

CASE REPORT

RETROPERITONEAL HEMATOMA WITH SIGMOID NECROSIS AFTER ANTICOAGULANT TREATMENT FOR DEEP VENOUS THROMBOSIS IN A PATIENT WITH SURGICALLY TREATED CERVICAL CANCER

Nicolae Bacalbaşa¹, Irina Bălescu², Vladislav Braşoveanu³, Iulian Brezean¹

¹ „Ion Cantacuzino“ Clinical Hospital, University of Medicine and Pharmacy “Carol Davila“, Bucharest, Romania

² „Ponderas“ Academic Hospital, Bucharest, Romania

³ „Dan Setlacec“ Fundeni Clinical Institute, University “Titu Maiorescu“, Bucharest, Romania

ABSTRACT

Sigmoid necrosis due to ischemic colitis induced by the presence of retroperitoneal hematoma is a rare situation, especially due to the presence of the particular vascularization of this intestinal segment, characterized by the presence of the collateral blood supply. However, in a small number of cases, sigmoid necrosis might develop. We present the case of a 56-year-old patient who has been initially submitted to surgery for pre-irradiated stage IIB cervical cancer. Postoperatively, the patient developed a deep venous thrombosis which necessitated administration of low molecular weight anticoagulants. Two weeks later the patient presented in emergency for diffuse abdominal pain and rectal bleeding. She was diagnosed with a retroperitoneal hematoma and sigmoid necrosis, so a sigmoidectomy with colo-rectal anastomosis was performed.

Keywords: retroperitoneal hematoma, sigmoid necrosis, anticoagulant treatment, deep venous thrombosis, cervical cancer

RÉSUMÉ

Hématome rétropéritonéal avec nécrose sigmoïde suite à un traitement anticoagulant pour thrombose veineuse profonde chez une patiente avec du cancer cervical opéré

La nécrose sigmoïde due à la colite ischémique induite par la présence d'un hématome rétropéritonéal est une situation rare, en particulier en raison de la présence de la vascularisation particulière de ce segment intestinal, caractérisée par la présence d'un apport sanguin collatéral. Cependant, dans un petit nombre de cas, la nécrose sigmoïde pourrait se développer. Nous présentons le cas d'une patiente de 56 ans qui a été initialement soumise à une intervention chirurgicale pour le cancer du col de l'avant-irradiation dans le stade IIB. En post-opératoire, la patiente a développé une thrombose veineuse profonde qui nécessitait l'administration d'anticoagulants de bas poids moléculaire. Deux semaines plus tard, la patiente a présenté en cas d'urgence une douleur abdominale diffuse et des saignements rectaux. On lui a diagnostiqué un

hématome rétropéritonéal et une nécrose sigmoïde, de sorte qu'une sigmoïdectomie avec anastomose colo-rectale a été réalisée.

Mots-clés: hématome rétropéritonéal, nécrose sigmoïde, traitement anticoagulant, thrombose veineuse profonde, cancer du col de l'utérus

INTRODUCTION

Irreversible gastrointestinal ischemia is usually associated with the presence of a sudden reduction of blood supply in the absence of functional collateral circulation. The most common causes include thrombosis, vasculitis and volvulus of a certain intestinal segment¹. Once the acute ischemic phenomena arise, mucosal modifications occur in the next hour, while transmural ischemia is to be expected in the next 8 to 16 hours². Due to the presence of an important collateral blood supply on the left colon, sigmoid colon and rectum, in many cases complete occlusion of the inferior mesenteric artery will not lead to the apparition of the necrosis of any of these segments. Actually, this is the explanation of the fact that in vascular surgery the inferior mesenteric artery can be ligated at its origin during aortic aneurysm repair, without affecting any part of the descending colon, sigmoid or rectum. However, in cases in which the collateral blood supply is not strong enough represented, sigmoid necrosis might occur^{3,4}.

CASE REPORT

A 56-year-old patient, known with medical history of chronic renal insufficiency, was initially submitted to surgery for pre-irradiated stage IIB cervical cancer; at that moment, a total radical hysterectomy with bilateral adnexectomy, pelvic and para-aortic lymph node dissection were performed. The postoperative course was favorable, the patient being discharged in the fifth postoperative day, under prophylactic anticoagulant treatment with enoxaparin, 40 mg/day. However, one week after discharge, the patient presented lower limb pain in association with edema. The venous Doppler ultrasonography confirmed the presence of a deep venous thrombosis, so the anticoagulant therapy with enoxaparin was replaced with continuous administration of heparin for five days followed by enoxaparin treatment, this time 40 mg, twice per day.

Two weeks later, the patient presented in emergency for diffuse abdominal pain, nausea, vomiting and rectal bleeding. The computed tomography revealed the presence of a large retroperitoneal

hematoma compressing the inferior mesenteric artery and secondary sigmoid necrosis. The patient was re-submitted to surgery; the retroperitoneal hematoma was evacuated and the necrotic sigmoid colon was resected; the proximal end of the left colon was exteriorized in terminal left colostomy while the distal part was closed. The postoperative course was uneventful, the patient being discharged in the tenth postoperative day. At three months follow-up the continuity of the digestive tract was re-established by an end-to-end colorectal anastomosis.

DISCUSSION

Ischemia of the sigmoid colon due to retroperitoneal hematoma is an uncommon situation, only few cases being reported so far. A similar case was reported by Soeren Roepstorff in 2016; at that time, the authors reported the case of an 87-year-old patient who was diagnosed with a right sided nondisplaced pubic ramus fracture associated with retroperitoneal hematoma which increased the retroperitoneal pressure and obstructed the blood supply of the sigmoid and the rectum. The case was solved in a similar manner like in our case; the patient was submitted to surgery and the necrotized areas of the large bowel were removed⁴. However, in this case the sigmoid ischemia was also explained through the associated co-morbidities of the patient, including advanced age, arterial hypertension and third degree atrioventricular block treated with pace-maker⁴.

The particularity of these cases are related to the localization of the ischemic segment; it is well known that the distal part of the colon benefits from multiple vascular sources, such as the inferior mesenteric artery, superior and middle rectal arteries arising from the internal iliac artery and the marginal artery of Drumond (which originates from vascular branches of the superior and inferior mesenteric arteries)¹. It seems that in certain cases sigmoid ischemia might occur, the main explanation being related to the poor functionality of the vascular collaterals. However, whenever colorectal ischemia is suspected, a rapid intervention should be performed due to the fact that this condition is associated with an extremely high rate of morbidity and mortality.

When it comes to the association between anticoagulant therapy and hemorrhagic risk, a rate of 4% of hemorrhagic events during anticoagulant treatment has been reported so far^{5,6}. Most commonly, anticoagulant related hematomas arise in the soft tissues, gastrointestinal tract and in the urinary tract, being significantly influenced by the age of the patient, association of concurrent non-steroidal antiinflammatory agents, or association of concurrent comorbidities such as impaired renal function, impaired hepatic function or cardiac disease^{7,8}. As for the relationship between anticoagulant therapy and spontaneous retroperitoneal hematoma, the related incidence of this location of the hematoma and anticoagulant therapy ranges between 0.6-6.6%⁹. The main mechanisms responsible for the apparition of spontaneous retroperitoneal hematomas during anticoagulant therapy consist of anticoagulation induced immune microangiopathy, unrecognized minor traumas or diffuse occult vasculopathies^{9,10}.

Enoxaparin is a low molecular weight heparin which was approved from 1993 for treating deep venous thrombosis and pulmonary embolism and is one of the most commonly prescribed anticoagulants worldwide. However, it is not without any risk, several cases of major bleeding being reported so far; most often, the bleeding leads to the apparition of psoas hematoma, retroperitoneal hematoma, thigh hematoma, intrahepatic hemorrhage, spinal or epidural hematoma¹¹. When it comes to the relationship between spontaneous retroperitoneal hematomas and enoxaparin administration, it has been demonstrated that it accounts for up to 5% of all enoxaparin induced

complications, being more frequent in elderly patients with impaired renal function and who receive an approaching dose of 1 mg/kg, most often in association with other drugs which alter hemostasis¹²⁻¹⁴.

Another issue which should be taken in discussion in this case is the one regarding the association between deep venous thrombosis and gynecologic oncology. It has been widely demonstrated that patients submitted to surgery for gynecological malignancies have a higher risk of developing deep venous thrombosis due to their hypercoagulable status, immobility or even vascular involvement of the malignant process. It has been estimated that the overall risk of developing deep venous thrombosis in women with gynecological cancer ranges between 19 to 38% while the same risk in benign conditions ranges between 10-15%¹⁵. In order to determine who are the patients presenting the highest risk of developing deep venous thrombosis after gynecologic oncology procedures, Stroud et al tried to validate the Caprini risk assessment model and to evaluate the benefits of double prophylaxis. According to this model, the authors classified the risk factors in four classes; risk factors included in the first class received one point, those in the second class received two points, those in the third category received three points and those in the fourth category received five points. The authors demonstrated that patients who developed deep venous thrombosis were older, necessitated more complicated surgical procedures, had a higher blood loss, a longer hospital in stay and a higher Caprini score¹⁶.

With regard to the complexity of the surgical procedure, it should not be omitted that patients



Figure 1. Massive retroperitoneal hematoma with sigmoid ischemia.

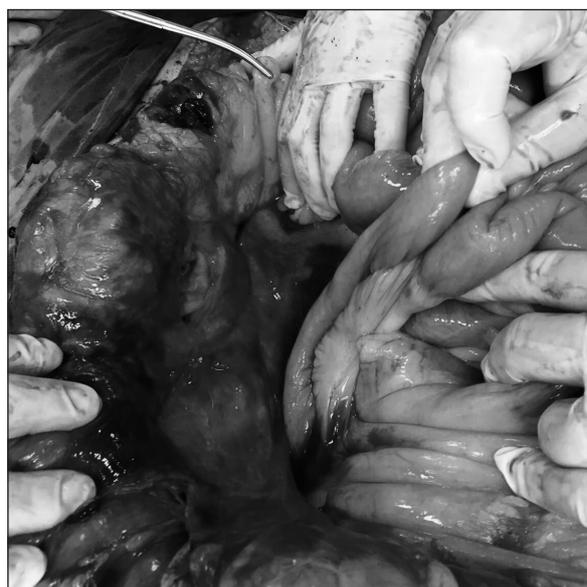


Figure 2. Massive retroperitoneal hematoma.



Figure 3. Mobilization of the necrosed sigmoid colon.



Figure 4. The final aspect after complete mobilization of the sigmoid loop.

presenting with cervical cancer have been usually submitted to neoadjuvant radiation therapy, which can also affect the biological condition of the patient. Moreover, in certain cases, although neoadjuvant treatment has been performed, multiple visceral resections are needed in order to achieve a good control of the disease¹⁷⁻¹⁹.

CONCLUSION

Sigmoid ischemia due to retroperitoneal hematoma during enoxaparin treatment for deep venous thrombosis is a rare situation, only few cases being reported so far. However, association of other comorbidities such as impaired renal or liver function as well as chronic use of antiinflammatory drugs might increase the possibility of developing spontaneous hematomas^{20, 21}. Moreover, the induction of secondary sigmoid ischemia is even scarcely reported²². The main mechanisms responsible for this eventuality seem to be correlated with both microangiopathic phenomena occurring inside the hematoma and with an insufficient marginal vascular arcade along the left colon. However, although it is a very uncommon association, this eventuality should be always taken in consideration when a patient with a recent history of deep venous thrombosis treated by anticoagulants presents with diffuse abdominal pain and rectal bleeding.

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