

Learning Objectives

- Ovarian hyperstimulation syndrome (OHSS) is a rare but occasionally serious complication of controlled ovarian stimulation in the setting of assisted reproduction technologies.
- OHSS results in increased vascular permeability leading to third spacing of fluid.
- The clinical presentation of OHSS ranges from mild to severe; the presence of pleural effusions and hypoxemia are classified as severe OHSS.
- This case report discusses the clinical features, treatment, and outcome of a 35-year-old woman who presented with dyspnea secondary to pleural effusion caused by OHSS.

Case description

A 35-year-old woman presented to the emergency room with worsening dyspnea and pleuritic chest pain over the previous two days. She had been undergoing fertility treatments and had egg retrieval the week prior.

Past Medical History:

Physical examination:

Vital signs: SpO₂ 98% room air, BP 142-75 mmHg, HR 96 bpm, and RR 20 bpm.

Abdomen distended but had no tenderness, rebounding or guarding. Otherwise physical exam was unremarkable.

Inpatient work-up:

- **Initial laboratory analysis:** negative pregnancy test, elevated D-dimer of 2,020 ng/mL
- **CT Chest Angiography:** moderate right-sided pleural effusion. See figure 1.

Outpatient work-up:

- **Diagnostic Thoracentesis:** 600cc of serosanguinous fluid removed, exudative features with elevated total protein of 4.8gm/dL and elevated lactate dehydrogenase of 197 units/L.

Figures

Figure 1. CT Pulmonary Embolism demonstrating evidence of right-sided pleural effusion.

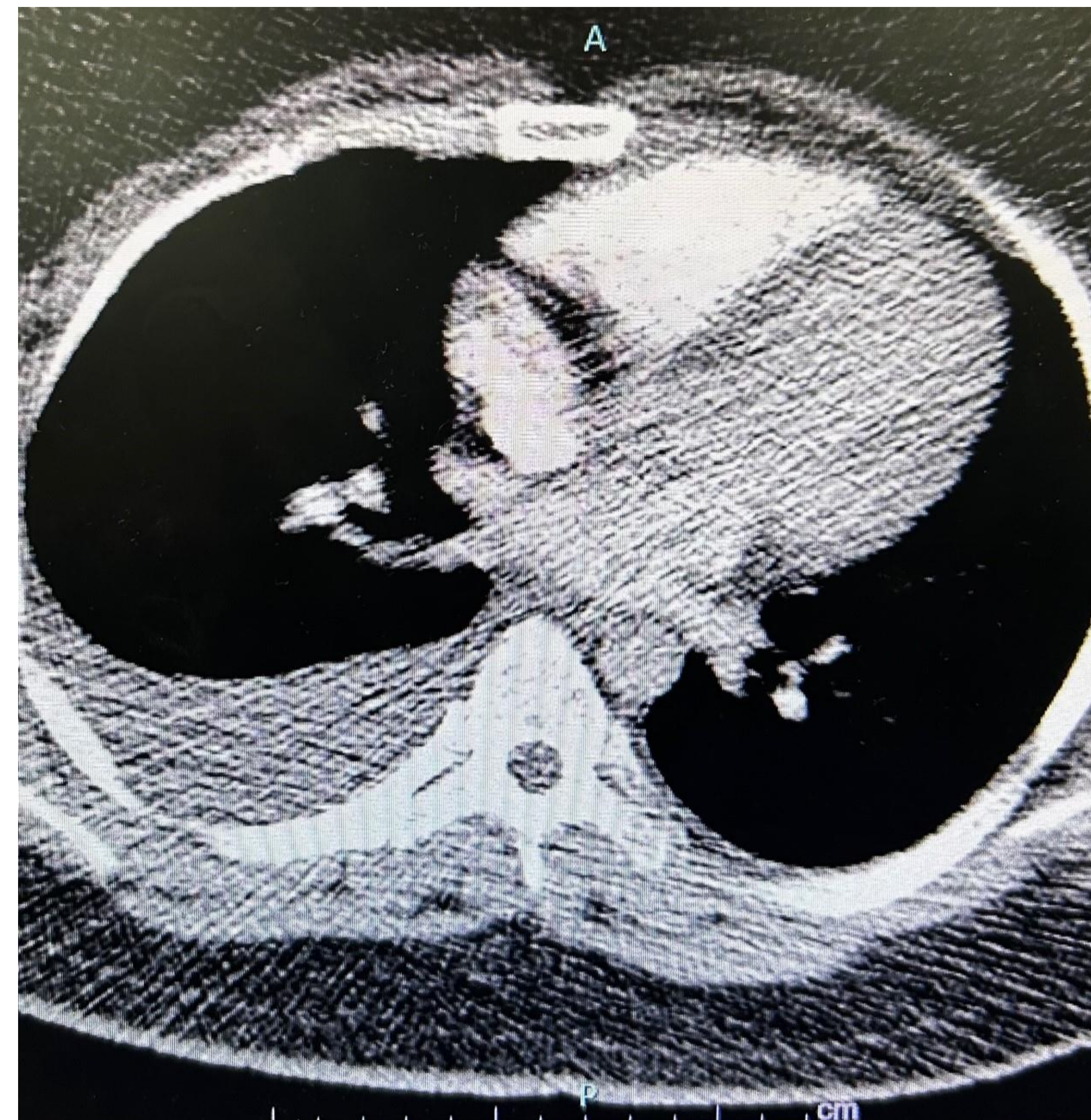
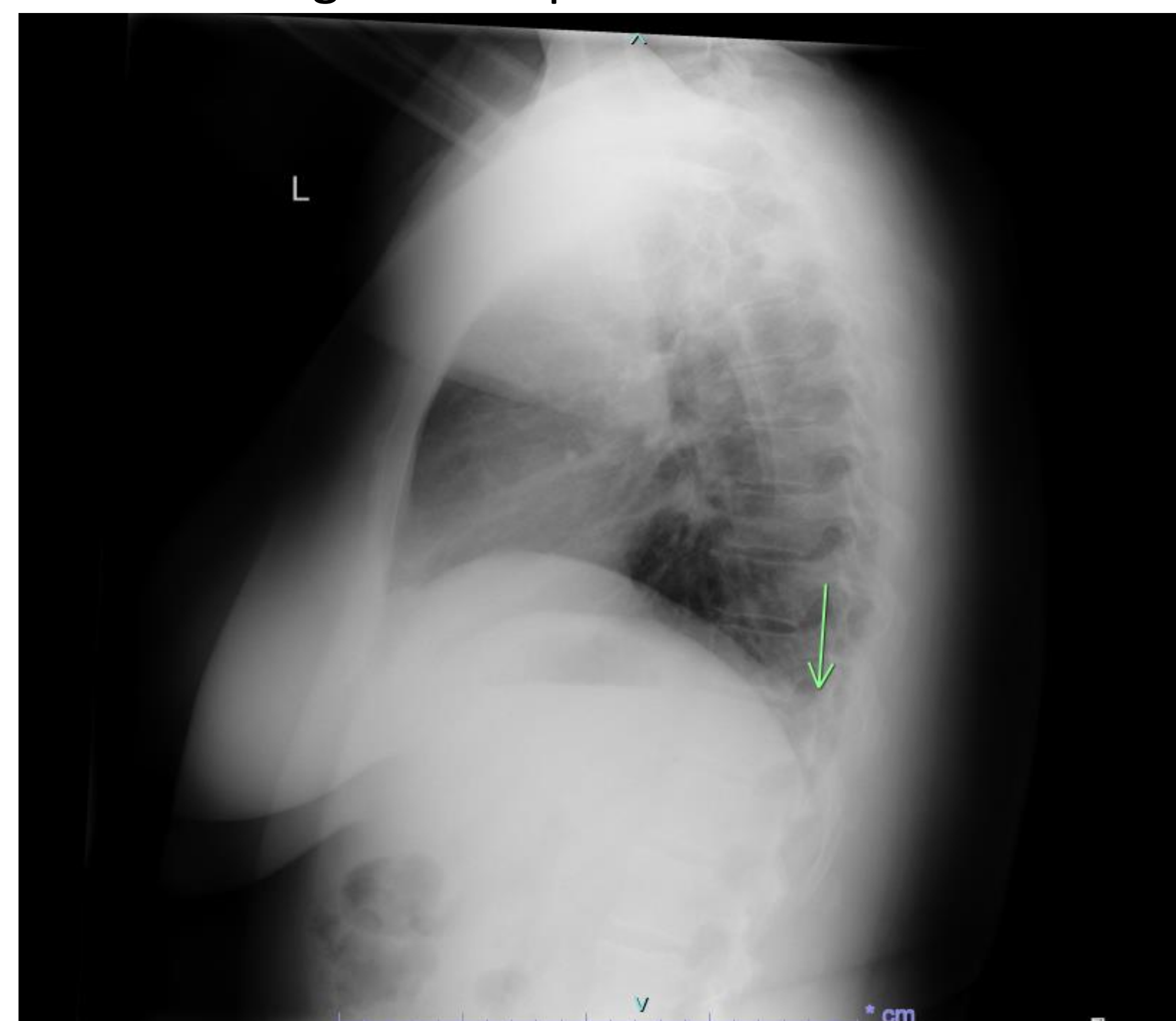


Figure 2. Lateral view chest X-ray demonstrating evidence of right-sided pleural effusion.



Follow-up

- The patient was discharged from the emergency room with instructions to follow up as an outpatient with her primary care physician, gynecologist, and pulmonologist.
- In the pulmonary office, she had a diagnostic and therapeutic right-side thoracentesis with a total of 600cc of serosanguinous fluid removed.
- The fluid analysis revealed exudative features, with elevated total protein of 4.8gm/dL (serum 6.5gm/dL) and elevated lactate dehydrogenase of 197 units/L (serum unavailable).
- At 6-week follow-up, she had no recurrence of symptoms.

Discussion

- We presented a young woman with a large right-sided pleural effusion likely secondary to OHSS.
- Pleural effusions are seen in severe OHSS, with studies demonstrating the finding in up to 29% of severe cases – but only 41 cases since 2020 have been reported of pleural effusion with no other symptoms.
- In the context of OHSS, previous studies reported that most pleural effusions were exudative in nature (up to 66% of cases), as in our patient.
- The mechanism of exudative pleural effusion is secondary to increased vascular endothelial growth factor secreted from the granulosa cells, leading to increased vascular permeability.
- Pleural effusion in OHSS is believed to be due to a pressure gradient that impairs diaphragmatic function, causing negative intrathoracic pressure that draws fluid into pleura.
- Although a conservative approach to pleural effusions due to OHSS is preferred due to self-limited manifestation (1-2 weeks), our patient was drained to expedite the resolution of her symptoms.

References

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