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CASE REPORT

Pregnancy following Transvaginal Ultrasound-Guided Aspiration and Sclerotherapy of Endometrioma

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ABSTRACT

Many researchers have tried for aspiration of endometrioma followed by alcohol or tetracycline sclerotherapy in order to avoid delicate surgical procedure as well as to keep a functioning ovarian reserve. It has traditionally being used for recurrent cases of endometriomas. But this case report illustrates the importance of applying this procedure in unavoidable and exceptional circumstances.

Keywords: Endometrioma, Sclerotherapy, Ultrasound-guided aspiration.

INTRODUCTION

Aspiration sclerotherapy has traditionally been used by many researchers for recurrent endometriomas. The strategies behind recurrent endometriomas are many, the cyst walls are difficult to remove because of its surrounding adhesions caused by endometriosis and by the previous surgery. Apart from that, cauterization or fulguration further destroys the ovarian tissue resulting in a decreased ovarian reserve. Many researchers have used this technique to remove the endometrioma followed by quick IUI and IVF cycles. Aspiration sclerotherapy is a relative less invasive form of surgery which can be done on an out patient basis, using short-term anesthetic agent, like propofol, without hospital stay and providing convenience for the patient and her family. It also preserves the ovarian reserve, a key factor for patients planning to undergo IUI or IVF. This procedure entails the ultrasound-guided aspiration of an ovarian cyst, followed by the insertion of a sclerosing agent (95% ethyl alcohol or 5% tetracycline solution), which chemically destroys the cyst lining so as to prevent the regrowth of the cyst. It is performed in a manner similar to an egg retrieval procedure in IVF (*in vitro* fertilization). The procedure takes approximately 20 to 30 minutes to perform, during which time the patient is under propofol anesthesia.

There are several advantages to this procedure.[1] It avoids major abdominal or laparoscopic surgery to remove the cyst, so there is, usually, considerably less recovery time and postoperative discomfort for the patient. Most importantly, for women currently desiring conception or who are concerned for their future fertility, this procedure is more likely to spare ovarian tissue containing their egg reserve. With the surgical treatments, larger amounts of ovarian tissue must be removed in order to completely remove the cyst. When the ovary is sutured, even more ovarian tissue may be compromised. When the ovarian cyst is removed surgically with a laser or electrocautery, additional healthy tissue surrounding the cyst may be lost. The advantage of sclerotherapy is that it only destroys the cyst lining by direct contact and does not penetrate into healthy ovarian tissue.

As in any medical or surgical treatment, there are certain associated risks, such as infection or internal bleeding, which may require intravenous antibiotic therapy, hospitalization, or corrective surgical intervention. Sclerotherapy has similar risks. Patients are given antibiotics prior to the procedure and again thereafter to limit the possibility of an infection or an abscess forming in the ovary. There may also be irritation or discomfort from the sclerosing agent in the abdominal and pelvic area post-operatively. To limit this possibility, after treating the cyst with the sclerosing agent for 10 minutes, the agent is removed from the cyst and the area is thoroughly rinsed with sterile saline (salt water). The pelvic and abdominal areas are also irrigated with saline to prevent chemical irritation to those regions. Postoperative discomfort is managed with pain medication and will usually resolve, if present, within 24 hours.

CASE REPORT

A 26-year-old female presented to our clinic with secondary subfertility. She had a history of left-sided ruptured tubal ectopic preganacy for which a laparotomy was done 3 years back in a substandard setting. Unfortunately, a left-sided salpingo-oophorectomy was done and the patient was left with right ovary and tube only. She had already undergone a hysterosalpingography (HSG) 6 months back, which showed patent right fallopian tube. Our baseline transvaginal ultrasound scan (TVS) revealed a big chocolate cyst (endometrioma) in the right ovary measuring 5.6/4.8 cm. Previous folliculometry on day 12 suggested an unsatisfactory ovarian response to 7.5 mg letrozole

for 5 days on day 3 to day 7 and two doses of recombinant FSH (75 IU each) on day 3 and day 9. She consulted a couple of gynecologists before coming to our clinic and all of them suggested a laparoscopic cystectomy (if needed laparotomy). We also offered her the same option. But the patient was psychologically traumatized by her previous laparotomy during which she went into shock and several units of blood transfusion had to be given. Inspite of a detailed counseling, she refused to give consent for a laparoscopy, let alone laparotomy.

As an alternative option, a TVS-guided aspiration and sclerotherapy of endometrioma was offered to her and she immediately responded to this less invasive form of treatment. Proper counseling regarding the procedure, including its risks and failure rate was discussed with the patient and her husband. Under general anesthesia, a 16 gauze double lumen ovum pick-up (OPU) needle was introduced into the endometrioma. Simultaneous aspiration by a suction pump and wash out by normal saline through a second channel of the OPU into the endometrioma was done till the fluid became clear. The fluid was sent for histopathology. About 5 ml of 95% alcohol was kept *in situ* as a sclerosing agent. The whole procedure was done under continuous TVS monitoring. We prescribed her a high dose oral contraceptive pill on continuous basis without breaks for 3 months to withhold her period. The patient was followed at 6, 10 and 14 weeks by a TVS scan. As the endometrioma regressed, ovulation induction with the same previous dose was done. This time, she developed two mature follicles in the right ovary with satisfactory endometrial thickness on day 12 scan. Serum estradiol (E2) level was also satisfactory. Patient fortunately conceived on her 4th cycle of induction. Now, she is on her 22nd week of uneventful gestation.

DISCUSSION

Chia-Lin Hsieh et al[2] assessed the effectiveness of ultrasound-guided aspiration and sclerotherapy on 108 patients for treatment of recurrent ovarian endometriomas. After aspiration, sclerotherapy with 95% ethanol irrigation of the cystic cavity was performed [group 1, n = 78, 0-10 minutes of retention; group 2, n = 30, ethanol left *in situ* (retention)]. The 1-year recurrence rate for group 2 patients was significantly lower than for group 1 patients (13.3% *vs* 32.1%). Antral follicle count was increased and pain score was decreased in both groups to a similar level. He concluded that ultrasound-guided sclerotherapy with 95% ethanol is an effective therapy for ovarian endometriomas. Retention of ethanol is more effective than irrigation only.

J Noma and N Yoshida[3] in a retrospective evaluation compared 83 women with ovarian endometriomas who underwent transvaginal aspiration and ethanol sclerotherapy at Hiroshima City Hospital between 1993 and 1998 with 30 women who underwent laparoscopic cystectomy for ovarian endometriomas during the same period. They showed that of the 74 women who were followed for more than 6 months, 11 (14.9%) had recurrent cysts. The recurrence rate of laparoscopic cystectomy was 3.8% (NS). The recurrence rate of cases instilled for less than 10 minutes was 62.5% (5/8), and that for 10 or more than 10 minutes was 9.1% (6/66) ($p < 0.001$). Their concluding remark was ethanol sclerotherapy is an effective and safe procedure and can be indicated for almost all ovarian endometriomas. Conduct of ethanol instillation for more than 10 minutes particularly for a case with a single endometrial cyst is considered most effective from the standpoint of recurrence.

Chang et al[4] tried to investigate the efficacy of sclerotherapy as an adjuvant management before ovulation induction to preserve more ovarian tissue for folliculogenesis in ART program on 32 patients with persistent or recurrent endometrioma after surgical or medical treatment. They demonstrated an encouraging clinical pregnancy rate of 34.37%. They also suggested that the increased interest in cost-effective outpatient therapy and the expected difficulty in surgical treatment of recurrent endometriomas made aspiration and sclerotherapy of endometrioma an attractive option before ovulation induction.

Messalli et al[5] reported a high success rate of alcohol scleorosis of endometriomas after ultrasound-guided aspiration in nine patients refusing standard surgical therapy.

So, most of the trials were given in recurrent cases to avoid surgery or in patients planning to undergo ART cycles. This case report is unique in this prospect that it was done in a special circumstance described above and as a first line treatment of chocolate cyst. Also, the patient was allowed for a conception by successful induction of the remaining ovary.

CONCLUSION

Ultrasound-guided alcoholic sclerotherapy of the endometriotic ovarian cysts is an effective and safe procedure usually applied to recurrent cases to preserve ovarian reserve or in patients prior to undergoing ART cycles. But the above case illustrates the importance of applying this procedure in exceptional circumstances with satisfactory result. We speculate and recommend that this procedure can be proposed as an alternative first line treatment and is indicated in patients refusing standard surgical therapy.

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