

**Introduction :**

Ovarian hyperstimulation syndrome (OHSS) is a severe iatrogenic complication of ovarian stimulation by assisted reproductive procedures. This syndrome is characterized by cystic enlargement of the ovaries and acute third-spacing fluid shift. In its severe form patients may present with pleural effusion.

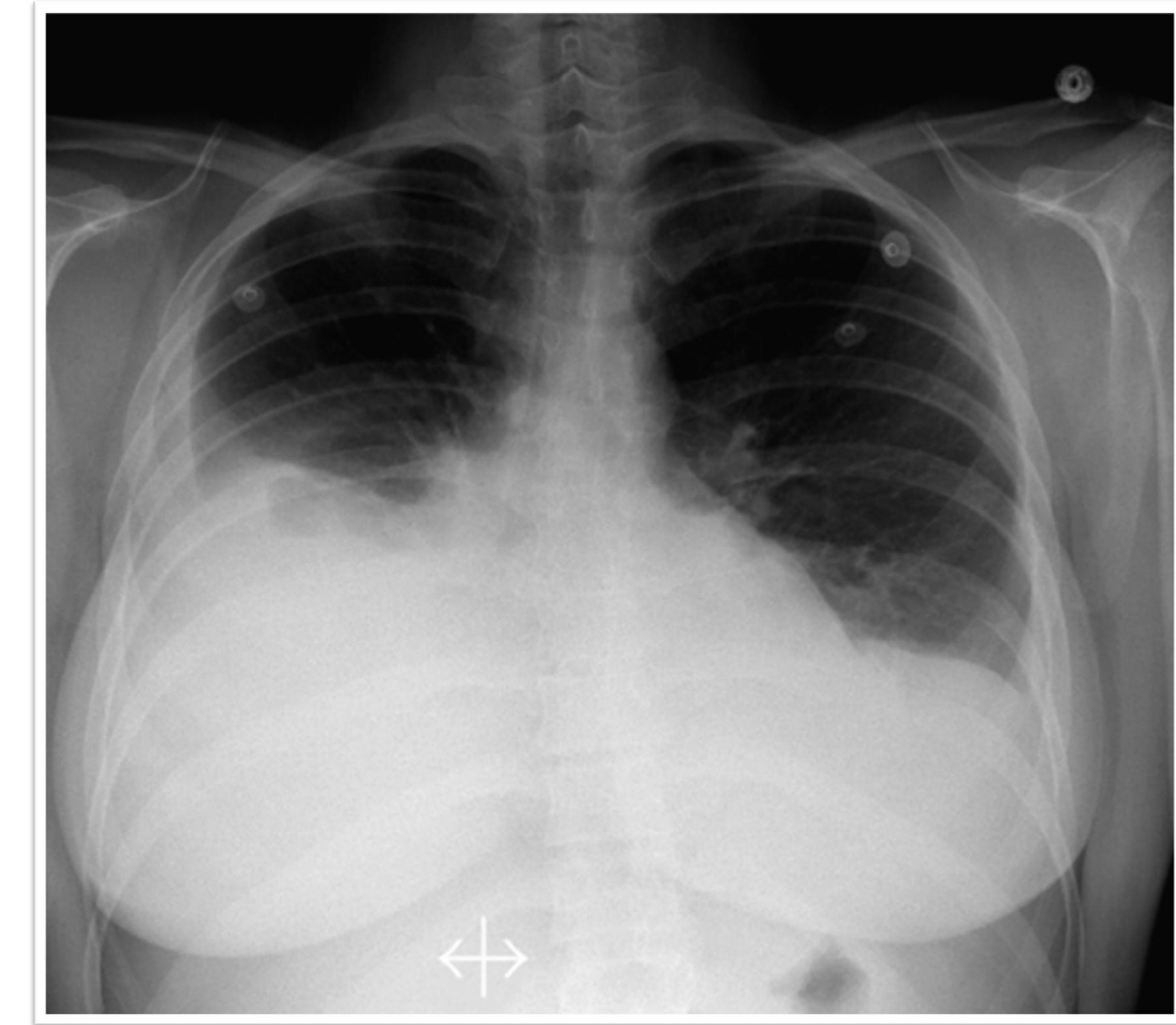
**Case Description:**

A 35-years-old nulliparous female presented to the ER with complaints of shortness of breath and chest pain. The patient was recently treated for infertility and had ovarian stimulation with gonadotropins followed by embryo transfer. She denied nausea, vomiting, or abdominal pain.

On examination, she was afebrile, tachycardic and hypoxic. Initial blood work showed mild leukocytosis of 14.4 (4.8-10.8 k/uL), hemoglobin 15.7 (12-16 g/dL), elevated hematocrit of 48.3 (37-47%) and elevated D-dimer of 4226 (45-500 ng/mL). Imaging studies showed large right and small left pleural effusion (Figure 1). Pulmonary embolism was excluded by CTPA and vascular study was negative for venous thrombosis. An

ultra-sonogram guided thoracentesis was done on the right side of the chest to relieve the worsening dyspnea. The pleural fluid was exudative in nature with fluid protein of 4.5 gm/dl. Pelvic sonogram showed bilateral enlarged ovaries (Figure 2).

She received IV fluids to prevent hemoconcentration and subcutaneous heparin to prevent thrombotic complications. The patient improved clinically with less dyspnea, chest X-ray showed improvement, and the patient was discharged home after 3 days.



**Figure 1.** Chest X-ray showing large right and small left pleural effusion.



**Figure 2.** Pelvic sonogram showing cystic enlargement of the right ovary.

**Discussion:**

OHSS occurs when ovaries are hyperstimulated from fertility treatments or rarely from mutations in the FSH receptor. The pathogenesis of OHSS is not fully understood, but increased capillary permeability and loss of fluid into the third space is a main feature. A predominant role of endothelial growth factor and other vasoactive substances have been suggested in increasing vascular permeability. Women who are at high risk for this syndrome includes younger age, polycystic ovaries, low BMI, rapidly rising serum estradiol level, and an elevated peak estradiol level.

Clinically OHSS is classified into three forms. In mild forms the ovaries are enlarged with symptoms of nausea, vomiting, not feeling well. In moderate forms there is additional accumulation of ascites with mild abdominal distension. In severe form it may present with hemoconcentration, thrombosis, oliguria, pleural effusion, rarely pericardial effusion, and respiratory distress

Rarely may lead to life-threatening complications like thromboembolic events and even death. Thoracentesis is safe and efficient for symptomatic pleural effusion in OHSS and may be repeated. As number of fertility treatment is increasing physicians should be aware of this very real and perhaps underestimated complication.

**Reference:**

Royal College of Obstetricians and Gynaecologists, "The management of ovarian hyperstimulation syndrome," Green Top Guideline 5, Royal College of Obstetricians and Gynaecologists, 2006.