Minimally invasive treatment of live ectopic pregnancy

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Summary

Four cases of live ectopic (three tubal, one cornual) pregnancies managed by ultrasonographic puncture injection technique are described. The technique proves to be a practical, effective and conservative treatment.

Key words: Live ectopic pregnancy; Transvaginal ultrasonography; Potassium Chloride; Methotrexate.

Introduction

The classical treatment of ectopic live pregnancy is surgical resection of the involved tissue either laparoscopically or by laparatomy [1]. The introduction of transvaginal sonography has made the diagnosis of ectopic pregnancy more accurate and timely, and has also provided a means for puncture injection treatment. In this paper, four live ectopic cleared pregnancies, managed by injection of potassium chloride and methotrexate are reported.

Clinical cases and methods

Ectopic gestations localized to the ampullar portion of the uterine tube were diagnosed in three patients, while in one patient, the gestation was localized to the cornual area of the uterus as revealed by transvaginal sonography between 7 and 9 weeks pregnancy. Positive serum ß-hCG titer indicating pregnancy together with an empty uterine cavity and a fetus with cardiac activity seen separately and localized ectopically were detected in all cases. The serum ß-hCG levels were 8200, 3700, 13200 and 1500 mIU/mL. The procedures were perfomed on an outpatient set-up under local anesthesia. The punctures were performed using a 21-gauge needle attached to a 5.0-7.5 MHz vaginal ultrasound probe. 0.5-1 mL potassium chloride of 2 mEq/mL was injected. Cessation of fetal cardiac activities was monitored by ultrasonographic examination for 10-15 minutes, 25 mg of methotrexate in 1 mL solution was injected afterwards. Serum ß-hCG level measurements and ultrasonographic examinations were performed at weekly intervals after the procedures. No bleeding was seen during or after the punctures procedures. The ß-hCG levels returned to nonpregnant levels in 21-49 days after the treatment. Regular menstrual cycles resumed in all patients shortly after the return of ß-hCG to non pregnant levels. Ultrasonographic examinations performed six months after the treatment demonstrated complete resolution of the lesions. Hysterosalpingographic examination of the patients, performed six months to one year after the procedure revealed bilateral tubal patency and normal uterine anatomy in all patients.

Discussion

An unorthodox treatment of ectopic live pregnancies has been presented. The classical and more common approach to this clinical problem has usually been surgical extirpation. The common use of the technique of transvaginally directed puncture procedures especially for egg retrieval and for multifetal pregnancy reductions, led jointly to the idea of salpingocentesis. This new approach has been used as a new treatment modality for tubal ectopic pregnancy [2, 3]. The puncture and injection technique, performed with a 21-gauge needle under constant transvaginal monitoring, carries a low risk for the patient [4-6]. Although the study is based on a limited number of patients, the results clearly demonstrate that this minimally invasive technique performed under transvaginal ultrasound guidance is a safe and effective treatment for live ectopic pregnancy. Although an injection of potassium chloride or methotrexate alone has been used to treat early ectopic pregnancy [1], in cases with live ectopic pregnancy sequential injections of these two agents may be needed. The injection of potassium chloride successfully stops cardiac activity, while the methotrexate injection, performed following the cessation of cardiac activity, virtually stops DNA synthesis in rapidly dividing trophoblastic cells. This apporach allows the rapid return of ß-hCG to nonpregnant levels and enhances the complete resolution of the lesion, which in turn decreases the follow-up period and the time of patient visits to the hospital. This minimally invasive management of live ectopic pregnancy can also preserve the fertility potential of patients.

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