Chemoembolization through lateral sacral artery to treat uterus broad ligament pregnancy

ZHANG Jian-hao1, GUAN Sheng

Department of Intervention, the first affiliated hospital, Zhengzhou University, Zhengzhou, Henan 450052, China
jh7402@126.com

Abstract: The objective was to evaluate the clinical effect of interventional therapy of uterus broad ligament pregnancy. One case of uterus broad ligament pregnancy was performed celioscope exploration then turning to open operation. Because the gestation sac was near the ilio- vessels and the operation risk was very high, it was not disposed at last. By chemoembolization of the blood supply vessel (lateral sacral artery) of gestation sac, embryo was killed rapidly. So interventional therapy was an effective method to treat uterus broad ligament pregnancy.
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1. Introduction

Ectopic pregnancy is one kind of common acute abdomen in obstetric and gynecologic department and it is a kind of main cause of death among gravida and puerpera. Uterus broad ligament pregnancy is quite rare, especially occurred in senior age and kakogenic women. The possible pathogenesis may be that the continuous pregnancy of gestation sac between the two leaves of broad ligament after the rupture of fallopian pregnancy. Most uterus broad ligament pregnancy can be cured by performing laparoscope or open operation for exploration and focal cleaning with high success rate. The application of interventional therapy provides a new approach to treat ectopic pregnancy. The application of uterine artery embolization to cure postpartum hemorrhage and gynecological oncology has a history of decades. In recent years, this technology is adopted to treat cervical pregnancy and has gotten good effectiveness. Interventional therapy can cure uterus broad ligament pregnancy. There is no similar report in China. By chemoembolization of the blood supply vessel of gestation sac embryo can be killed and serum β-HCG descends rapidly. Meanwhile it has some advantages as follows: the risk of hemorrhage is largely reduced; the operation time is shorten; the side effects is minimized; the trauma and anesthetic risks of laparotomy are avoided.

2. Materials and methods

A 31-year-old woman presented with menelipsis 58 days, was treated with exploratory laparotomy before 1 day. Her last menstrual period had been more than 1 month earlier, she felt hypogastralgia without incentive and urine HCG was positive. So she went to the local hospital and the transvaginal ultrasonography hint that there was an ectopic pregnancy at the left adnexa and a little hydrops in cavity of uterus. The corporin of serum was 18.1ug/l and β-HCG was 38911mIU/L. “Left tubal pregnancy” was diagnosed and emergent celioscope exploration was performed. A hyacinthine mass with 40×30×20mm in left broad ligment was confirmed and near to the vessels and ureter. The doctors worried about massive hemorrhage during the dissection, so exploratory laparotomy was performed. It was found that retroperitoneal hyacinthine mass was near the ilio- vessels and the operation risk was very high. So they closed the abdomen without disposing the mass.

The patient was taken to our hospital in the way of emergency. Physical examination: vital signs stable; there was a vertical surgical scar of 10cm long covered by surgical dressing with obvious tenderness, without rebound tenderness. The ultrasound of our hospital found: the body of uterus was about 47×45×43mm; the cervix was 31mm long; the echo of muscular layer is uniformity; the separation of uterine cavity was about 8mm; the left ovary was about 34X16mm and there was no obvious abnomal echo; the right ovary was about 40×29mm inclouding a cystic echo mass of 24× 24mm; there was a low level echo area of 36×20mm with abundant blood stream signal including a sac echo about 26×13mm nearby the left ilio-vessels. A 17mm-long embryo bud could be seen in this sac echo without pulse; there was an unregular fluidity dark area as deep as 13mm in cavum Douglasi. The result of serum β-HCG was 30708 m IU/L.

Since the gestation sac was located nearby ilio-vessels and the value of β-HCG was high, it presented that the embryon activity was high. The gestation sac may rupture at any time or invade ilio-sacral vessels causing fetal massive hemorrhage. Emergency abdominal aortography (pictures 1)and bilateral internal iliac arteries angiography were performed. There was a cluster of abnormal staining at the left pelvic cavity according to the left internal iliac angiography, contrast media was dense. We

considered it was an ectopic pregnancy nidus, whose blood supply was from the left lateral sacral artery(pictures2). The volume of uterus augmented round, supplied by bilateral uterine arteries. So micro-catheter was placed to the left internal iliac artery – lateral sacral artery – gestation sac supply artery for angiography (pictures3), and MTX 80mg diluted with NS 100mL was perfused slowly, then 350-560um Gelatin Sponge particles was used to embolize the artery until the blood stream was blocked(pictures 4). The patient had no special complaint after the interventional therapy. She was treated with infection prevention , pain relief and symptomatic treatment.

3. Results

We rechecked the β-HCG every 3 days. The results were 17265 m IU/L, 12219 mIU/L, 6419 mIU/L, 4577 mIU/L, 2539 mIU/L , 1131 mIU/L , 631 mIU/L, 381 mIU/L, 156 mIU/L , 89 mIU/L , 48 mIU/L, 29 mIU/L (reference value is 0-35 mIU/L). After the value of β-HCG descended to normal, color Doppler ultrasonography showed that: there was low level echo mass with the size of 29×18mm at left ilio-vessels, with a sac echo about 26×11mm, without obvious blood stream singal around. Chinese medicine was taken orally to promote mass absorption, after 45 days β-HCG was 21mIU/L, the patient recovered and discharged.

Figure1. Through abdominal aortography there was a cluster abnormal staining at the left pelvic cavity

Figure 2. Its blood supply was from the left sacral artery

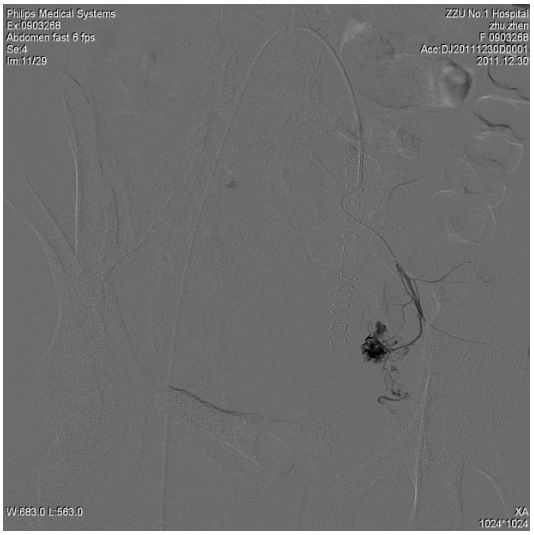

Figure 3. Angiography through micro-catheter before embolization

Figure 4. Angiography through micro-catheter after embolization

4. Discusions

Lateral sacral artery is a branch of internal iliac artery, supplying the blood to sacrum. Most lateral sacral arteries are from internal iliac artery directly, some are from superior gluteal artery or inferior gluteal artery. Lateral sacral artery is divided into two branches. The superior branch goes into the first anterior sacral foramina stretching as dorsal branches. The inferior is pachy. It goes to inside and down across the surface of sacral plexus, descending between sacral anterior foramina and sympathetic trunk, extending some branches into the 2-4 anterior sacral foramina, stretching as dorsal branches. Ectopic pregnancy is one kind of common acute abdomen in obstetric and gynecologic department with the incidence of 1/100 (Le Jie, 2008) and it is a kind of main cause of death among gravida and puerpera. Uterus broad ligament pregnancy is quite rare with the incidence of 1/245 of ectopic pregnancy(Wang Shu-zhen, 1987). Most intraligamentous pregnancy can be cured by performing laparoscope or open operation for exploration and focal cleaning with high success rate. The application of interventional therapy provides a new approach to curing ectopic pregnancy. The application of uterine artery embolization to cure postpartum hemorrhage and gynecological oncology has a history of decades. Worldwide scholars are taking this technology into the treatment of cervical pregnancy and have gotten good effectiveness (Yu B et al.,2009) (Liu Y,2004). Interventional therapy cures intraligamentous pregnancy. By chemoembolization of the blood supply vessel of gestation sac embryo can be killed and serum β-HCG descends rapidly.

In this case, celioscope exploration then turning to open operation was routinely performed without the disposal of focus. The special point was that gestation sac located at the left broad ligament near to ilio-vessels, which had extremely surgical risk. Emergency angiography showed the blood of gestation sac was supplied from the left lateral sacral artery. So chemoembolization was performed, avoiding massive hemorrhage caused by gestation sac rupture. β-HCG was decreasing to normal level and it achieved the effect of clinical cure.

Corresponding author:
Dr. SHI Hui-rong
Department of obstetric and gynecologic, the first affiliated hospital, Zhengzhou University, Zhengzhou, Henan 450052, China
E-mail: jh7202@tom.com

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