

## Ascites due to ovarian hyperstimulation syndrome in a oocyte donor: A case report

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### Abstract

We are reporting a case of ovarian hyperstimulation syndrome in a oocyte donor. Imaging findings are discussed here. As number of in vitro fertilization procedure are on the rise, knowledge of this condition can avoid delay in diagnosis to prevent, progression to life threatening complications, and unnecessary surgery.

**Keywords:** Ovarian hyperstimulation syndrome, Vascular permeability, Gonadotropin, Ascites.

### Introduction

In vitro fertilization (IVF) using donated oocytes has proven to be an highly effective treatment option for many prospective parents struggling with infertility, and the usage of donated oocytes in assisted reproduction has increased many folds since the technique was first successfully used in 1984.<sup>(1)</sup> Ovarian hyper stimulation syndrome (OHSS) is a rare, potentially life-threatening systemic complication caused by various iatrogenic and spontaneous (non-iatrogenic) ovarian stimulation occurring due to little-known patho-physiological mechanisms. The vast majority of OHSS cases are usually iatrogenic and are seen to complicate about 1% of all assisted reproductive technologies, and are related to use of exogenous hormonal therapy.<sup>(2)</sup> Long-term complications of assisted reproductive technologies are thromboembolic disease particularly in upper half of body, higher risk of pregnancy complications like abnormal placentation, miscarriage, gestational diabetes and hypertensive disorders. A link between assisted conception and number of genital cancers particularly breast, ovary and endometrium has also been identified. Fetal disorders include low birth weight, congenital malformations and growth disorders.<sup>(3)</sup>

### Case History

A 25-year-old lady presented with abdominal bloating and pain in Gynecology department. She was an oocyte donor for in vitro fertilization procedure. Sonographic examination revealed bilateral ovaries enlarged (more than 10 cm) and large follicles measuring more than 40 mm in size, giving spoke wheel appearance. Moderate ascites was also present (Fig. 1-6). Diagnosis of ovarian hyper stimulation syndrome was given. She responded well to the treatment in ten days time.



Fig. 1

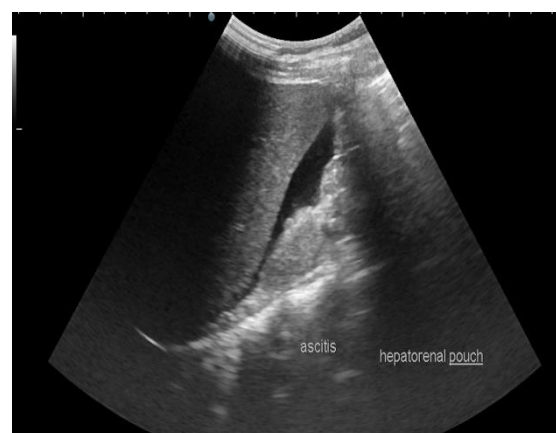


Fig. 2



Fig. 3



Fig. 6



Fig. 4



Fig. 5

**Fig. 1-6: Transabdominal and transvaginal sonography images showing non-gravid uterus, markedly enlarged ovaries (More than 10cms.), Spoke wheel appearance of ovaries, Large follicle size (More than 4 cm.) and Ascites**

### Discussion

OHSS manifests with a combination of ovarian enlargement by multiple follicular cysts and acute fluid shift out of the intravascular space, causing ascites and haemoconcentration.<sup>(4)</sup> Its pathogenesis is explained by secretion of ovarian vasoactive angiogenic agents, which cause increased capillary permeability and accumulation of fluid in the extravascular space.<sup>(5)</sup>

Symptoms start with a sensation of bloating, abdominal discomfort, nausea, vomiting and diarrhea. As the disease progresses accumulation of fluid in third space leads to ascites, pleural and pericardial diffusion, hemoconcentration, oliguria, hypovolemia and electrolyte imbalance.<sup>(2)</sup> Numerous classification schemes have been developed to characterize OHSS. The modified Golan classification scheme classify OHSS as mild, moderate, or severe on the basis of symptom severity, signs, and US findings, including ovarian size and evidence of ascites.<sup>(6)</sup>

The classical imaging findings of OHSS are similar at US, CT,<sup>(7)</sup> and MR imaging:<sup>(8)</sup> bilateral symmetrically enlarged ovaries containing multiple variable-sized cystic lesions representing enlarged follicles or corpus luteum cysts, and presence of ascites. The characteristic peripheral location of the follicles surrounding a central core of ovarian stroma has been compared to a “wheel spoke” appearance.<sup>(9)</sup>

The enlarged cystic ovaries seen in OHSS should never be mistaken for cystic ovarian tumor at CT or MR imaging, there should be no enhancing abnormal soft tissue in or around the cystic ovarian mass, and the normal central ovarian stroma should be recognizable. In addition, follow-up imaging should demonstrate resolution of lesion.<sup>(9)</sup> Imaging appearance of OHSS is similar in cases of infertile women undergoing ovarian stimulation or an oocyte donor.

## **Conclusion**

To conclude, OHSS should be considered in any women presenting with history of serous effusions and ovulation induction. It can be seen in oocyte donor also. The syndrome can range from mild symptoms to life-threatening pericardial effusions and myocardial ischemia. Prompt recognition and initiation of fluid therapy can reduce morbidity and prevent mortality.

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