part of the right lobe of the liver. Hydatid serology was strongly positive and hepatic function tests were normal. An oral albendazole treatment (800 mg per day) was started 3 days before the percutaneous treatment, for an 8-week period. The whole percutaneous procedure was performed with real-time sonographic control (Kontron Sigma 880, 3.5 MHz probe), under general anesthesia. Using a right sagittal plane, with an anterior approach intended to interpose normal hepatic parenchyma between the hepatic capsule and the cyst, a fine-needle (22 Gauge) aspiration was first performed. It allowed checking the appearance of the cyst content, which was clear as water without bile contamination and also to decrease the cystic pressure. Twenty milliliters of the aspirate was sent for parasitological examination to confirm the presence of live scoleces. Then, a 150-mm length electrode (active naked 20 mm tip) was inserted into the cyst and connected to a generator (Radionics-Tyco CT 1520). The initial impedance was 50 ohms and the maximal power (195 – 200 watts) was used all along the procedure. The treatment was applied for 12 minutes at two different locations for a cumulative 24 minutes' time. Then, 4 fine-needle punctures were inserted at different sites to collect the cystic contents and to check that all the scoleces were destroyed. Moreover, 40 ml of sterile absolute alcohol was injected in order to induce a retraction of the treated cavity.

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Figure 1: Septated echinococcal cyst of the liver measuring 14 cm prior to radio-frequency (RF) application.



Figure 2: Same patient, following RF treatment. There is a marked reduction in the size of the lesion and absence of the fluid-containing pockets.

An allergic reaction with bronchospasm occurred at the end of the procedure, between the 43th and the 45th minutes, which was treated medically without any sequels.

Two weeks after the procedure, the patient was in good condition. The hepatic and blood tests were normal. The cyst had a pseudo-solid sonographic appearance and measured 10 cm in its largest diameter.

This first observation indicates that radio-frequency, used percutaneously under sonographic guidance, may be used as a scolicedal agent in case of

complex septated hydatid cysts of the liver. Further observations and follow-ups of these patients are required to determine how this new therapeutic modality can be integrated in the therapeutic strategy of hydatid cysts.

References

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