

Severe Gastrointestinal Mucositis Following Concurrent Palbociclib and Palliative Radiation Therapy

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Introduction

Cyclin-dependent kinases (CDK) 4 and 6 inhibitors are a new class of chemotherapy agents. CDK 4/6 inhibitors prevent the formation of the cyclin D-CDK4/6 complex, which prevents the progression of the cell cycle past the restriction (R1/2) checkpoint. Palbociclib (Ibrance) was the first CDK 4/6 inhibitors to be approved for the treatment of breast carcinoma. We present the case of a patient with metastatic breast cancer who received palliative radiation treatment while on palbociclib and developed severe side effects.

Case Presentation

Patient is a 67-year-old with history of Stage IIA estrogen receptor (ER)+/progesterone receptor (PR)+ HER2 negative left breast intraductal carcinoma who underwent lumpectomy, followed by chemoradiation. Two years later she was found to have ductal carcinoma in situ, ER+/PR+ and HER2 negative in her right breast, a CT chest abdomen pelvis revealed multiple bone lesions, biopsies of which confirmed metastatic disease. Patient was started on palbociclib and a month later received palliative radiation to T10 vertebral body and right iliac crest along with palbociclib and letrozole. One week after radiation treatment, patient presented with complaints of odynophagia and dysphagia to solids and liquids, along with 11 lb. weight loss. Esophagogastroduodenoscopy revealed severe ulcerated esophagitis along with gastritis and duodenitis. Multiple biopsies revealed squamous mucosa with reactive atypia of unknown cause. Palbociclib was held and patient was started on oral pantoprazole and a clear liquid diet, which was later advanced to a soft diet. Three weeks after discharge patient was seen in oncology clinic, she continued to tolerate letrozole and full diet and reported significant improvement in symptoms at which point was restarted on palbociclib.

Discussion

To our knowledge, this is the first report demonstrating concurrent palbociclib and palliative radiation treatment causing severe esophagitis, leading to dysphagia and weight loss. After the palbociclib was held, there was resolution of her symptoms and improvement in her oral intake. Studies have shown synergistic effects of radiation and cycle arresting agents such as CDK 4/6 inhibitor, which is believed to be the case of mucositis in our patient. As a result, caution is advised when patients are undergoing concurrent palbociclib and even low doses palliative radiation treatment. In these patients, providers should maintain a high index of suspicion for toxicities such as dermatitis and/or mucositis.

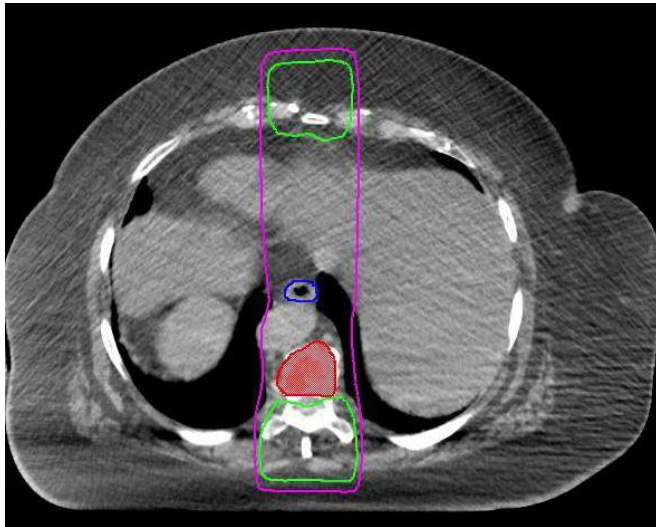


Figure 1: Radiation therapy plan demonstrates 20 Gy isodose line (Pink) and 22 Gy isodose line (Green). Visible are gross tumor volume (Red) and esophagus (Blue).

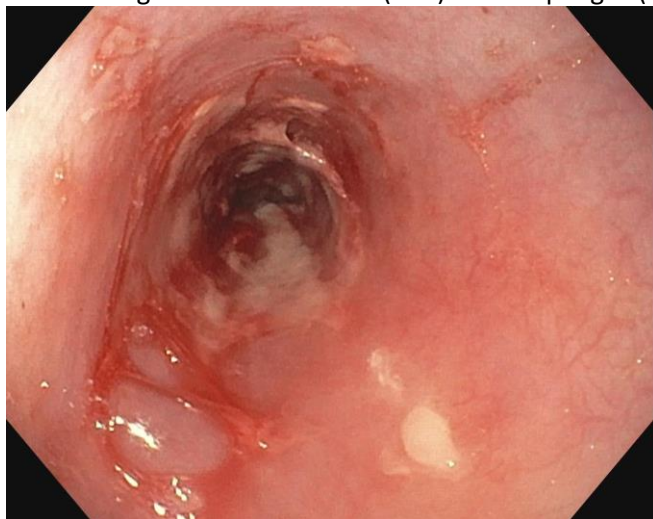


Figure 2: Distal third of the esophagus with severe esophagitis and ulcerated mucosa

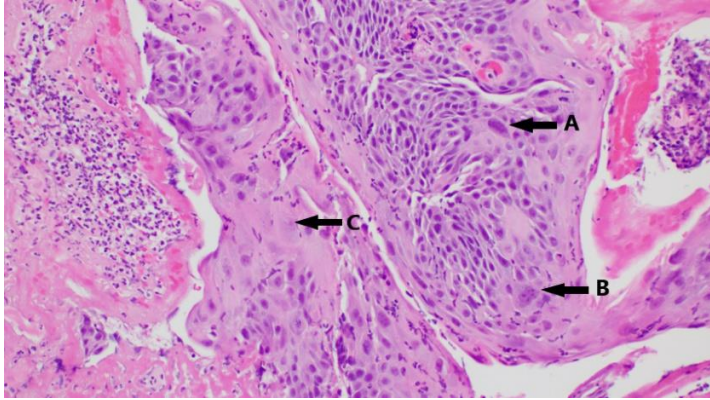


Figure 3. High power view of squamous mucosa revealing; A: Nuclear atypia, B: Multinucleation with prominent nucleoli, C: Focal cytoplasmic vacuolization.

References

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