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CASE REPORT OPEN ACCESS

The Effect of Anticoagulants on Stoma: A Case Study at Al-Wali Hospital, Aden, Yemen

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ABSTRACT

This case report describes the complications of anticoagulant therapy in a 64-year-old patient who had since had rectal cancer and persistent colostomy due to surgery after. During anticoagulation therapy for potential venous thrombosis, the patient was treated for bilateral lower limb edema and colostomy hemorrhage and had signs of generalized problems. Managing anticoagulation in these patients is especially problematic because of the background of the concomitant risk of thrombosis bleeding, especially at the stoma site, which is rich in vasculature and is easily traumatized or contaminated. This report presents the patient's clinical features, diagnostic approach, therapeutic options, and outcome. The anticoagulation of stoma patients is viewed from a broader perspective, highlighting the role of individual therapy and a multidisciplinary approach. In view of this situation, a specific, research-evidence-based recommendation regarding the management of anticoagulants in the stoma patients for the purpose of having the efficacy leading to safety would be warranted.

Keywords: stoma, anticoagulants, bleeding, colostomy, thrombosis, multidisciplinary care, Yemen

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INTRODUCTION

A stoma is a surgically created opening, normally from the colon or ileum, which allows the external diversion of normal waste from an internal organ (1). Colostomies are often performed after surgical treatment of colon cancer, intestinal injury, or bowel disease (2). Although stomas are common life-saving and quality-of-life-maintaining devices, they tend to cause a myriad of clinical complications, including skin breakdowns, infections, obstructions, hernias, and hemorrhage (3). While rare, bleeding, if it happens, may be alarming and could be indicative of focal trauma, local mucosal ulceration, or more serious whole-body issues such as coagulopathies or allergic reactions to medications (4).

In clinical practice, anticoagulants are often used to prevent and treat DVT, PE, AF, and other hypercoagulable syndromes (5). On the other hand, anticoagulation therapy has been identified to expose the individual to known complications of hemorrhage, particularly those whose anatomical or functional dispositions make them more susceptible (6). The vascular origin of the stoma location, the consistent handling of it, contact with bowel movement, and the acute inflammatory reaction or granulation tissue introducing all increase the danger of hemorrhage in stoma-euno patients (7). Older patients possessing several comorbidities and changes in their pharmacodynamics can have even more difficulties (8). The majority of recommendations in the literature rely on clinician discretion and individualized care planning; nevertheless, there is a paucity of guidance about the safe and effective administration of anticoagulants in this population (9).

This case study highlights a real-world scenario at Al-Wali Hospital in Aden, Yemen, with a 64-year-old male with a chronic colostomy who had stoma bleeding while receiving anticoagulant therapy. It aims to augment the little research on this topic and offer a more systematic, multidisciplinary methodology for treating these individuals.

CASE PRESENTATION

Patient Profile

Date of Admission: July 30, 2024
Age: 64 years
Sex: Male
Marital Status: Married, father of five children

Past Medical History

Hypertension (on regular antihypertensive therapy)
History of rectal adenocarcinoma with abdominoperineal resection and permanent colostomy performed two years prior
No known history of diabetes, heart failure, or renal disease

PRESENTING COMPLAINTS

A 64-year-old male patient came to the emergency room of Al-Wali Hospital, Aden, with bilateral lower limb edema, more evident on the left side, which had grown over two days. He also mentioned new bleeding from his permanent colostomy site. The patient said the bleeding was abrupt in beginning, brilliant red in hue, and unrelated to stomach discomfort or alterations in bowel habits. He denied having chest discomfort, palpitations, or dyspnea but did mention a low-grade fever and general weariness. Notably, he had a recent past of extended immobility, which caused questions concerning venous thromboembolism. No history of trauma, recent invasive treatments, or drug overdose. Two years prior, the patient had rectal cancer treated with abdominoperineal resection, which left him with a permanent stoma. He was following antihypertensive meds.

CLINICAL EXAMINATION

With a recorded temperature of 36.7°C, the patient was pale and somewhat febrile during clinical evaluation. With normal vital signs—blood pressure at 130/70 mmHg, heart rate of 82 beats per minute, and oxygen saturation at 99%

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in ambient air—he was conscious, attentive, and oriented. The physical exam revealed bilateral pedal edema, more noticeable on the left side, suggesting possible deep vein thrombosis. Bleeding was visible at examination of the colostomy site without probable prolapse or clear infection. Though not injured, the surrounding skin turned erythematous. Upon arrival, auscultation of the chest showed clear air sounds without any crepitations or wheezes. The abdomen was slightly distended; still, the abdomen was soft and nontender. Initial examination showed no evidence of ascites or hepatosplenomegaly.

Initial Investigations

We started an extensive set of laboratory and imaging investigations. Although platelet counts were within the normal range, the whole blood count indicated mild anemia. Coagulation tests indicated a slightly elevated international normalized ratio (INR), suggesting a potential bleeding predisposition perhaps exacerbated by anticoagulant use. Assessments of renal and hepatic function were within acceptable parameters. Requested to evaluate for deep vein thrombosis, particularly in the left lower leg, with Doppler ultrasonography. A pelvic X-ray was requested to exclude any underlying musculoskeletal condition that may be causing the edema. An abdominal ultrasound indicated mild ascites and hepatomegaly, necessitating further observation. No distinct intra-abdominal accumulation or obstruction was seen. The working diagnosis comprises lower leg DVT, anticoagulant-induced hemorrhage at the stoma site, and possible volume overload based on clinical presentation and investigative findings.

Management and Clinical Course

The initial treatment was discontinuing clopidogrel to reduce the risk of bleeding, especially considering the ongoing hemorrhage from the active colostomy. A flat enema was administered to alleviate fecal accumulation, and a surgical consultation was conducted to assess the stoma placement. Upon sufficient hydration, the patient started a soft, low-residue diet. Mild hypokalemia was rectified with intravenous administration of potassium chloride. Rivaroxaban 15 mg was initiated once daily with caution due to a high clinical suspicion of deep vein thrombosis, carefully balancing the thrombotic risk against the persistent bleeding risk. Basal crepitations developed in the patient on the seventh day of hospitalization, necessitating IV furosemide administration every four hours. Doppler subsequently confirmed left-sided deep vein thrombosis (DVT). Hypoalbuminemia emerged as a complication, which was addressed with the administration of frequent vitamin D3 supplements and albumin infusions. Spironolactone 50 mg was used once a day to manage fluid retention.

Pantoprazole enhanced gastrointestinal protection by the fifteenth day; a new urine catheter was inserted under sterile conditions. Progressive generalized edema and scrotal enlargement on the seventeenth day necessitated a contrast-enhanced abdominal CT scan and the insertion of a nasogastric tube. Two days later, the patient reported considerable low back pain and saw pressure ulcers on the right buttock, indicating skin deterioration associated with immobility. Wound management and protective dressings facilitated the regulation of the ulcers. On the twenty-second day, documented hypoglycemia episodes necessitated a reassessment of dietary practices and modifications to caloric intake. On the twenty-sixth day, urologist consultations recommended the application of fusidic acid lotion to mitigate irritation induced by catheters. Intravenous normal saline was administered at a rate of 40 mL/hour, allowing for meticulous regulation of fluid intake; concurrently, the dosage of furosemide was systematically decreased.

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Progression and Complications

August 8, 2024: Development of fine basal crepitations prompted administration of furosemide 10 mg every 4 hours. Doppler confirmed left-sided DVT.

August 10, 2024: Hypoalbuminemia was managed with daily albumin infusion and vitamin D3 supplementation. Spironolactone 50 mg once daily was added.

August 15, 2024: Pantoprazole was introduced to reduce gastrointestinal bleeding risk. Urinary catheter replaced.

August 17, 2024: Generalized edema and scrotal swelling led to an abdominal CT scan with contrast and insertion of a nasogastric tube.

August 19, 2024: Patient reported low back pain; pressure ulcers were noted on the right buttock, requiring wound care.

August 22, 2024: Episodes of hypoglycemia triggered a nutritional evaluation and caloric adjustments.

August 26, 2024: Urology advised the application of fusidic acid cream for skin protection and catheter management.

Final Adjustments

The patient's anticoagulant therapy was modified throughout the later part of their hospital stay; after the colostomy bleeding was stopped, rivaroxaban was increased to 15 mg twice a day. Many systems exhibited clinical improvement. The stoma's bleeding had ceased and the bilateral leg edema had significantly alleviated.

OUTCOME

Despite the eventual deterioration of the patient's clinical condition, he initially demonstrated notable clinical improvement, characterized by diminished bleeding at the stoma site, resolution of lower limb edema subsequent to fluid management and anticoagulant dosage modification, and stabilization of nutritional and hydration status through customized interventions. Despite continuous wound care and physiotherapy that showed initial signs of healing for pressure ulcers, the patient developed severe electrolyte imbalances and progressive multi-organ dysfunction. Regrettably, the patient succumbed on 30 August 2024 due to these complications.

DISCUSSION

This case demonstrates the peculiarities of anticoagulant treatment among colostomy patients, especially among elderly adults with several comorbidities. The initiation or maintenance of anticoagulation is a great challenge because there is a hemorrhagic risk in a stoma site, which can be explained by extensive vascularization and the potential injury risk of the latter. DOACs, commonly branded as rivaroxaban, for instance, it has several advantages over warfarin, which include a low risk of interacting with food and not needing adjusted measurement of INR (10). In turn, rivaroxaban has bleeding risks, which pose a risk in the gastrointestinal context. Previous research corroborates this caution. Rentea et al. (11) presented a case report of a colonic hematoma following enema administration in an anticoagulated individual, thereby highlighting the vulnerability of colonic and stoma areas for hemorrhaging. Al-Worafi et al. (12) highlighted the importance of overlooked necessity for targeted pharmacological intervention in ostomy patients; still, there is a lack of sparse anticoagulants' guidance. Due to the rise in the number of elderly patients with a level of bleeding and anticoagulant pharmacokinetics along with opening comorbidities such as hypertension or hypoalbuminemia, it is required to adopt a multidisciplinary work (13). This requires interdisciplinary efforts on the part of surgical, internal medicine, pharmaceutical, wound care, and nursing disciplines to achieve equilibrium between thromboembolic prophylaxis and hemorrhage management. Additionally, the patient's episodes of hypoglycemia, fluid overload, and pressure

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ulcers emphasize the absolute vulnerability in such patients and the compounding effects that one problem can have on another.

CONCLUSION

This case exemplifies the delicate equilibrium required when managing older individuals with complex anticoagulation histories and persistent stomas. The treatment plan must be holistic, encompassing thrombosis prevention, assessment of bleeding risk, nutritional considerations, movement restrictions, and skin integrity.

The administration of rivaroxaban and other anticoagulants needs meticulous supervision. This instance exemplifies the necessity for ongoing research to address existing deficiencies in clinical guidance, multidisciplinary cooperation, and individualized treatment procedures. Future initiatives must provide evidence-based anticoagulant strategies particularly designed for ostomy patients to enhance safety and results.

Recommendations

Considering the clinical complexity shown in this case, it is essential to emphasize a multidisciplinary and tailored approach in the management of anticoagulant therapy for patients with stomas. Particularly in elderly patients with comorbidities, a thorough risk-benefit assessment must be conducted prior to initiating anticoagulation to evaluate the risk of bleeding in relation to thromboembolic occurrences. Appropriate dose adjustments rely on ongoing surveillance of coagulation status—specifically INR readings in warfarin patients—and regular evaluation of renal and hepatic function for those on direct oral anticoagulants. To address anticoagulation, wound healing, fluid balance, mobility, and nutritional support, the involvement of a multidisciplinary care team—comprising surgeons, physicians, pharmacists, wound care specialists, and nutritionists—is recommended. Furthermore, ensuring adequate stoma care, adherence to medication, and prompt detection of bleeding or other adverse effects, patient and caregiver education aids in issue prevention. This case underscores the essential requirement for evidence-based treatment guidelines tailored for anticoagulant use in stoma patients; subsequent research should focus on generating robust data to inform these practices.

Ethical approval

This case has been approved ethically by the Medical Ethics Committee at Faculty of Medicine and Health Sciences, University of Science and Technology, Aden, Yemen (MEC/AD041). Furthermore, informed consent was obtained from the patient.

Conflict of interest

The authors declare that no conflict of interest.

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