

# Immune checkpoint inhibitors are pioneering treatments revolutionizing oncology.

However, they can lead to a spectrum of **immune-related adverse events (irAEs)**, ranging from mild symptoms to **life-threatening conditions**, thereby requiring personalized and frequently intensive **immunosuppressive interventions**.



Community Memorial  
Health System

## Pembrolizumab-Induced Myasthenic Syndrome and Inflammatory Myositis with Concomitant Acute Respiratory Failure

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### Clinical Scenario

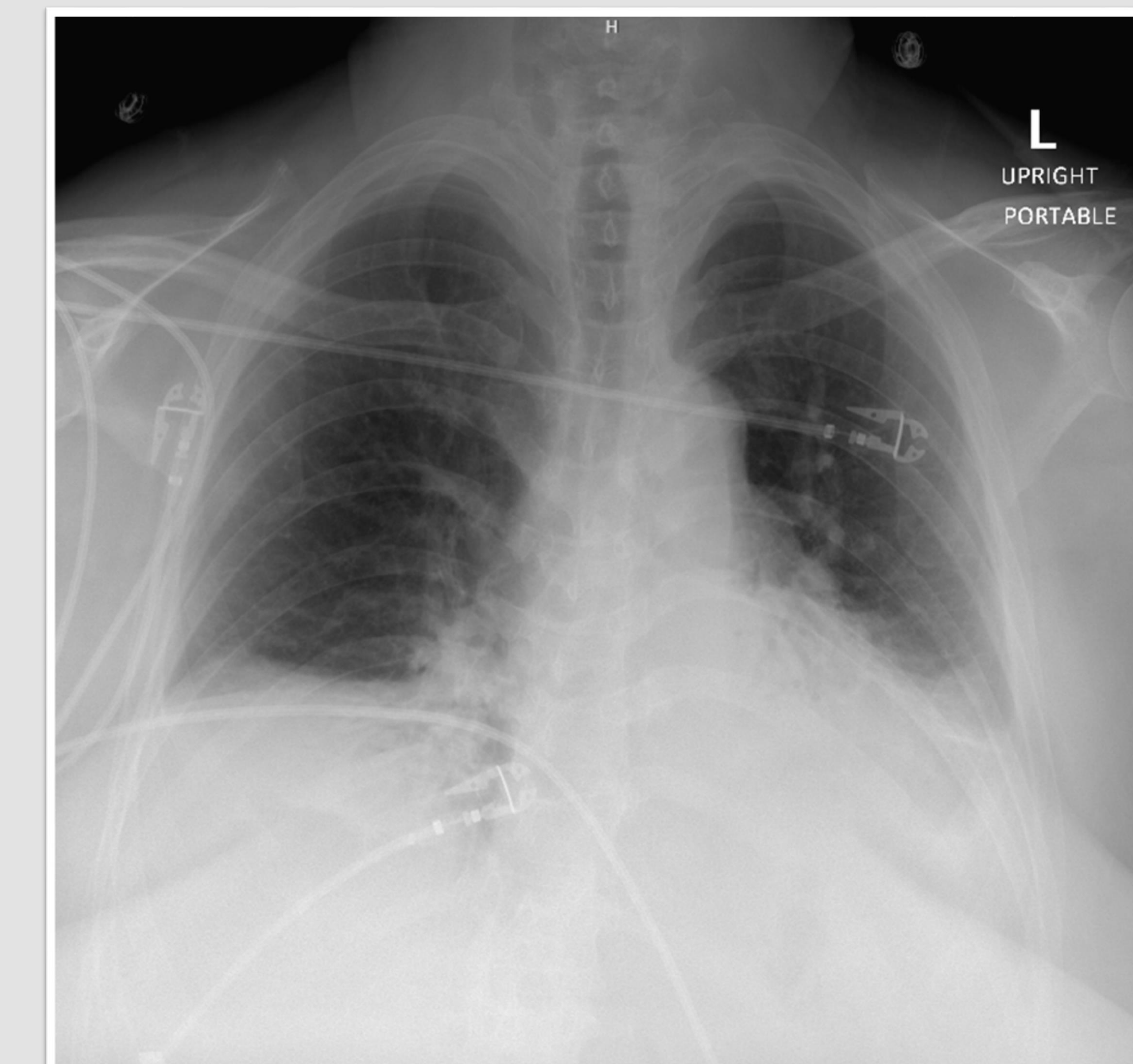
- A 64-year-old female with history of stage IIIc mismatch repair deficient endometrial cancer s/p total abdominal hysterectomy with b/l salpingo-oophorectomy received one cycle of carboplatin, paclitaxel, and pembrolizumab (Keytruda®).
- She presented with right eye ptosis, dysphonia, dysphagia, dyspnea, and severe muscle weakness with proximal worse than distal.

### Hospital Course

- Patient was diagnosed with myasthenia-like syndrome and idiopathic inflammatory myositis, resulting in subsequent acute respiratory failure requiring intubation, and drug-induced liver injury.
- She received pyridostigmine (5/22-5/24), IVIG (5/16-5/20), IV steroids (pulse 1 g daily x3 doses, followed by taper), and plasmapheresis (x7 cycles from 6/24-7/4).
- Given persistent dysphagia, patient received PEG tube insertion (6/14) and tracheostomy (7/4). She was weaned to T-piece (AM) and BiPAP (PM) on discharge.

### Significant Labs and Imaging

WBC	1.6 (L)
Hemoglobin	11.0 (L)
Platelet	149 (L)
AST	1416 (H)
ALT	651 (H)
CK	17502 (H)
Myasthenia Gravis Panel	Negative
Acetylcholine Receptor Ab Panel	Negative
MuSK Ab Panel	Negative
Ganglioside Ab Panel	Negative
Extended Myositis Ab Panel	Negative



### Discussion

- **High Mortality:** Studies indicate that irAEs associated with respiratory paralysis can be fatal, with a mortality rate of up to 50%.
- **Effective Treatment:** Administering pulse steroids, IVIG, and plasmapheresis has demonstrated significant improvement in our patient's oxygen requirements and avoiding mortality.
- **Crucial Role:** Immunosuppression plays a pivotal role in irAEs treatments, despite unclear pathophysiology. Notably, typical antibodies for conditions like MG and myositis were absent.
- **Consider Rituximab:** It is a potential treatment option due to its ability to deplete B-cell populations and reduce antibody production.

### References

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### Disclosures

The author(s) declare that they have no conflicts of interest or financial relationships that could be perceived as biasing the research presented in this case, and the views and opinions of the case are solely those of the author(s).