

Control Number: 34

Abstract Category: Clinical Case Challenge in Cardio-Oncology

Title: Aortic Dissection in a Patient on Axitinib: Fatal Presentation of a Potential Complication

ABSTRACT BODY

Background and Purpose

Axitinib is a selective second-generation tyrosine kinase inhibitor which blocks angiogenesis and tumor growth by inhibiting vascular endothelial growth factor (VEGF) receptors and is used for the treatment of renal cell carcinoma (RCC). We describe a case of ascending aortic dissection in a patient on axitinib.

Case Description and Outcomes

An 81-year-old male with metastatic RCC, resistant hypertension, and chronic aneurysms of mid-ascending (5 cm) and mid-descending (6.2 cm) aorta presented after an episode of bilateral vision loss lasting four minutes. He had recently been started on axitinib two weeks prior for his RCC. Upon arrival, his blood pressure was 123/90 mmHg. Due to concern for stroke, CT and CTA of head and neck were performed, which showed an acute dissection of the aortic arch. CTA of chest showed a dissection of the ascending aortic aneurysm compressing the true lumen. He was evaluated by Cardiothoracic Surgery and immediately taken to the operating room for a Bentall procedure. Intra-procedurally, his dissection was noted to extend into the left and right coronary ostia. Unfortunately, immediate post-operative course was complicated by hemorrhagic shock, leading to patient's death.

Discussion

Aortic dissection is a life-threatening condition reported in about 0.3% of patients treated with VEGF inhibitors for cancer. The most common risk factors for aortic dissection are hypertension, atherosclerosis, and connective tissue disorders. VEGF inhibition causes capillary rarefaction and NO downregulation, which may contribute to the development of hypertension. The pathogenetic mechanism behind aortic dissection is unknown. In our patient, we suspect that in the setting of pre-existing aortic aneurysms and hypertension, the addition of axitinib created a perfect storm that led to his dissection. This case adds to the growing literature reporting the potential link between aortic dissection and VEGF inhibitors and aims to increase awareness of this association among the cardio-oncology community.

References

Takada, M., Yasui, T., Oka, T., Shioyama, W., Kuroda, T., Nakai, Y., Fujita, M. (2018). Aortic dissection and cardiac dysfunction emerged coincidentally during the long-term treatment with angiogenesis inhibitors for metastatic renal cell carcinoma; A case report of onco-cardiology. *International Heart Journal*, 59(5), 1174-1179.