

# A giant ovarian mucinous cystadenoma in an adolescent: a case report

Mahmut Tuncay Ozgun, Cagdas Turkyilmaz

Department of Obstetrics and Gynecology, Erciyes University, Faculty of Medicine, Kayseri, Turkey

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## Corresponding author

Mahmut Tuncay Ozgun, MD  
Erciyes University  
Faculty of Medicine  
Department of Obstetrics  
and Gynecology  
Gevher Nesibe Hospital  
38039 Kayseri, Turkey  
Phone: +90 533 655 20 14  
Fax: +90 352 437 76 14  
E-mail: mtozgun@erciyes.edu.tr,  
mtozgun@yahoo.com

## Abstract

Mucinous cystadenomas are rarely encountered in adolescent patients and can reach an enormous size. A 19-year-old woman was admitted to our clinic complaining about abdominal distension during the last four months. Physical examination revealed an immobile pelvic mass, which filled the whole abdomen and extended up to the processus xiphoideus. Tumour markers were within normal limits. The patient underwent right salpingo-oophorectomy via laparotomy. Mucinous cystadenoma was detected with histological examination. If the pure cystic mass reaches an enormous size and the tumour markers are within normal limits, mucinous cystadenomas should be considered in the differential diagnosis in adolescent patients.

**Key words:** mucinous cystadenoma, neoplasm, ovarian cyst, adolescent.

## Introduction

Mucinous cystadenomas make up approximately 10-20% of all epithelial ovarian tumours. About 75-80% of these tumours are benign [1]. They can be mostly encountered between the third and fifth decades and 5-10% of them are bilateral. These benign tumours are rare in adolescents. They are the largest tumours found in the human body [2]. They can reach any size and may occupy the whole abdominal cavity. They are generally asymptomatic and patients present with either an abdominal mass or non-specific abdominal discomfort. If the mass reaches an enormous size, it presses on the bladder, rectum and blood vessels or causes complications such as torsion, suppuration, obstruction and perforation.

The majority of ovarian masses in adolescent patients are non-epithelial in origin, with a predominance of germ cell tumours, while epithelial neoplasms make up a small proportion of ovarian masses. Mucinous cystadenomas are only sporadically reported in this age group.

Here we report a giant ovarian mucinous cystadenoma in an adolescent, one of the largest mucinous cystadenomas reported in the literature.

## Case report

A 19-year-old woman without any previously known medical problems was admitted to our clinic complaining about abdominal distension during the last four months. She had a regular menstrual cycle and had one vaginal birth one year previously. Her physical examination revealed a huge, well-defined,



**Figure 1.** Intra-operative appearance of the approximately 40 × 40 cm in diameter cystic pelvic mass including some solid regions which originated from the right ovary

immobile pelvic mass, which filled the whole pelvis and abdomen and extended up to the processus xiphoideus. The sonographic appearance of the tumour was predominantly multi-cystic with some solid regions at the margins. There was also minimal intra-abdominal fluid located around the tumour. The uterus was depressed and displaced by the tumour. The left ovary appeared normal on vaginal ultrasonography. Routine serum biochemistry, haematological evaluation, cervical cytology and tumour markers (Ca-125: 11.1 IU/ml, Ca-19.9: 6.1 IU/ml, Ca-15.3: 4.9 IU/ml,  $\alpha$ -fetoprotein: 0.9 IU/ml, hCG: 0.7 IU/ml) were all within normal limits. Her pre-operative weight and body mass index were 60 kg and 25 respectively. She did not suffer from malnutrition. The patient underwent laparotomy for a suspected ovarian tumour. A cystic pelvic mass about 40 × 40 cm in diameter including some solid regions, which originated from the right ovary, was present at surgical exploration (Figure 1). Uterus and left ovary as well as other intra-abdominal organs including the appendix appeared normal on inspection. The patient underwent right salpingo-oophorectomy with tumour removal. As a result of frozen examination mucinous cystadenoma was detected. Final histological diagnosis confirmed this result. The weight of the removed mass was approximately 20 kg. Post-operative recovery was uneventful and the patient was discharged on the sixth post-operative day. The patient was called to follow-up every 3 months. Furthermore, during a one-year follow-up period, no signs of any recurrence were observed and her weight and body mass index were 55 kg and 22.9 respectively.

## Discussion

Mucinous cystadenoma of the ovary is a benign tumour that accounts for 15% of all ovarian

neoplasms and is characterized by an intracystic fluid rich in mucus. Despite being more common in women between the third and fifth decades, it is rare in adolescent patients. It can reach any size, even occupying the entire abdominal cavity. Macroscopically, it can also weigh several kilograms as in the present case. Mucinous tumours are usually cystic, with 76% being multilocular and 24% unilocular. Only approximately 10% of mucinous tumours are bilateral, excluding metastatic spread to the contralateral ovary. The lesion has a smooth, spherical, multicystic form and in most cases is free from adhesions with neighbouring organs. The tumour cross-section generally shows smaller cysts, with spaces between of varying dimensions, separated by thin fibrous septa.

Differential diagnosis of ovarian masses in adolescence includes cyst formation, ovarian torsion, benign or malignant ovarian neoplasm and involvement of the ovary in lymphoma, leukaemia or metastatic disease [3]. Malignant transformation is uncommon, but may occur in 5-10% of cases, in particular the adenoma shapes that can induce transformation into adenocarcinoma [4]. Because of this potential, these tumours must be histologically classified and appropriately treated.

In general, management of ovarian cysts depends on the patient's age, the size and structure of the cyst and menopausal status. Conservative surgery including cystectomy or unilateral salpingo-oophorectomy is adequate for benign lesions [5, 6]. In our patient, the mass was enormous in size and there was no normal ovarian tissue grossly. Therefore, right salpingo-oophorectomy was performed. After conservative surgery, the patients must be followed up carefully because some tumours recur, especially if not completely removed during surgery. Transvaginal ultrasound recommended every 3-6 months seems to currently be the most effective diagnostic tool for the follow-up of young patients treated with conservative surgery for benign mucinous cystadenomas. For this reason, our patient was examined regularly with transvaginal ultrasonography every 3 months. During a one-year follow-up period, no signs of any recurrence were observed.

Consequently, if the pure cystic mass reaches an enormous size and the tumour markers are within normal limits, although having a relatively rare incidence, mucinous cystadenomas should be considered in the differential diagnosis in adolescent patients. Because the rate of malignant transformation of these tumours is rare, conservative surgery must be performed in younger patients. After conservative surgery, the patients must be followed up carefully for recurrence, especially if the tumour was not completely removed by surgery.

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