



## CASE SERIES ON LARGE BENIGN OVARIAN TUMORS IN POST-MENOPAUSAL WOMEN

**Manjushri Waikar**

Professor, Department of Obstetrics and Gynaecology, Government Medical College, Nagpur, Maharashtra, India, 440003

**Anamika Singh**

Professor, Department of Obstetrics and Gynaecology, Government Medical College, Nagpur, Maharashtra, India, 440003

### ABSTRACT

**INTRODUCTION:** Space occupying large abdomino-pelvic ovarian tumours are uncommon. Such huge ovarian tumours in postmenopausal women demand to be evaluated thoroughly, as they raise the suspicion of malignancy. The prevalence of ovarian neoplasm in postmenopausal women is 14-18% with a risk of 10-40% in the case of large complex ovarian cysts.

**OBJECTIVE:** To study the clinical features, imaging and management of 8 post-menopausal women with large abdomino-pelvic ovarian tumours.

**MATERIALS AND METHODS:** A retrospective study conducted in a tertiary care institutional hospital in Central Maharashtra, between December 2018- July 2019. 8 post-menopausal women with large ovarian tumours were included in the series.

**RESULTS:** All of them presented with either or all of the symptoms like, abdominal distension, abdominal pain and breathing difficulties. Imaging showed large ovarian masses with features suggestive of malignant etiology. They underwent exploratory laparotomy. Histopathology reports of 7 out of 8 showed benign ovarian tumours, the most common being Serous Cystadenoma.

**CONCLUSION:** Due to lack of awareness, ignorance and logistic reasons patients present at a much later stage. The huge ovarian tumours in postmenopausal women raise suspicion of malignancy which causes social stigma and emotional distress to the women. Hence, they warrant detailed evaluation and surgical removal. This case series shows that not all extremely large tumours need to be malignant.

**CONFLICTS OF INTEREST:** The authors declare that they have no conflicts of interest.

### KEYWORDS

Large benign ovarian tumours, abdominopelvic mass, Post-menopausal women, Abdominal lump

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### \*Corresponding Author

Anamika Singh

Assistant Professor, Department of Obstetrics and Gynaecology, Government Medical College, Nagpur, Maharashtra, India, 440003  
dr.anamika27.AS@gmail.com

### INTRODUCTION:

Ovarian cancer continues to be the most deadly gynecological malignancy. In the current era of medical practice, giant ovarian tumors have become rare due to early discovery on routine check-ups. Depending on the age of the patient, size and histopathology of the cyst, management is decided.<sup>1</sup> Detection of ovarian tumor causes panic amongst patients because of the fear of malignancy leading to psycho-somatic stress disorders. In addition to this, large size of these tumors causes mechanical pressure symptoms on the gastrointestinal, respiratory and urinary tract. Hence, a comprehensive approach to the management of such tumors is essential to nullify the secondary symptoms along with treatment of the primary ovarian tumour.<sup>2</sup>

Ovarian cancers are the second most common gynaecological neoplasm and the seventh most common cause of cancer deaths worldwide. Menopause increases the likelihood of developing ovarian tumours. The chances of ovarian cysts in post-menopausal women being malignant is around 14% - 18%.<sup>3</sup> In case of ovarian cysts of size less than 5 cm, risk of malignancy is only 0-1%. However, in the case of large complex cysts, the risk is 10%-40%.<sup>3</sup> Most of these cysts are benign in nature with the chance of malignancy being only 7%-13% in premenopausal and 8%-45% in postmenopausal women.<sup>4,5</sup> The most common benign ovarian tumour in post-menopausal woman is serous cystadenoma.<sup>6,7</sup>

### OBJECTIVE:

To study the clinical features, imaging and management of 8 post-menopausal women with large abdomino-pelvic ovarian tumours.

### MATERIALS AND METHODS:

A retrospective study conducted in a tertiary care institutional hospital in Central Maharashtra, between December 2018- July 2019. It included 8 postmenopausal women with large abdomino-pelvic mass who presented with various symptoms. CA-125 tumour marker was done and Risk Malignancy Index (RMI) was calculated for all. In view of the large size, all of them had CT imaging of abdomen and pelvis done. They subsequently underwent exploratory laparotomy. Majority had histopathology reports showing benign ovarian tumours.

### RESULTS:

The findings of this case series are illustrated in Table 1. The mean age of presentation of symptoms was 54.8 years. All patients had unilateral involvement of ovaries. The most common presenting complaints included abdominal distension, retention of urine, abdominal pain and breathing difficulties. On per abdomen examination, mass per abdomen corresponded to uterus size ranging between 28-36 weeks. On bimanual examination, uterine size was not made out and fornical fullness due to the mass was noted. CA- 125 levels were within the normal range for 7 out of the 8 patients. Only 1 of them had elevated levels ( $>35U/ml$ ). CT imaging for 5 out of 8 cases showed features suggestive of malignancy, like multi-loculated cyst, ascites and solid components, though majority of them (7 cases) were proved benign in the end. All the tumours were large in size ranging from 15 to 35 cm in greatest dimension as shown in Fig 1-4. The various histopathology reports included simple serous cyst, benign serous cystadenoma and benign mucinous cystadenoma, mucinous cystadenocarcinoma, with most common being benign serous cystadenoma.

**TABLE 1:**

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
Age( in years)	55	58	50	49	56	49	70	52
Pre/Post menopausal status	Post menopausal							

Ovaries involved	Left	Right	Left	Right	Left	Left	Right	Bilateral
CA-125 (U/ml)	7.58	32.18	6.8	36.2	12.8	28.8	17.7	13.7
USG/CT findings	Solid- cystic lesion, Multiloculated Ascitis+	Septa+, Cystic lesion	Multiloculated, Solid-cystic lesion, Thin septa	Thin septa	Multiloculated Solid-cystic	Multiloculated, Septate, Solid-cystic lesion	Multiloculated, Solid-cystic lesion	Bilateral simple ovarian cyst
RMI score	68.22	96.54	61.2	108.6	115.2	259.2	159.3	41.1
Size of the tumor(cm)	15.6*13*9	14.8*10*8	20*13*25	29*25*34	16.2*14.6*7.2	25*17*17	14.4*22.8*24	18.4*10.4*8.4 8.4*7.4*7.4
Histo-pathology Report	Benign Serous cystadenoma	Benign Serous cystadenoma	Mucinous cystadenocarcinoma	Simple cyst	Benign serous cystadenoma	Benign mucinous cystadenoma	Benign Serous cystadenoma	Benign Serous cystadenoma



Fig.1



Fig.2



Fig.3



Fig.4

## FIGURES OF INTRA-OPERATIVE FINDINGS:

### DISCUSSION:

The ovary is a pearl-colored, oblong ductless reproductive gland in which the female reproductive cells are produced. With a normal size of 4 x 3 x 2cm, it has nearly 1-2 million eggs at birth, which reduces to around 3 lakhs at puberty. This organ is also responsible for the secondary sexual characteristics of women by producing hormones, mainly oestrogen and progesterone. In a women's lifetime, ovarian tumors can present at any age. The size of an ovarian cyst can range from a small lemon to a mass larger than a full term pregnancy. The definition of large or giant ovarian cysts was described as cysts measuring more than 10 cm in diameter in the radiological scan and/or those cysts reaching above the umbilicus.<sup>5</sup> Menopause, which refers to the cessation of menstrual cycles, occurs after about 45 years of age in most women. This makes them more prone to ovarian tumour due to the hormonal changes.

The incidence of ovarian tumours in postmenopausal women is commonly noted in the age group 60-80 years.<sup>9</sup> The mean age of diagnosis in our study is 54.6 years, which is similar to a study by Jacobs et al.,<sup>10</sup> where mean age was 56 years. The 5-year survival rate for ovarian malignancy is 30-40% as they are mostly inoperable at the time of diagnosis.<sup>11</sup>

On the basis of cell of origin, ovarian neoplasms are divided into epithelial, stromal and germ cell neoplasms. Ovarian tumours may be benign, malignant or borderline malignant. The common benign ovarian tumours are functional cysts (i.e. follicular cysts, corpus luteum cysts, theca lutein cysts) and benign neoplasms (i.e. epithelial cell tumours, germ cell tumours, stromal tumours). The commonly seen benign ovarian tumours in post-menopausal women are serous cystadenoma, mucinous cystadenoma, sero-mucinous cystadenoma. In this case series, serous cystadenoma is found to be the most common, which complies well with the studies by Mondal et al<sup>6</sup> and Rajavigneshwari N et al.<sup>11</sup> However, as per a study by Soumini G et al.,<sup>12</sup> mucinous cystadenoma was the commonest benign ovarian tumour. 30% of all ovarian tumours are serous cystadenomas. They are multi-loculated, lined by columnar or cuboidal epithelium, filled with thin clear yellowish fluid, with or without papillary projections. They

may be symptomatic or asymptomatic. As the size of the tumour increases, pressure symptoms like pain in abdomen, abdominal distension, voiding difficulties and breathing difficulties develop. All patients in our study had pain in abdomen and abdominal distension as their primary complaints and this was in sync with a study by Yogambal et al.<sup>13</sup> So did Velanki Venkata Sujatha<sup>14</sup> mentioned in her case report of a 66 year old South Indian post-menopausal woman with a giant ovarian serous cystadenoma weighing 23 kg, with abdominal distension and pain as her primary complaints.

Many case reports have been mentioned in literature with presenting symptoms being anorexia and abdominal distension (Table 2).

These tumours were evaluated by testing for CA 125 levels and also a transvaginal ultrasound or CT imaging in case of large abdominopelvic ovarian tumours.

Transvaginal ultrasound is known to be the single most effective way of evaluating postmenopausal ovarian masses.<sup>15</sup> Ultrasound imaging shows the laterality and locularity of the cyst, blood flow, presence of any papillary projections, solid areas and ascites, suggesting the possibility of either a benign or malignant ovarian tumour. In a study by DePriest et al.,<sup>16</sup> 3220 asymptomatic post-menopausal women underwent screening by transvaginal ultrasonography between 1987-1992, which showed a decrease in the staging of ovarian cancer at detection and also the mortality arising from ovarian cancer, hence proving its efficacy as a screening tool for ovarian cancer.

Study by Vasilev et al.<sup>17</sup> suggested that elevated serum CA 125 level by itself does not distinguish benign from malignant pelvic masses. CA-125 levels were checked for all the patients in our study and 1 of them had values higher than 35U/ml, suggestive of malignancy. Despite these contradicting value, result proved to be benign in the end.

Risk Malignancy Index (RMI) Score is a tool that collaborates both USG findings and CA-125 values, thus improvising the probability rate. It is calculated as a product of CA-125 value, Menopausal status (M) (pre-menopausal = 1 and post-menopausal = 3) and the Ultrasound score (U) (0- if no features, 1- if any one of the ultrasound features is present, 3- if 2 or more ultrasound features are present). Ultrasound features being multilocular cyst, solid areas, bilateral lesions, ascites and intra-abdominal metastasis. RMI has a sensitivity of 85% and specificity of 97% with a cut-off level of 200.<sup>18-20</sup> In our study, the RMI score was in the benign range for 6 out of 7 cases which correlated with the histopathology report in the end.

From management point of view, such huge ovarian masses with size more than 20cm definitely warrants laparotomy with frozen section. Based on frozen section report, further steps like omental biopsies and lymph node dissection are decided. In our study, we have analysed that despite most of the patients having CA-125 levels suggesting a benign nature of the tumours, imaging studies portray the possibility of malignancy. Hence, considering the large size of the tumours, patients were counselled about the need for laparotomy and sample was sent for histopathology as it is the ultimate confirmatory means of arriving at a diagnosis and further management.

While a study by Modesitt et al.<sup>21</sup> showed that the risk of malignancy of ovarian tumours of size less than 10cm among women aged more than 50 years is less than 0.1%, there aren't enough studies to prove the risk of malignancy in large ovarian tumours >20cm in size.

Bailey et al<sup>22</sup> also studied that unilocular ovarian cysts <10 cm in diameter in asymptomatic postmenopausal women or women  $\geq 50$  years of age are associated with minimal risk for ovarian cancer. In contrast, complex ovarian cysts with wall abnormalities or solid areas are associated with a significant risk for malignancy. Another study by Rulin et al<sup>23</sup> had 40 out of 63 tumours larger than 10cm, being

**TABLE 2:**

Giant ovarian cysts in postmenopausal women - Literature Review							
Study (year)	Age	Symptom	Site	Size of the cyst	CA-125 (U/ml)	Histological type	Surgery
Sujatha and Babu (2009) <sup>14</sup>	66	Diffuse abdominal pain, anorexia	Unilateral	60*47*30cm	46.61	Serous cyst adenoma	TAH+BSO
Alobaid et al. (2013) <sup>5</sup>	69	Discomfort due to abdominal distension	Unilateral	20cm max. diameter	Normal	Serous cyst adenoma	LAVH+BSO
Madhu et al. (2013) <sup>23</sup>	55	Discomfort due to abdominal distension	Unilateral	50*39*47cm	-	Mucinous cyst adenoma	TAH+BSO
Bhasin et al. (2017) <sup>24</sup>	85	Pain in abdomen	Unilateral	58*46cm	-	Mucinous cyst adenoma	Cyst excision
Agrawal et al. (2015) <sup>8</sup>	65	Pain in lower back, difficulty in breathing	Unilateral	25*28*15cm	31.31	Serous cyst adenoma	TAH+BSO
Kim et al. (2016) <sup>25</sup>	52	Abdominal distension	Unilateral	36*21*30cm	109.51	Benign cystic lesion with hemorrhage	Cyst excision

**CONCLUSION:**

In developing countries, patients having ovarian tumors seek medical help usually during advanced stages of the disease. Such large benign ovarian tumours extending up to the xiphio-sternum commonly present with abdominal distension. Imaging studies showing features suggestive of malignancy like solid components, ascites and multiloculated cyst may not necessarily precede a histopathology report. Hence, large size of the tumours need not always pose a malignant potential. They have to be evaluated thoroughly, with the main modality of management being laparotomy with frozen section, to rule out malignancy and then follow up with the histopathology report. Creating awareness among post-menopausal women about annual regular health check-up can definitely lead on to early diagnosis and accurate management at an early stage, thus improving the overall health of our population.

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malignant. However, a study by Sirishpalakodety et al 3 showed that large ovarian tumours of size more than 10cm need not always be malignant. Our study also shows that large ovarian tumours more than 20cm in size should be thoroughly evaluated, keeping the possibility of benign nature of the tumour in mind and managed accordingly.

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