

EP02.08

Sonographic features of metastatic ovarian tumor according to the origin of primary neoplasm

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Objective

To evaluate the sonographic features of metastatic ovarian tumors according to the origin of the primary neoplasm

Methods

A retrospective cross-sectional study was conducted among all patients with histopathologic diagnosis of metastatic ovarian tumor who underwent surgery and/or ultrasound-guided tru-cut biopsy from January 2015 to December 2022, at the Department of Obstetrics and Gynecology, Philippine General Hospital. The study included all patients with pre-operative transvaginal/transrectal/transabdominal ultrasound done by the Division of Ultrasound.

Sonographic findings including tumor size, type of lesion based on the IOTA terms and definitions, echogenicity, presence of ascites, and vascularization patterns were recorded. Stored video clips and images from the preoperative ultrasound examinations were reviewed by an experienced gynecologic sonologist who was blinded of the cases.

Results

There were a total of 57 patients diagnosed with metastatic ovarian tumor. Bilaterality was seen in 35% of cases, with a total of 77 ovarian lesions included in the analysis.

The majority of the cases presented as unilateral solid tumors with heterogeneous echopattern, without acoustic shadowing.

Ovarian metastases from breast cancer tend to be more often solid and less than 10 cm.

Tumors from primary lung carcinoma present as hyperechogenic solid tumors with small cystic spaces and “sponge”-like appearance.

The “lead vessel” was appreciated across all organs except for the colon-appendix-bile duct group. Associated ascites was not a common finding in cases of metastatic ovarian tumors.

Conclusion

The results of this study demonstrated sonographic findings of metastatic ovarian tumors that may contribute to pre-operative differentiation and identification of the primary tumor.

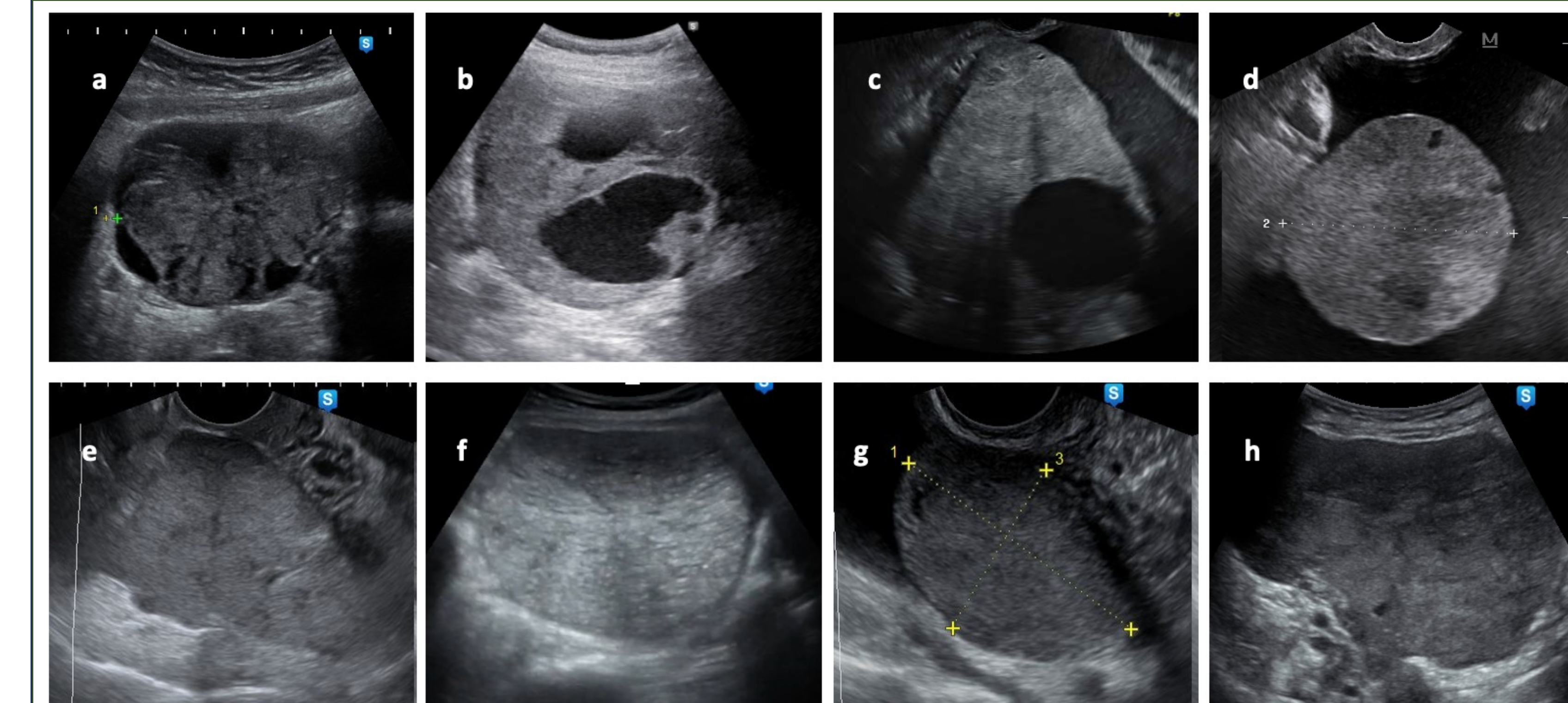


Figure 1. Ultrasound images of ovarian metastases derived from the different primary origins. Most are heterogeneous solid masses, metastatic from the (a) endometrium, (b) cervix, (c) stomach, (d) colon, (e) renal, (f) lung, (g) breast, and (h) lymphoma.

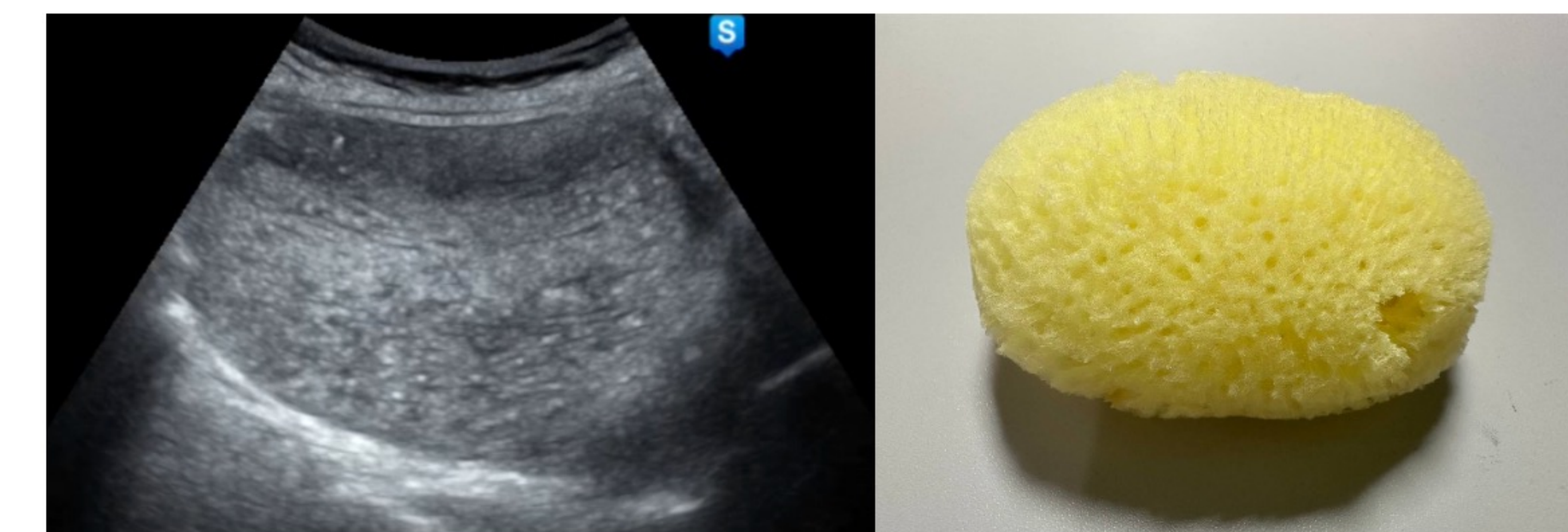


Figure 2. Ultrasound image of metastatic ovarian tumor from a lung origin resembling a “sponge”-like appearance.