

Irregular dental structures in a benign ovarian cystic teratoma (dermoid cyst): case report

V. Liberis¹, P. Tsikouras¹, E. Sivridis², M. Dadidou¹, N. Koutlaki¹, G. Galazios¹

¹Department of Obstetrics and Gynecology;

²Department of Pathology Democritus University of Thrace (Greece)

Summary

Mature cystic teratomas, often referred to as dermoid cysts, are the most common germ cell tumors of the ovary in women of reproductive age. The gross pathologic appearance of a dermoid cysts is characteristic. Hair follicles, skin glands, muscle, and other tissues lie within the cyst wall. We present a case of a dermoid cyst ovarian tumor in a 24-year-old patient with a tooth lying on each wall. The mass was laparoscopically removed by ovarian cystectomy.

Key words: Ovarian dermoid cyst; Teeth; Cyst wall.

Case Report

A 24-year-old woman, gravida 0, para 0, presented with a painful lower abdominal mass of eight months duration. She reported that she often went to the emergency department with the following complaints: sharp lower abdominal pain associated with anorexia, nausea, malaise and occasionally bloody stools. The abdominal pain was noted to be increased in the mid cycle. Her last menstruation was associated with moderate abdominal pain for the first three days, but she had a normal menstrual pattern with no vaginal discharge or bleeding. In the last two months she noted dyspareunia. She had no past medical history, no systemic symptoms, no previous operations, and took no medications. Her vital signs were normal with a body temperature of 36.8°C. On the tenth mid cycle the young woman was hospitalized with recurrent abdominal pain of low to moderate intensity. The gynecological examination was unremarkable except for the left lower abdominal quadrant. She had localized rebound tenderness in this area. A pregnancy test was negative. Her blood chemistry showed no abnormality and the serum levels of CA125 were within normal range. Transvaginal sonography (TVS) was performed and showed the presence of a large inhomogeneous cystic mass 6 cm in diameter in the left ovary with numerous round, intensely hyperechoic and hypoechoic masses contained within. Doppler assessment showed the presence of normal blood flow to both ovaries. The contralateral ovary showed the classic appearance of a polycystic ovary. During the laparoscopy that ensued the following findings were noted: 1) One cyst 6 cm in size was located in the left ovary and had the appearance of an unruptured dermoid cyst, free of vegetation and macroscopically unsuspecting; 2) Soft pelvic adhesions between the left tube and bowel; 3) The right ovary had the classic image of polycystic ovary; 4) The rest of the pelvis was otherwise normal.

Initially, the surgery was performed by tubal sigmoidal adhesiolysis and puncture of the ovarian tumor followed by removal of the bulge of the cyst as well as the solid cystic elements. The cystic mass was full of sebaceous material and the wall was lined by hair follicles, skin tissue and intraoperatively in the marginal area of the tumor two developing teeth were observed (Figures 1

and 2). The cyst contents were aspirated with a 10-mm aspiration device and the bulge of the cyst was enucleated completely using a 10-mm trocar device. The cyst was removed and sent for histological processing. Subsequently, the abdominal cavity was washed once more with sodium chloride solution (about two liters) at body temperature. Bipolar cautery was used for hemostasis and the rest of the left ovarian bed with normal ovarian tissue was not sutured.

The following chromoperturbation was normal without resistance in either tube. Both fallopian tubes were inspected and found to be normal. A specific antiadhesion agent was used and placed intraoperatively into the left ovary. Particular attention was paid to carefully close the fascia and abdomen positions of the trocar incisions to avoid hernia development, incarceration of the small intestine, and local infections. A drainage was put into the Douglas pouch. The total duration of the operation was 90 minutes. All the extracted material was submitted for histopathological examination.

Postoperative histologic examination confirmed the preoperative suspicious diagnosis of a benign cystic teratoma (dermoid cyst) and showed an essentially normal formation of two dental structures. The teeth were closely situated near the cyst wall. Macroscopic examination of the teeth showed that they were premolars in form. The teeth did not change the cystic shape of the tumor. The macroscopic view of the teeth seemed to be normal and they appeared similar. However the histological examination showed several anomalies which affected the different mineralized dental tissues such as enamel hypoplasia and irregular cementum growth. The patient had an uneventful postoperative course and was released from the hospital two days after the operation. The first follow-up examination was scheduled three months postoperatively.

Discussion

Cystic teratomas are congenital tumors that contain derivatives of all three germ layers. 1) Teratomas make up 5-25% of ovarian tumors in women of reproductive age; 2) Dermoid cysts consist mainly of ectodermal tissue with some mesodermal and rare endodermal derivatives. Mesodermal elements, which include hair follicles and sweat glands on the wall of dermoid cysts, differentiate them from simple epidermoid cysts; 3) Understanding the

Revised manuscript accepted for publication September 24, 2007

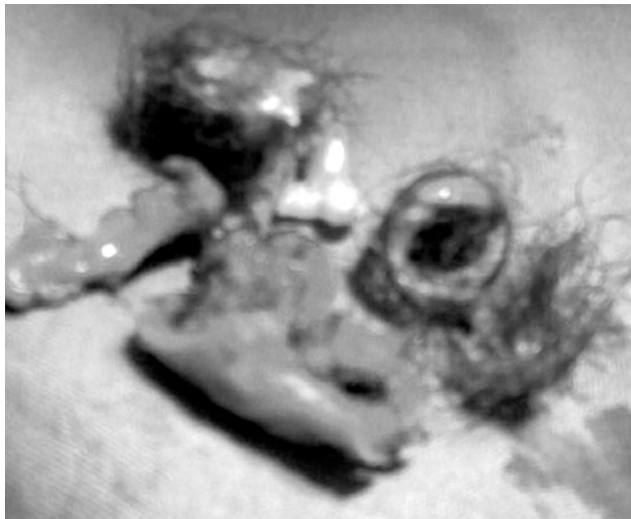


Figure 1. — The first tooth with hair follicles and cyst wall.

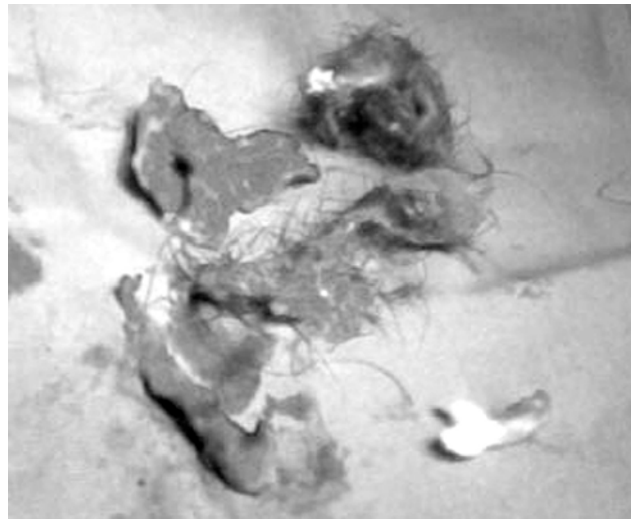


Figure 2. — The second tooth with cyst bulge and hair follicles.

atypical imaging manifestations of mature cystic teratomas permits a more specific and accurate diagnosis. Usually dermoid cysts grow slowly at an average rate of 1.8 mm each year [4, 5]. They are usually unilateral, unilocular swellings up to 15 cm in diameter. Most dermoid cysts are asymptomatic. Abdominal pain or other nonspecific symptoms occur in a minority of patients [6, 7]. Tooth-forming ovarian teratomas provide a unique opportunity to observe the effects of the tumor environment on developing dental structures. These structures in ovarian teratomas are products of normal genetic/epigenetic events modified to a greater or lesser degree by unknown factors in the tumor environment. Most teeth are not distinctly deciduous or permanent but have intermediate shapes [8]. The frequency of also single teeth or calcifications in dermoid cysts has been variously reported (31%-56%) [9, 10]. The simultaneous appearance of two teeth in dermoid cysts has not been reported. Operative laparoscopy is the technique of choice to remove most, if not all, ovarian dermoid cysts [11]. Particular strategies have been suggested to safely and easily dissect the cysts totally. Experienced laparoscopic surgeons should consider laparoscopy as an alternative to laparotomy in the management of ovarian tumors in selected cases [12]. Laparoscopic treatment of ovarian dermoid cysts is a safe method, offering many advantages in comparison to classical surgery. However, proper early qualification, based on medical history, gynecological and sonographic examination is of great importance [13].

References

- [1] Sanghera P., Modir A.E.I., Simon J.: *Arch. Gynecol. Obstet.*, 2006, 274, 178.
- [2] Morgante G., Ditto A., la Marca A., Trotta V., De Leo V.: "Surgical treatment of ovarian dermoid cysts". *Eur. J. Obstet. Gynecol. Reprod. Biol.*, 1998, 81, 47.
- [3] Gorur K., Talas D.U., Ozcan C.: "An unusual presentation of neck dermoid cyst". *Eur. Arch. Otorhinolaryngol.*, 2005, 262, 353.
- [4] Donnadieu A.C., Deffieux X., Le Ray C., Mordefroid M., Frydman R., Fernandez H.: "Unusual fast-growing ovarian cystic teratoma during pregnancy presenting with intracystic fat 'floating balls' appearance". *Fertil. Steril.*, 2006, 86, 1758.
- [5] Caspi B., Appelman Z., Rabinerson D., Zalel Y., Tulandi T., Shoham Z.: "The growth pattern of ovarian dermoid cysts: a prospective study in premenopausal and postmenopausal women". *Fertil. Steril.*, 1997, 68, 501.
- [6] Rathod K., Kale H., Narlawar R., Hardikar J., Kulkarni V., Joseph J.: "Unusual floating balls appearance of an ovarian cystic teratoma: sonographic and CT findings". *J. Clin. Ultrasound*, 2001, 29, 41.
- [7] Comerici J.T. Jr., Licciardi F., Bergh P.A., Gregori C., Breen J.L.: "Mature cystic teratoma: a clinicopathologic evaluation of 517 cases and review of the literature". *Obstet. Gynecol.*, 1994, 84, 22.
- [8] Dick H.M., Honoré L.H.: "Dental structures in benign ovarian cystic teratomas (dermoid cysts). A study of ten cases with a review of the literature". *Oral. Surg. Oral. Med. Oral. Pathol.*, 1985, 60, 299.
- [9] Caruso P.A., Marsh M.R., Minkowitz S., Karten G.: "An intense clinicopathologic study of 305 teratomas of the ovary". *Cancer*, 1971, 27, 343.
- [10] Buy J.N., Ghossain M.A., Moss A.A., Bazot M., Doucet M., Hugol D. *et al.*: "Cystic teratoma of the ovary: CT detection". *Radiology*, 1989, 171, 697.
- [11] Fasolino A., Cassese S., Fasolino M.C., Pastore E.: "Laparoscopic conservative treatment of ovarian dermoid cysts". *Minerva Ginecol.*, 2003, 55, 275.
- [12] Sait K., Simpson C.: "Ovarian teratoma diagnosis and management: case presentations". *J. Obstet. Gynaecol. Can.*, 2004, 26, 137.
- [13] Kaminski P., Gajewska M., Wielgos M., Szymusik I.: "Laparoscopic management of dermoid cysts in patients of reproductive age". *Neuro. Endocrinol. Lett.*, 2006, 27, 818.

Address reprint requests to:
 P. TSIKOURAS, M.D.
 Lysimachou/Petrina
 6 km Alexandroupolis/Makri
 Box 106
 68100 Alexandroupolis (Greece)
 e-mail: ptsikour@med.duth.gr