



## CORRESPONDENCE

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## “Sack of marble” appearance in mature cystic teratoma: an unusual finding

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## ABSTRACT

Mature cystic teratoma (Dermoid) of ovary is a benign germ cell tumor consisting predominantly of ectodermal derivatives. In rare occasion sebaceous material may get aggregated to form marble like appearance because of continuous mobility of Dermoid and its content. Such a case in a menopausal woman has been presented in this report.

**Keywords:** dermoid cyst, marbles, ovary, teratoma

## INTRODUCTION

Mature cystic teratoma, also known as benign cystic teratoma or dermoid cyst, is common benign ovarian neoplasm arising from totipotent germ cells that differentiate abnormally. Mature cystic teratoma comprises of 20- 30% of all ovarian tumors. It is mostly seen in women younger than 40 years of age and is seldom seen in postmenopausal women. Only 5-20% of cystic teratomas are found in postmenopausal women. However, occurrence of mature cystic teratoma is not uncommon in postmenopausal women. These teratoma may contain all three germ layers i.e. ectoderm, mesoderm, or endoderm. Hence they may contain hairs, teeth, skin, sebaceous material, bone, cartilage, mucous and even thyroid and neural tissues.

We present an unusual case of mature cystic teratoma of size 15 x 12 cm in a postmenopausal woman, who underwent total abdominal hysterectomy with bilateral salphingo-oophorectomy. Postoperative cut section of teratoma revealed multiple marble like appearance of sebaceous material.

## CASE

A 59-year-old female presented with gradually increasing lower abdominal swelling for last one year and dull aching lower abdominal pain. She had four term normal vaginal deliveries and reached her menopause nine years back. She was a known case of hypertensive disorder and was under antihypertensive drug

Since last five years. She had an abdomino-pelvic mass of size 15 cm x 12 cm, which was mobile from side to side and nontender.

Her tumor markers (CEA=3.5ng/ml and CA125=12U/ml) were normal and pelvic ultrasonography revealed well defined large cystic area with low level internal echoes in the right side of pelvis. CT scan showed a large hypodense lesion measuring 10x13x13cm with internal multiple rounded hypodense floating areas giving rise to sack of marble appearance in right iliac fossa. [Figure-1A]

Risk of malignancy index-3 (USG score 1 x Menopause 3 x CA125 level 12) came to be 36. Considering her findings, case was posted for elective laparotomy on April 12, 2021. Intraoperative finding also revealed a right sided ovarian cyst of 15cm x 12 cm with smooth surface, cystic in consistency. When cut and opened, multiple soft marble like appearance of sebaceous materials were observed floating in with thin pultaceous material of around 500ml. After evacuating the sebaceous materials, small tufts of hair were visible in posterior wall of the cyst. Other ovary and fallopian tube were normal, uterus was atrophied. Total abdominal hysterectomy with bilateral salphingo-oophorectomy was performed. [Figure-1B&C]

There were no intra-operative or post-operative complications. The patient was discharged on 3<sup>rd</sup> post-operative day. Histopathological report revealed section ovarian cyst showing thin keratinizing stratified squamous epitheli-

um, sebaceous glands, sebum, normal looking mature glial tissue, muscle, fat and fibrocollagenous tissue suggestive of mature cystic teratoma. [Figure -1D]

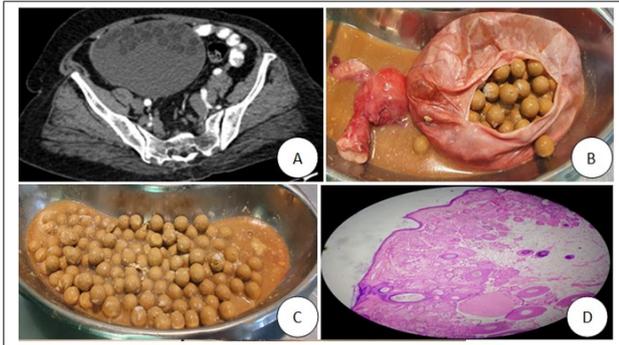


Figure-1: CT image (A), Gross specimen of uterus with ovarian cyst cut open showing multiple marble like appearance of sebaceous material (B & C), H&E stained histology showing keratinized epithelial layer, fat globules and hair follicles (D)

## COMMENTS

Ovarian teratoma is classified as immature and mature teratoma. Immature cystic teratomas are malignant teratomas whereas mature cystic teratomas are benign and slow growing tumors containing mature forms of the three germ cell layers.<sup>6</sup> They make up approximately 20-30 % of ovarian neoplasm. Usually, these tumors are asymptomatic and are incidentally detected either during abdominal-pelvic examination or during imaging or other pelvic surgeries.<sup>3</sup> When these teratoma are large, they may cause discomfort in the abdomen. At times, these can cause pelvic pain, dysmenorrhea and dyspareunia.<sup>7</sup> Abdominal distention, heaviness in the abdomen, increased frequency of micturition and even difficulty emptying of the bladder are other symptoms.<sup>8</sup> Our patient presented with swelling and dull aching pain over lower abdomen only.

As imaging study is the mainstay to investigate ovarian neoplasia, Ultrasonography is usually done as first line of investigation. In most of the cases, they are easily diagnosed because of their characteristic intra tumoral fat component.<sup>9</sup> The most common ultrasonographic features ascribed to these tumors include the presence of shadowing echodensity, regional diffuse bright echoes, hyper echogenic lines and dots, and a fat fluid level.<sup>10</sup>

Computed tomography also shows an excellent sensitivity in detecting mature cystic teratomas as fat is easily seen and measurable as it has lower attenuation than water.<sup>11</sup> Sometimes a raised solid protuberance also known as Rokitansky nodule projecting from cyst wall is also visible.<sup>11</sup> In one of CT performed at Zhejiang Provincial Integrated Chinese and Western Medicine Hospital China of a

38 years old women with MCT, showed huge cystic mass in pelvis with complete capsule and multiple round like shadows within the cyst wall, giving rise to classical “sack of marbles” appearance.<sup>12</sup> In our case, CT revealed a large hypodense lesion measuring 10 cm x 13 cm x 13 cm with internal multiple rounded hypodense floating areas giving rise to sack of marble appearance in right iliac fossa. Based on cases reported till date and also from our findings, we have observed that sack of marbles appearances in MCT is very rare. The first case was reported in 1991 by Muramatsu et al, showing intracystic fat balls within MCT with CT scan imaging.<sup>13</sup> Similarly Kawamoto et al and Jantarsaengaram et al found similar finding in USG in the year 2001 and 2003.<sup>14,15</sup>

The true mechanism of the formation of these sebaceous globules is still not clear. It has been hypothesized that these globules are formed by aggregation of sebaceous material around a nidus due to prolong movement. Hence, with this knowledge the appearance of marble balls in an adnexal tumor can be taken as pathognomic for mature cystic teratoma as its appearance has not been reported in other adnexal tumors.<sup>16</sup>

## CONCLUSIONS

The sack of marble appearance of sebaceous material is rare and could be because of persistent slow mobility of sebaceous material inside the Dermoid.

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