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Letter to Editor

Advanced adult granulosa cell tumor with prominent fibromatous stroma: A case report

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To the Editor,

Adult granulosa cell tumor (AGCT) is the most common sex cord–stromal tumor and accounts for about 1% of all ovarian neoplasms.[1] It is derived from granulosa cells of the ovarian follicle that are responsible for estradiol production and are admixed with a variable population of fibroblasts or theca cells. AGCT usually affects perimenopausal women (mean age ~50–55 years).[2] The patients present with abdominal pain or estrogenic manifestations (e.g., uterine bleeding).[2] AGCTs tend to be unilateral, with solid and/or cystic growth patterns. Most patients present with stage I disease, associated with a 10-year survival rate of 90–95% and a recurrence rate of 10–15%; the overall recurrence rate for all stages combined is 20–30%. Extraovarian spread includes the peritoneum and omentum and rarely to the liver, lungs or bone.[2,3] Tumors have many histologic patterns, while their stroma varies from scanty to abundant, which can be fibromatous or thecomatous.[1,4]

We describe a 70-year-old woman with AGCT with prominent fibromatous stroma in stage III with omental deposits. The patient presented with a three-month history of abdominal pain, weight loss, loss of appetite and vomiting. Biochemical investigations showed elevated CA-125 levels (258 U/ml). Ultrasound and CT scans showed a large multilocular solid and cystic mass, measuring 16.4 x 15.9 × 33.1 cm, arising from the right adnexa (APxLLxCC) (Fig. 1A). The mass covered the space above the bladder and ventral and superior to the uterus, from the pelvis to the central abdomen and right hemiabdomen. The mass had irregular enhancing septa and proliferation (Fig. 1A). Multiple solid nodules as secondary deposits and slight ascites around the mass were also observed. Grossly, a large ovarian mass was observed, measuring 30 x 25 × 13 cm (Fig. 1B). The surface was bosselated and composed of a grey-white fibrous capsule. A cut section showed predominantly solid, focally hemorrhagic grey-white areas. Multiple cystic spaces filled with mucoid material were also noted. A contralateral ovary and uterus were normal except for several tiny nodules on the surface of the uterus. Omentum (26x9x2 cm) was also infiltrated with multiple whitish nodules measuring from 0.8 cm to 6 cm (Fig. 1C).

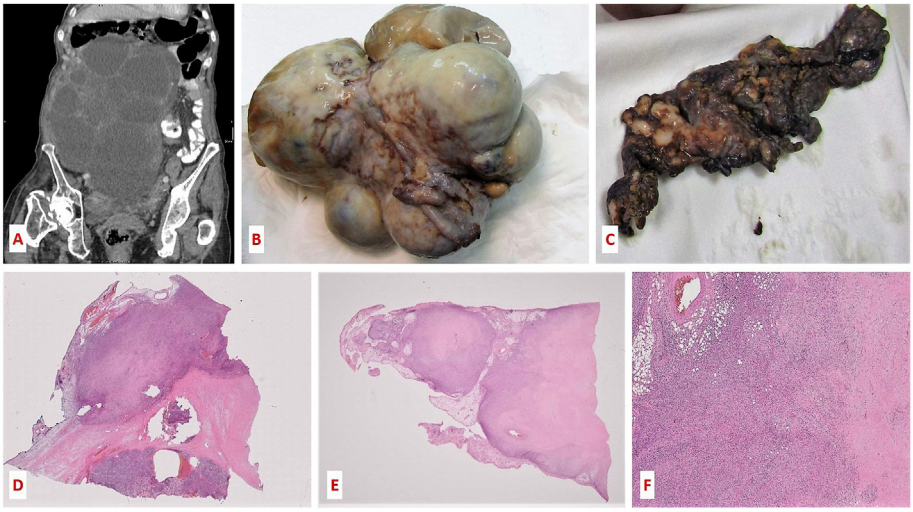

Fig. 1. A–F. (A): CT scan revealing bulky mass originating from the right adnexa and extending to the pelvis and right hemiabdomen; Multiple omental deposits were also detected; (B): Gross appearance of large right ovarian mass; (C): Resected omentum infiltrated with multiple tumor deposits; (D–F): Microscopic appearance of the primary tumor (D–E), and secondary deposits in the omentum (F) (Hematoxylin and Eosin stain, magnification 10x).

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Microscopically, the tumor was composed of polygonal cells with round to oval nuclei with nuclear grooves and scanty cytoplasm arranged in microfollicular and diffuse patterns admixed with abundant fibromatous stroma with a mitotic activity of 6/10 hpf. Cystic changes, hemorrhage and extensive necrosis, were also noted. Uterine surface nodules and omental tumor deposits contained abundant fibromatous stroma with foci of hyalinization (Fig. 1D-F) and scattered neoplastic granulosa cells highlighted by reticulin stain. Similar tiny fibromatous foci were also found in the contralateral ovary. Immunohistochemically tumor cells were positive for CD99, calretinin, WT-1 and focally positive for CD56. Morphologic and immunohistochemical findings were consistent with advanced GCT with prominent fibromatous stroma.

Advanced adult GCT with prominent fibromatous stroma are rare neoplasms but should be considered in the differential diagnosis in elderly patients with bulky ovarian mass and omental deposits.

Declaration of competing interest

The authors have no conflict of interest associated with the current manuscript.

Acknowledgment

All performed procedures were done per the ethical standards of the 1964 Helsinki declaration. Institutional review board (IRB) approval was not requested for the case report.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.asjsur.2023.02.125.

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