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Spontaneous Ovarian Hyperstimulation Syndrome in a Naturally Conceived Pregnancy: A Case Report

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ABSTRACT

Ovarian hyperstimulation syndrome (OHSS) is an iatrogenic complication of assisted reproduction technology. Far less commonly, OHSS arises spontaneously in a naturally conceived pregnancy. When this happens, it is generally driven by unusually high circulating β -hCG or by ovaries that are abnormally sensitive to glycoprotein hormone stimulation, a susceptibility sometimes linked to underlying hypothyroidism. We present a case of spontaneous OHSS. A 21-year-old primigravida presented with complaints of progressive abdominal pain, nausea, vomiting, and difficulty in breathing at 9 weeks gestation. On imaging, a singleton intrauterine gestation, enlarged ovaries containing multiple cysts, and moderate ascites were seen.

KEY WORDS: OHSS, β -hCG, Primigravida, TSH, Ascites.

INTRODUCTION

Ovarian hyperstimulation syndrome (OHSS) most often develops as a complication of fertility treatment, affecting roughly 1–14% of patients undergoing in vitro fertilization or intracytoplasmic sperm injection [1]. OHSS involves ovarian enlargement, formation of numerous follicular cysts, and leakage of fluid out of the vasculature due to heightened capillary permeability, with presentations ranging from mild to severe [2]. Under the influence of hCG, the overstimulated ovaries secrete vascular endothelial growth factor along with various inflammatory cytokines. Together these mediators drive the hallmark physiology of OHSS: leaky capillaries, fluid shifting into the “third space,” and resulting intravascular volume depletion [3].

CASE PRESENTATION

A 21-year-old woman in primigravida presented at 9 weeks and 1 day of gestation with history of abdominal pains, nausea, vomiting, and difficulty in breathing. There is no history of previous gynecological abnormality. She had no history of ovulation-inducing drugs or other fertility treatment. Her blood pressure, other vital signs and laboratory tests (CBC, LFT, RFT) were within normal limits. Her β -hCG was markedly elevated (above 10,000 mIU/mL), a level compatible with early pregnancy, and her TSH was low — raising the question of hCG cross-stimulating the thyroid.

Obstetric imaging was requested to assess the fetus, to rule out gestational trophoblastic disease and possible ovarian torsion.

Transabdominal ultrasound served as the primary imaging study. Both ovaries were strikingly enlarged in a pattern typical of OHSS — the right measuring 230 cc and the left 276 cc (Figure-1), far exceeding the normal volume of under 10 cc. Numerous follicles of varying sizes were seen, some simple and some hemorrhagic (Figure-2), with no sonographic signs of torsion. A moderate amount of mostly anechoic free fluid was noted in the peritoneal cavity, consistent with the third-space fluid shift typical of OHSS. An intrauterine gestational sac matched the stated 9-week-1-day gestational age, with nothing to suggest molar pregnancy or another gestational abnormality. No pleural or pericardial effusion was seen on the available imaging, and neither ovary showed a mass concerning for neoplasm. A diagnosis of moderate spontaneous ovarian hyperstimulation was made.

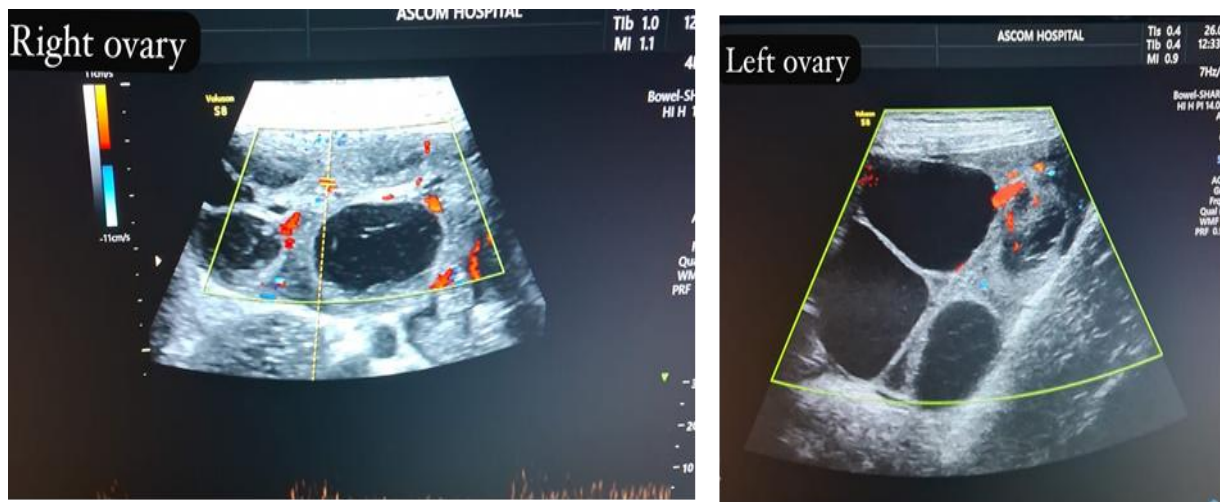


FIGURE-1: Moderate OHSS in 21-year-old primigravida who presented with nausea, and abdominal pain. The patient's vital signs and complete blood count were normal. Transabdominal gray-scale USG of the bilateral ovaries show ovarian enlargement, with the right ovary measuring 230 cc and left ovary measuring 276 cc in volume.

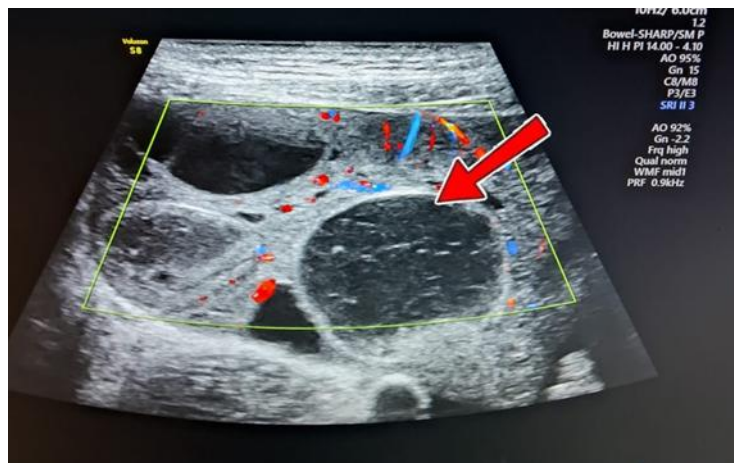


FIGURE-2: The enlarged ovaries contain multiple cystic and hemorrhagic follicles (arrow), consistent with ovarian hyperstimulation.

DISCUSSION

Spontaneous OHSS is an uncommon complication of pregnancy that results from excess hCG, which — because of its structural similarity to TSH — can directly stimulate ovarian FSH receptors. The result is ovarian enlargement, multiple cyst formation, and increased capillary leakiness that produces ascites and other fluid shifts [4].

OHSS can range from mild to severe, as classified with the modified Golan system [5].

This system incorporates both clinical and imaging data. As per the modified Golan classification system for OHSS, OHSS is categorized as mild (grades I and II), moderate (grade III), or severe (grades IV and V). The radiologist can provide supporting information for the classification of OHSS, including ovarian size and the presence of ascites or pleural effusion.

CONCLUSION

Ovarian hyperstimulation syndrome is an entity comprising typical imaging features that warrant a spot diagnosis. This case underscores that OHSS can occur outside the setting of assisted reproduction. Since spontaneous OHSS can mimic other causes of bilateral ovarian enlargement in early pregnancy, it deserves a place in the differential whenever a pregnant patient — even without any history of fertility treatment — presents with abdominal pain, ascites, or a strikingly high β -hCG. Ultrasound remains the imaging modality of choice for both diagnosis and monitoring, and pairing an unexpected TSH result with a free T4 level helps distinguish hCG-mediated thyroid stimulation from genuine thyroid disease. Since most cases resolve with supportive, conservative management, recognizing this rare condition can spare patients unnecessary surgical intervention.

REFERENCES

1. Garcia-Velasco JA, Pellicer A. New concepts in the understanding of the ovarian hyperstimulation syndrome. *Curr Opin Obstet Gynecol* 2003; 15: 251–256.
2. L.C. Grossman et al. The pathophysiology of ovarian hyperstimulation syndrome: an unrecognized compartment syndrome *Fertil Steril* (2010).
3. Alper MM, Smith LP, Sills ES. Ovarian hyperstimulation syndrome: Current views on pathophysiology, risk factors, prevention, and management. *J Exp Clin Assist Reprod.* 2009;6:3.
4. Nwafor NN, Nyoyoko NP. Spontaneous Ovarian Hyperstimulation Syndrome: A Report of Two Cases from Different Pathogenesis. *Niger Med J.* 2020 Sep-Oct;61(5):269-272. doi: 10.4103/nmj.NMJ_183_20. Epub 2020 Oct 13. PMID: 33487851; PMCID: PMC7808280.
5. Golan A, Weissman A. Symposium: Update on prediction and management of OHSS. A modern classification of OHSS. *Reprod Biomed Online* 2009;19(1):28–32.