

# HYDATID CYST ASSOCIATED WITH PREGNANCY: A CASE REPORT AND REVIEW OF THE LITERATURE

Saeed Abu-Eshy, FRCS, FACS, FICS; M. Elamin Ali, FRCOG, MPH

Hippocrates described the human *Echinococcus* disease more than two thousand years ago with the peculiar term "liver filled with water."<sup>1</sup> Al-Rahzes, the famous Arabian physician, subsequently wrote on hydatid cyst of the liver about a thousand years ago.<sup>2</sup> However, the life cycle of the parasite was only recognized in 1928 by Dew et al.<sup>3</sup> In Saudi Arabia, hydatid disease is not uncommon, and surgery for the treatment of this disease constitutes 0.3% of the operative general surgical load and 5% of all major surgical procedures.<sup>4,5</sup> The highest prevalence of the disease has been reported in the southwestern region of the country.<sup>5</sup> Despite a plethora of publications on echinococcosis, little is known about the disease in pregnant women. The incidence of the disease in pregnancy is as low as 1 in 20,000-30,000.<sup>6-8</sup>

In this report we present a case of hydatid disease of the liver which was diagnosed late in pregnancy and was successfully treated surgically at Asir Central Hospital, Abha, Saudi Arabia. We studied the clinical interaction of pregnancy with the disease and the reasons for the high prevalence in this region of Saudi Arabia.

## Case Report

A 37-year-old Saudi female was admitted at 32 weeks of pregnancy with pain in the right hypochondrium of three years' duration, which became severe just prior to admission, and was accompanied by nausea and vomiting. She gave a history of contact with domestic animals. Physical examination revealed a 32 weeks' gravid uterus and mild tenderness in the right hypochondrium. Hematological and biochemical investigations were normal, but the ultrasound scan (USS) confirmed a 32-week viable fetus, together with a cystic lesion (5x11 cm) in the right lobe of the liver consistent with hydatid disease. No serological tests were done. Before surgery, 100 mg of endomethacin was administered per rectum to prevent uterine contractions. Under general anesthesia, the

cyst was isolated, using abdominal packs soaked in 20% hypertonic saline, and was injected with the same solution through a Cryo-cone, and endocystectomy was accomplished. Hypertonic saline was also used to wash the bed of the cyst. The patient had a smooth postoperative course and was followed up until she delivered a healthy male baby weighing 2.7 kg.

## Discussion

Hydatid disease (*Echinococcus granulosus*) is endemic in the Middle East as well as in other parts of the world, including India, Africa, South America, New Zealand, Australia, Turkey and Southern Europe.<sup>9</sup> The high prevalence of the disease in the southwestern region of Saudi Arabia is due to several factors.<sup>5</sup> Most inhabitants of rural areas live in close contact with the domestic animals from which they make their living. As well, dogs are kept indoors for guarding purposes. These conditions do not prevail in urban areas.

Early marriages of Saudi women, coupled with the tendency towards a quick succession of pregnancies until late in life, increases the chances of diagnosing the disease during pregnancy. Improvements in antenatal care and the availability of USS with its high sensitivity and specificity and immunoserological tests are additional contributory factors.<sup>8</sup>

Symptoms of pregnancy, such as mild epigastric pain, nausea, vomiting and pressure symptoms, may mask the similar symptoms of hydatid disease.<sup>7,10</sup> Hydatid cysts may grow bigger due to the decreased cell immunity and the humoral effects of placental steroids.<sup>11</sup> Furthermore, rupture of cysts with consequent catastrophic anaphylactic shock and inevitable deposit of secondaries<sup>10,12,13</sup> may result from compression by the enlarging uterus. Advanced pregnancy makes the removal of the cyst difficult and hazardous, as rupture of the cyst and premature uterine contractions may occur. On the other hand, the disease may affect pregnancy by hydatid placental invasion, induction of premature labor, or obstruction of labor and uterine rupture due to pelvic hydatid cysts.<sup>7,12,14</sup>

In our case, the hydatid cyst was diagnosed at 32 weeks of gestation. It was large, and there was an imminent risk of complications in either the cyst or the pregnancy, as well as later potential problems during labor. Early

---

From the Departments of Surgery and Obstetrics and Gynecology, College of Medicine, King Saud University, Abha, Saudi Arabia.

Address reprint requests and correspondence to Dr. Abu-Eshy: Department of Surgery, College of Medicine, King Saud University, P.O. Box 641, Abha, Saudi Arabia.

Accepted for publication 21 November 1998. Received 21 July 1998.

surgical intervention was, therefore, a wise decision. To prevent spillage of the cyst contents and later recurrence, the operation was carried out by meticulous cyst isolation, using packs soaked in hypertonic saline and then aspiration through the Cryo-cone, which was applied over the most accessible parts of the cyst. The cyst bed was then washed by hypertonic saline solution. Since the pregnancy was approaching full term, premature contractions were avoided by prophylactic tocolysis in the form of prostaglandin synthetase inhibitor.

The principal treatment of hydatid cyst during pregnancy, particularly one of large size, is surgical removal.<sup>10,13,15</sup> In pregnancy, there is no place for chemotherapy with mebendazole or albendazole, as these can be embryotoxic, teratogenic and/or hepatotoxic.<sup>8,16-18</sup> Some reports in the literature have suggested short-term small prophylactic doses of chemotherapy to prevent secondary deposits.<sup>19</sup> This is controversial and we do not advocate this policy.

In conclusion, hydatid disease is common in the southwestern region of Saudi Arabia and detection of the disease during pregnancy is made easier by a high index of suspicion and routine antenatal USS. Small cysts can be treated after delivery, but large ones should be removed surgically before delivery, as they might adversely affect pregnancy and labor. There is no place for chemotherapy during pregnancy, but detection of secondaries by USS, CT scan or MRI after delivery warrants adjunctive chemotherapy. Public health measures should be adopted to eradicate infected animals and dogs in order to break the cycle of transmission.

### Acknowledgements

We would like to thank Professor Ahmed Ibrahim, Professor of Surgery, College of Medicine, Abha, for

revising the paper and Mr. Vher Crisostomo for preparing the manuscript.

### References

1. Lewis JW Jr, Koss N, Kerstein MD. A review of echinococcal disease. *Ann Surg* 1975;181:390-6.
2. Kattan YB. Intrabiliary rupture of hydatid cyst of liver. *Ann R Coll Surg England* 1977;59:108-14.
3. Saidi F. Surgery of hydatid disease. Philadelphia: WB Saunders, 1976.
4. Kidess EA, Akiel AS, Ba'aqueel HS, Malaika SS. Echinococcosis: an obstetric and gynecologic view. *Ann Saudi Med* 1988;8:202-7.
5. Malaika SS, Attayeb A, Sulaimani S, Reddy JJ. Human echinococcosis in Saudi Arabia. *Saudi Med J* 1981;2:77-84.
6. Fekih MA, Abed A, Chelli H, Khrouf M, Chelli M. Kyste hydatique pelvien et grossesse. *J Gynecol Obstet Biol Reprod* 1992;21:803-5.
7. Rahman MS, Rahman J, Lysikiewicz A. Obstetric and gynaecological presentations of hydatid disease. *Br J Obstet Gynaecol* 1982;89:665-70.
8. Wen H, New RRC, Craig PS. Diagnosis and treatment of human hydatidosis. *Br J Clin Pharm* 1993;35:565-74.
9. Goel MC, Agarwal MR, Misra A. Percutaneous drainage of renal hydatid cyst: early results and follow-up. *Br J Urol* 1995;75:724-8.
10. Crow JP, Larry M, Vento EG, Prinz RA. Echinococcal disease of the liver in pregnancy. *HPB Surgery* 1990;2:115-9.
11. Kain KC, Keystone JS. Recurrent hydatid disease during pregnancy. *Am J Obstet Gynecol* 1988;159:1216-21.
12. Kidess E. Beitrag zur Echinokokkus-Erkrankung des weiblichen Genitale. *Zbl Gynaek* 1967;89:1569-75.
13. Fisher M, Kasis S, Oren M. Echinococcosis in pregnancy. *Harefuah* 1992;12:770-1.
14. Ammann R, Hisbrunner R, Cotting J, Steiger JP, Eckert J. Recurrence rate after discontinuation of long-term mebendazole therapy in alveolar *Echinococcus*. *Am J Trop Med Hyg* 1990;43:506-15.
15. Semchyshyn S. *Echinococcus* discovered during pregnancy. *Am J Obstet Gynecol* 1974;118:283-4.
16. Morris DL, Dyke PW, Mariner S, et al. Albendazole: objective evidence of response in human hydatid disease. *JAMA* 1985;253: 2053-7.
17. Morris DL, Smith PG. Albendazole in hydatid disease: hepatocellular toxicity. *Trans R Soc Trop Med Hyg* 1987;81:343-4.
18. Golaszewski T, Susani M, Golaszewski S, et al. A large hydatid cyst of the liver with pregnancy. *Arch Gynecol Obstet* 1995;256:43-7.
19. Delitala P, Addis M. Intezione echinocuccica sperimentale attraverso la placenta. *Studi Sassaressis* 1977;15:75-85.