

Life Threatening Lower Gastrointestinal Bleeding After a Transrectal Prostate Biopsy; Ibrutinib Side Effect or Vitamin K Deficiency?

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INTRODUCTION

Ibrutinib is an oral selective inhibitor of Bruton's tyrosine kinase used for the treatment of multiple B-cell mediated lymphoproliferative disorders. Bleeding events have been reported with use of ibrutinib. Authors report a case of life threatening bleeding after a transrectal prostate biopsy in a patient on ibrutinib for Waldenstrom's macroglobulinemia.

CASE REPRESENTATION

- A 71-year-old male with history of Waldenström's Macroglobulinemia and upper GI bleeding status post Billroth I procedure 40 years ago presented with hematochezia.
- Patient reported associated fatigue, lightheadedness, and a syncopal episode.
- One week prior to the onset of his symptoms, patient underwent a transrectal prostate biopsy.
- Following the biopsy, he experienced progressive rectal bleeding and hematuria.
- Upon EMS arrival, he was hypotensive and was found lying in a large amount of blood.
- He was transfused one unit of PRBCs en route to the hospital.
- Initial work up was significant for hemoglobin of 7.1 g/dL, hematocrit 21.3%, and INR 4.8.
- Abdomen and pelvis CT with contrast showed an area of active extravasation of contrast along the anterior border of the lower rectum, as well as material in the distal sigmoid colon and rectum likely represents blood clot. (Image 1)

- Patient was transfused two more units of PRBCs, two units of FFP, along with 10 mg of vitamin K intravenously.
- Despite volume resuscitation, he remained hypotensive, requiring Norepinephrine for pressure support.
- Gastroenterology was consulted and a colonoscopy revealed a puncture over a hemorrhoidal plexus consistent with recent prostate biopsy. (Image 2A, 2B)
- Hemostasis was achieved with an endoclip. (Image 2C)
- Patient's vitals and hemoglobin stabilized and he was discharged home safely.

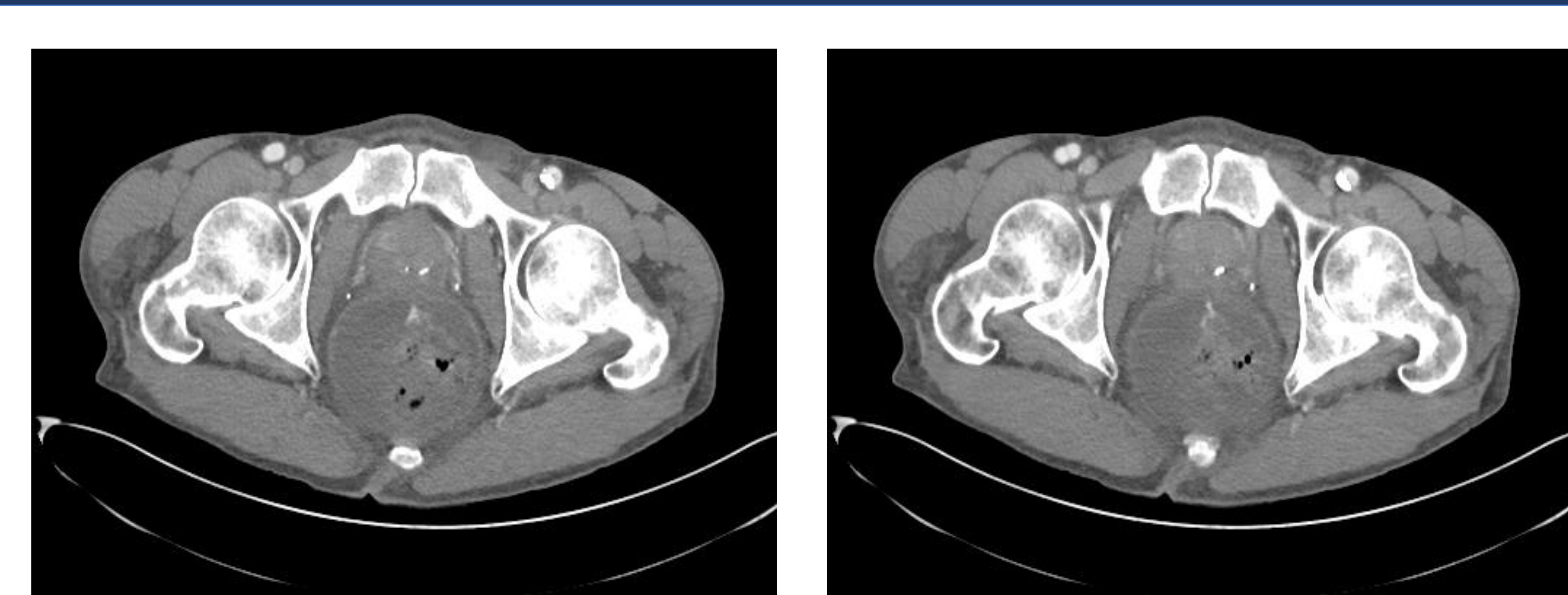


Image 1: CT abdomen and pelvis shows an area of active extravasation of contrast along the anterior border of the lower rectum



Image 2A, 2B: Colonoscopy showing a puncture over a hemorrhoidal plexus

Image 2C: endoclip placement

CONCLUSION

- Ibrutinib is a Bruton's tyrosine kinase inhibitor (BTK - inhibitor) used to treat multiple B-cell mediated lymphoproliferative disorders including Waldenström's Macroglobulinemia. [1,2]
- Ibrutinib has been shown to increase the rate of clinically significant bleeding when compared to standard chemotherapy. Clinical trials show a 48% increased risk of bruising and petechiae, and a 5% increased risk of grade III or more bleeding events. [3]
- Ibrutinib causes platelet dysfunction downstream of the GPV1 receptors; GPIb, and integrin $\alpha\text{IIb}\beta\text{3}$, that results in formation of unstable thrombi. [4]
- Data regarding vitamin K deficiency status post gastrectomy is scarce. The causes of vitamin K deficiency include fat malabsorption, bacterial overgrowth, marked reduction of carriers of vitamin K, and modifications of gut microbiota. [5]
- Given patient's history of Billroth I, vitamin K deficiency is suspected to be a contributing factor to his presentation due to increased acid in the small bowel resulting in altered microbiota.

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