

# Acupuncture Treatment of Subfertility and Ovarian Endometrioma

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## Abstract

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**BACKGROUND:** Ovarian endometriotic cysts, also known as 'chocolate' cysts or ovarian endometriomas, appear as endometrial tissue outside the uterine cavity which grows inside ovaries. Endometriotic cysts can cause chronic pelvic pain, dysmenorrhea, dyspareunia, impairment of ovarian function in regards to subfertility, etc. Traditional Chinese Medicine (TCM) is effectively treating subfertility associated with endometriosis for years, and the treatment gives positive results in achieving pregnancy. With the acupuncture treatment, blood circulation is promoted, external physical factors - eliminated, the stasis is dissolved, the menstrual cycle is regulated, and inflammation is diminished.

**CASE REPORT:** Our treated patient is 29-year-old woman diagnosed with ovarian endometrioma, slightly - elevated prolactin levels and inability to get pregnant after trying for two years. Nineteen acupuncture treatments were done on the meridians of Pericardium, Spleen, Stomach, Liver, Ren Mai, Kidney, Large intestine, Du Mai and Bladder. After the acupuncture treatments, the endometrioma was decreased in size and the patient got pregnant spontaneously in a short period.

**CONCLUSION:** Acupuncture, as part of the TCM, gives positive results and can successfully add up to variety of non - surgical infertility treatment options in women with endometrioma(s).

## Introduction

Ovarian endometrioma is a benign, estrogen-dependent endometriosis cyst found in women of reproductive age. Infertility/subfertility is associated with ovarian endometriomas; although the exact cause is unknown, oocyte quantity and quality are thought to be affected. "Chocolate" endometriotic cysts occur in 10% of women in the most reproductive years from the age of 25 to 40. The most common locations of endometrial cells implantation are in the ovaries and the peritoneum [1]. These cysts are filled with brown - coloured unclotted thick old blood resembling liquid chocolate, so that's why they are called 'chocolate' cysts. Some cysts do not cause any symptoms, but some cause problems like irregular periods, pain and even infertility [2]. Symptoms that may occur are very painful periods, excessive swelling during the period, low - abdominal cramping, painful sexual intercourse or pain during physical activity,

chronic pelvic pain, etc. [3]. TCM treats a wide range of disorders including infertility due to ovarian endometriomas. Regarding TCM, ovarian cysts may present with kidney yang and yin deficiency (kidney energy is responsible for human reproduction), and if the energy is weak to circulate and warm the blood, it will stagnate. Cysts also may present with liver Qi stagnation or can be caused by excessive dampness, which is caused by fluid and blood stasis and, accumulated in the abdomen, it slowly becomes phlegm. Regarding TCM, if the blood doesn't circulate properly and freely throughout the body, then blood stagnation occurs, leading to disease. Some scientists say that endometriosis is an autoimmune disease, although this is neither well understood nor proven. However, autoimmune diseases can be dissolved with series of acupuncture treatments. Acupuncture improves immune response and liver function, which stimulates the nervous system to release neurotransmitters and hormones, reduces stress, improves the blood and energy circulation throughout

the whole body, reduces the chances of blood stagnation (which causes infertility and pain) and balances the energy in the body [4] [5].

## Case report

Our patient is a 29-year-old woman, with body mass index of 20, non - smoker, a lawyer, with no previous history of the abdominal surgeries, diagnosed with primary subfertility and endometrioma of the left ovary. The couple was unable to achieve pregnancy after trying for two years. Before coming to our TCM outpatient clinic, the patient has visited a couple of outpatients – medical –office - gynaecologists for fertility tests. The investigations are shown, as follows. PAP smear was normal, and microbiology swabs' cultures were negative. All program parameters were within normal limits, thus excluding the male factor of infertility. 3<sup>rd</sup> - day - menstrual - cycle hormonal panel (FSH, LH, E2, PRL, TSH, T3, T4) showed results within reference ranges for the age and the menstrual cycle phase, with the exception of slightly-elevated prolactin, measuring PRL = 32.7 ng/mL (ref. range 1.9 - 25.0 ng/mL). No anti - Mullerian - hormone (AMH) measurements were done, but transvaginal ultrasound (TVUS) antral follicle count (AFC) was 13. Few months' series of 2D/3D/4D transvaginal ultrasounds (with folliculometry) proved existence of normal ovulatory regular menstrual cycles (sonohysterography showed normal size and morphology of uterine cavity, and serial TVUSs showed proper endometrial thickness during periovulatory days, presence of monthly ~20 mm leader - follicle in the right or in the left ovary as well as ultrasound signs of ovulation in both ovaries interchangeably, regular presence of corpus luteum in the luteal phase, besides the constant presence of one endometriotic cyst measuring 37.8 x 23.9 mm in the left ovary (Figure 1), with a typical endometrioma appearance of homogenous low - level internal echoes and thick walls).



Figure 1: Endometrioma 38 x 24mm, left ovary, before acupuncture treatment

Both gynaecologists, separately, suggested hysterosalpingography or laparoscopic (LPSC) examination of tubal patency together with simultaneous LPSC removal of the cyst, but the patient rejected the suggestion for X-ray diagnostic and invasive surgical procedures (due to personal preferences) and decided to turn to acupuncture treatment. The patient opted only for acupuncture, as a treatment option of couple's subfertility. Nineteen acupuncture treatments were done in 4 months, starting from 29<sup>th</sup> March until 26<sup>th</sup> July 2016. Acupuncture treatments were done once a week, in a TCM and Acupuncture Outpatient Clinic in Skopje, Republic of Macedonia, by a licensed medical doctor - specialist in TCM and acupuncture, on room temperature, with 35 - 40 minutes duration.



Figure 2: Endometrioma and follicles, left ovary, before treatment

Fine sterile disposable 0.25 x 25 mm needles were used for the treatment (manufactured by Wuijiuing City Medical & Health Material Co., LTD). Acupuncture treatments were being done in points located on the meridians of Pericardium, Spleen, Stomach, Liver, Ren Mai, Kidney, Large intestine, Du Mai and Blader. The couple was advised to continue with regular spontaneous intercourses during periovulatory days of the cycle. After only 4 months of acupuncture treatments, the couple achieved spontaneous pregnancy. Follow - up TVUS showed viable intrauterine one - embryo - pregnancy and yellow body of pregnancy on the left ovary, as well as a decrease of the left - ovarian endometriotic cyst dimensions to 24.2 x 22.2 mm (Figure 3).



Figure 3: Reduced endometrioma 24x22mm, left ovary, after acupuncture treatment

## Discussion

A condition such as infertility can be very scary, emotionally draining and disappointing for young couples, especially for women who are trying to conceive pregnancy for the first time. Ovarian cysts appear mostly during a woman's childbearing years. Some cysts are functional and benign, but some are cancerous [6]. In our case, the patient had benign left - endometriotic ovarian cyst (Figure 2), with normal, ovulatory, regular, but very painful, menstrual cycles, without even knowing such cyst existed. Several investigations and ultrasound images of the ovaries and uterus had been done, due to unsuccessful spontaneous attempts to conceive a pregnancy, which lasted for 2 years. TVUS images showed visible endometriotic cyst of the left ovary and lab investigations showed slightly elevated prolactin levels. Ovarian cysts don't always manifest symptoms like chronic lower abdominal pain, breast tenderness, irregular menstrual periods, nausea, dizziness, painful sex (which is a case in our patient), but according to the TCM there are other symptoms and physical signs that can identify possible presence of cysts, such as pale tongue, poor appetite, depression, mood swings, constipation/diarrhea, pale face, sweating, etc. TCM suggests a couple of additional causes for endometriomas, such as stress as well as spleen, kidney, liver and lung Qi deficiency [7]. Also, the three main pathological factors that may affect the development of ovarian cysts according to TCM are blood stasis, phlegm and dampness, and each of these factors needs time to develop. Dampness and phlegm appear due to imbalanced spleen energy. The excessive dampness in the system gradually transforms into phlegm and manifests in the body as masses, lumps and cysts of various kinds, including ovarian cysts. The diet is the key for good kidney health - no alcohol, sweets, fatty, raw and cold food and beverages, only warm liquids and cooked vegetables. The major factor in causing infertility and cysts is the blood stasis when the blood is not flowing easily and smoothly along the pathways. The pain is always a side effect of blood stagnation, and the liver is the organ where the stasis is forming because of the liver stores blood and regulates menstruation [8]. The acupuncture points located on the meridians of Pericardium, Spleen, Stomach, Liver, Ren Mai, Kidney, Large intestine, Du Mai and Bladder are chosen so to bust the yang energy, nourish the kidneys, disperse stagnation, move the blood stasis, tonify the kidneys, transforms the phlegm and dampness and important immune factors which protect the placenta and the embryo are increased [9] [10].

Moreover, the patient option to choose a mode of non - invasive (less - invasive) non - surgical 'expectant management' and treatment with acupuncture maybe found its justification in the ongoing controversy on the surgical treatment of

endometriomas: whether to operate them or not? Accepted guidelines say that the surgical removal of endometriomas is not an absolute necessity in all cases of infertility before starting with infertility treatments [11]. The laparoscopic cystectomy procedure strips the cyst wall – the portion of the cyst containing the endometrial tissue. The benefits of this procedure include decreased recurrence rates, a significant reduction in pelvic pain and increase in spontaneous pregnancy rates following surgery, due to decreased ovarian inflammation which can lower follicular density. However, the main controversy associated with cystectomy is that it damages or removes healthy ovarian cortex and follicles, leading to a decrease in ovarian reserve following the procedure. In a meta-analysis comparing eight studies of ovarian endometrioma surgical treatment, the patients who had either unilateral or bilateral cystectomy had significantly lower AFC and AMH levels following the surgery than before it. Ovarian failure, a serious risk associated with cystectomy, has been reported after bilateral endometrioma cystectomy, with rates ranging from 2.3 to 3.03%. In addition to potentially removing healthy cortex, inflammation after surgery could further damage the cortex or decrease vascularisation. The damage caused by scar tissue may reduce the volume of the healthy ovary, and scar tissue may interfere with oocyte retrieval later on [12]. Furthermore, the European Society of Human Reproduction and Embryology ESHRE recommend laparoscopic surgery only in the treatment of endometriomas that are more than 4 cm in diameter, which is not a case in our patient. Many studies show that there is the difference in fertilisation/implantation/clinical pregnancy rates between patients with and without the presence of ovarian endometriosis [13]. But non - surgical 'expectant' management is also an optional potential treatment plan, as recent literature suggests that ovarian endometriomas do not negatively affect IVF/spontaneous pregnancy outcomes. However, much more research is needed to establish how ovarian endometriosis management affects infertility treatments and gross perinatal outcomes [11] [13].

In conclusion, acupuncture, as part of the TCM, gives positive results and can successfully add up to variety of non - surgical infertility treatment options in women with endometrioma(s). With the acupuncture treatments, we succeeded both to help patient get pregnant spontaneously in a short period, as well as to decrease dimensions of the ovarian endometrioma.

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