Gynandroblastoma with the symptoms of infertility and secondary amenorrhea: a case report

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Summary

The case of a female patient who failed to get pregnant due to delayed menstruation is reported. Gynecological examination showed that the patient had a male pubic distribution, hypertrophic clitoris, unobstructed vagina and hypertrophic cervices with smooth and medium texture. B ultrasonic examination detected a 42 × 30 mm in size medium echo mass. This mass had irregular shape, smooth surface, relatively clear boundary and hard texture. Examination with paraffin-embedded section indicated that the tumor was composed of supporting cells and to a lesser amount of interstitial components. Some regions had particle-like cell differentiation. These results suggested that the tumor was gynandroblastoma. We found that the increased level of serum testosterone in the patient was the reason for amenorrhea and infertility. The diagnosis and treatment for patients with gynandroblastoma is also discussed.

Key words: Amenorrhea; Female; Gynecological; Ovarian tumor; Pathological examination.

Introduction

Gynandroblastoma can occur at all ages, particularly in reproductive age of women with a mean age of 31 years [1]. Clinical symptoms depend on the proportion of tumor cells and hormone secretion. Symptoms may be associated with high estrogen, e.g., menorrhalgia, and endometrial hyperplasia psychosis. Masculine symptoms, e.g., hirsutsm, clitoral hypertrophy, amenorrhea, and low voice may also occur. In some cases there might be co-existence of both masculine and feminine symptoms. The tumors are normally present in one side and exhibit an oval shape and solid texture with a diameter of less than 6 cm.

Case Report

A 31-year-old woman (G0P0) was not able to get pregnant after five years of marriage due to delayed menstruation. She was admitted to the hospital years three after amenorrhea. No special past disease or family history was noted. The husband's semen was normal. Menarche had occurred when the patient was 14 years old. The menstrual cycle ranged from one to six months and the menstrual period was five to six days with a medium volume of menstruation. Since March 2006, amenorrhea occurred without any obvious reasons. From 2007 to 2009, multiple times artificial cycle therapy (estradiol valerate: 1 ~ 2 mg/day or a combination with estrogen: 0.625 mg/day for 21 days; progesterone < 0.2 g, once/day for 6 days administered 16 days after estrogen was used) was performed. After all these treatments, there was still no menstruation.

Physical examination showed that the patient had a body temperature of 36.8°, pulse rate of 72/min, breathing rate of 20 times/min and blood pressure of 116/70 mmHg. The patient had a relatively low voice, thick skin and slight laryngeal prominence. Heart, lung and abdomen examinations were negative. Gynecological examination showed that the patient had a male pubic distribution, hypertrophic clitoris, unobstructed vagina and hypertrophic cervices with smooth and medium texture. The uterus exhibited an anterior position with a normal size and medium texture. A mass with a size of about 3 cm in diameter was palpable in the left attachment zone. Obvious palpable abnormality was not found in the right attachment area.

Pelvic B ultrasonic examination showed that the size of the uterus was normal and the thickness of the endometrium was 3.9 mm. A strong linear echo was observed in B ultrasonic examination. A 42 × 30 mm in size medium echo mass was detected in the left ovary (total follicle counts were 11 with 8 follicles in the right ovary). Female hormone examination showed that FSH was 2.35 IU/l, LH was 22.76 IU/l, E was 2172.1 pmol/l, P was 2.51 ng/ml, PRL was 10.46 g/l and T2 was 41.4 ng/dl (female reference value of T2 is 6-82 ng/dl). Three-dimensional CT showed both adrenal glands were normal. Horseshoe changes were observed in both kidneys.

After careful preoperative preparation on August 27, 2009 uterine laparoscopy was performed under general anesthesia. No abdominal ascites was observed. The uterus and oviduct appeared normal. The right ovary was negative while the left ovary showed a mass with the size of approximately 4 cm × 3 cm × 3 cm. This mass had an irregular shape, smooth surface, relatively clear boundary and hard texture and could be fully stripped out. Hysteroscopy examination showed that the uterine cervix and cavity had a normal shape without adhesion. The endometrium was thin and flat. Both the uterine horn and oviduct could be seen. Tubal patent test showed that the oviduct was unblocked. Pathology examination showed that the left ovarian had a mass the size of 3.5 cm × 3 cm × 2.5 cm. The section of the mass was solid with a pale and sallow color. Frozen section collected during surgery suggested an ovarian stromal tumor and this tumor tended to be well differentiated. Tumor cells were not found in peritoneal washes. Examination with paraffin-embedded sections indicated a sex (ovarian-derived) cord tumor, which was mainly composed of supporting cells and to a lesser amount interstitial components. Some regions had particle-like cell differentiation. These results indicated that the tumor was consistent with gynandroblastoma. Immunohistochemistry examination showed that LCK was positive, CA125 was positive, CD99 was negative, inhibin was positive, CK was negative, EMA was negative and HCK was negative. Four days after surgery, the concentration of testosterone

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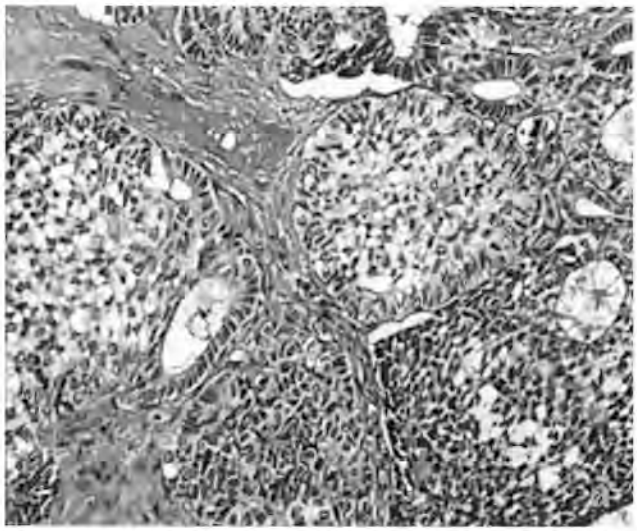
Fig. 1



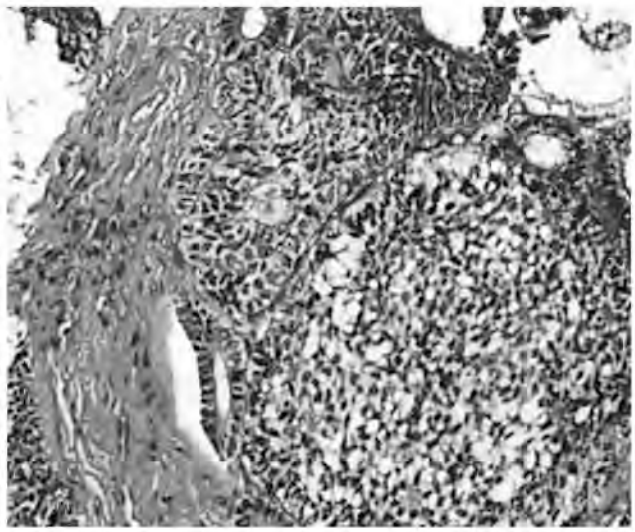


Fig. 2

Figure A and B. — The tumors contained well-differentiated granule cells and supporting cells with glandular-like distribution. Transparent Call-Exner bodies were formed in the granule cells. Proficient eosin-stained interstitial cells and thecal cells can be seen in the tumor mesenchymal tissues (HE × 100).

dropped to normal levels (7.16 ng/dl). The patient returned to normal life after one month. Five months later, she was naturally pregnant. Follow-up examination on the outcome of the pregnancy is currently ongoing.

Discussion

Gynandroblastoma was first reported by Meyer in 1930 and it was listed as a sex cord-stromal tumor based on the International Classification of Ovarian Tumors [2]. According to the WHO, gynandroblastoma refers to a granular cell tumor and the tumor components contain typical well-differentiated Call-Exner bodies or well differentiated supporting tumor cell components [3]. Only ten cases of this type of tumor have been reported and the origin of the tumor was unclear. It is possible that this type of tumor derives from gonadal mesenchymal tissue that has sex differentiation potential [4].

Since menarche, the patient reported in this study had the symptom of delayed menstruation accompanied by masculine signs, e.g., laryngeal prominence, low voice and clitoral hypertrophy. She was infertile and menopausal in reproductive age. Menstruation cannot be recovered after multiple times of artificial cycle treatment. Hysteroscopy confirmed that there was no organic disease such as intrauterine adhesions. Serum testosterone was returned to normal level several days after the mass was removed. One month after the surgery, the patient had normal menstruation, suggesting that the increased level of serum testosterone was the reason for amenorrhea and infertility.

The tumor in the patient was confirmed based on the pathological examinations. Identification of the granule and supporting cells are keys to the diagnosis. Although the majority of the tumor was benign in morphology, it was still regarded as a low-grade malignant tumor [5]. Close follow-up examinations should be performed. For the treatment of this disease, most scholars suggest removal of the attachment in the affected side or hysterectomy. For younger patients who need to keep their reproductive function, surgical removal of the affected side should be limited to the annex. However, due to the low number of cases and short period of follow-ups, accumulation of more information is needed to draw final conclusions on the treatment (Figure A and B).

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