AN UNCOMMON CAUSE OF SEROSITIS

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Introduction
Medically assisted procreation (MAP), including in vitro fertilization (IVF), has evolved rapidly over the past two decades. Aim to get better results, ovarian stimulation with exogenous hormones has been widely applied to increase the number of oocytes available for fertilization. Ovarian hyperstimulation syndrome (OHSS) is a rare (3–8% of IVF cycles are complicated by moderate or severe OHSS) and potentially fatal complication observed in some patients undergoing hormonal stimulation during MAP and has a varied spectrum of clinical and laboratory manifestations. The pathophysiology of OHSS is characterized by increased capillary permeability, leading to leakage of fluid from the vascular compartment, with third space fluid accumulation and intravascular dehydration. Women at higher risk of developing OHSS include those with polycystic ovaries, women under 30 years of age, use of GnRH agonists, development of multiple follicles during treatment, exposure to LH/HCG, and previous episodes of OHSS.

Case report
A 29-year-old nulligravid woman presented to the Emergency Room with complaints of:
- Dyspnea; Lower abdominal pain; Abdominal distension; Nausea and vomit. These symptoms appeared 14 days following ovulation induction by Gonadotropin.

Her physical examination revealed a distended, tender and tense abdomen with positive shifting dullness on percussion and vesicular murmur diminished at bases on pulmonary auscultation.

Blood investigations showed hypoxemia, leukocytosis, hemoconcentration (hemoglobin of 16.7g/dL, hematocrit of 49%), low serum albumin, hyponatremia and a positive pregnancy test. The diagnosis of severe OHSS was confirmed by ultrasound scan revealing enlarged, multi-cystic ovaries, ascites and bilateral pleural effusion.

Laboratory and Imaging exams

<table>
<thead>
<tr>
<th>HEMATOLOGY</th>
<th>BLOOD CHEMISTRY</th>
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<tbody>
<tr>
<td>Ht: 16.7 g/dL; Hct: 49%</td>
<td>Na: 129mEq/L</td>
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<tr>
<td>WBC: 30.900/µL, N: 90.8%, L: 6.7%</td>
<td>Albumin: 1.3g/dL, Total protein: 3.30g/dL</td>
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<tr>
<td>Arterial blood gas on room air showed hypoxemia (63mmHg)</td>
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<thead>
<tr>
<th>Plate: : 378.000 U/L</th>
<th>Urea: 30mg/dL, Creatinine: 0.9mg/dL</th>
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<tbody>
<tr>
<td>CRP: 1.2mg/dL</td>
<td>Positive Beta-HCG:107µIU/mL (&lt;5.0)</td>
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<td>Normal thyroid hormones</td>
<td>Normal thyroid hormones</td>
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ABDOMINAL ULTRASOUND: Both ovaries were enlarged, polycystic, the right one measured 10.48x3.35x7cm and the left 11.49x2.65x3cm, each containing numerous enlarged follicles, Endometrial thickness and a significant amount of free fluid were observed in the abdomen and pelvis. The Liver and kidneys were normal.

THORACIC X-RAY: Bilateral Pleural effusion

Evolution and Treatment
The treatment approach at the Emergency room consisted in:
- Volume replacement (intravenous crystalloids, fluids and albumin);
- Monitoring vital signs and measuring central venous pressure;
- Repeated ultrasound examination to assess the extent of ovarian enlargement and the degree of abdominal fluid accumulation;
- Maintaining an adequate urine output and a negative hydric balance;
- Prophylaxis for thromboembolic phenomena with LMWH.

After initial stabilization, she was transferred to the Intensive Care Unit. Evolution of this case was favorable, and patient was later found to have a gestational pregnancy.

Conclusion
OHSS can be classified as mild, moderate or severe. Severe cases, as the one we report, can be life-threatening and is characterized by growth of multiple large follicles with massive extravascular protein-rich fluid shift. This syndrome may range from electrolytic disorders, neurohormonal and haemodynamic changes, hypoalbuminemia, hemoconcentration to pulmonary manifestations, liver dysfunction, thromboembolic phenomena and febrile morbidity. Being familiar with this condition will lead to early recognition and will allow for an appropriate diagnostic and therapeutic management in order to prevent serious consequences.

Table 1. Classification of ovarian hyperstimulation syndrome (1)

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<tr>
<th>MILD</th>
<th>MODERATE</th>
<th>SEVERE</th>
<th>CRITICAL</th>
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<td>Abdominal distension and discomfort, Ovarian size usually &lt;8 cm.</td>
<td>Moderate abdominal pain ; Nausea and vomiting; Ultrasound evidence of ascites; Ovarian size usually 8–12 cm</td>
<td>Clinical ascites (occasionally hydrothorax); Dyspnea; Oliguria; Hyponatremia (haematocrit &lt;45%); Hypoproteinaemia; Ovarian size usually &gt;12 cm; CrCl&lt;50 ml/min.</td>
<td>Tense ascites or large hydrothorax; Haematocrit &gt;55%; WBC &gt;25 000/ml Oligo/anuria; Thromboembolic phenomena; Acute respiratory distress syndrome (ARDS); CrCl &lt;50 ml/min.</td>
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References: