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**Case Report**

# Conservative management of an iliopsoas hematoma causing walking difficulty in an elderly patient on anticoagulation therapy: a case report

**Deepak Kumar Kisku*, Sudhir Kumar Panigrahi, Amaresh Mishra, Abinash Kanungo, Niranjan Moharana**

Department of General Surgery, Kalinga Institute of Medical Sciences (KIMS), Patia, Bhubaneswar, Odisha, India

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***Correspondence:**
Dr. Deepak Kumar Kisku,
E-mail: dr.deepakkisku@gmail.com

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## ABSTRACT

Spontaneous iliopsoas hematoma is a rare complication in patients suffering from bleeding disorders like hemophilia, Von Willebrand's disease or those taking blood thinners like aspirin and clopidogrel or anticoagulant medications like warfarin for atrial fibrillation or post-thrombotic status. It can present as severe pain, muscle dysfunction, difficult walking or neurological dysfunction due to compression on femoral nerve or lumbar plexus. A high index of suspicion with early blood and radiological investigations like contrast enhanced computed tomography (CECT) or magnetic resonance imaging (MRI) of the part is immensely helpful in diagnosis and prompt management of such patients. A low hemoglobin or hematocrit level and a high INR is supportive while CECT or MRI of the abdomen and pelvis is confirmatory. Management in a hemodynamically and neurologically stable patient include immediate withdrawl of the anticoagulant, bed rest, infusion of I.V. fluids, vitamin K, fresh frozen plasma and packed red cell transfusion, which ensures complete recovery in most of the cases. However angio-embolization to control ongoing arterial bleeding is lifesaving when feasible or emergent open decompression and bleeding control surgery can save the life or prevent permanent neurological damage to the limb. Decompression of the hematoma by ultrasound or computed tomography guided catheter drainage is helpful alternative in few selected cases. We report an elderly patient on warfarin, who suddenly developed difficulty in walking within hours of a strained defecation, diagnosed to suffer from left iliopsoas hematoma and responded to conservative management with complete resolution of symptoms by 3 weeks.

**Keywords:** Spontaneous iliopsoas hematoma, Anticoagulant use, Lower abdominal and groin pain, Difficult walking, Conservative management

## INTRODUCTION

Spontaneous iliopsoas or retroperitoneal hematoma is a well-documented rare lesion in patients taking anticoagulation medications frequently for atrial fibrillation or post-thromboembolic events or patients under hemodialysis or suffering from hemolytic disorders like hemophilia, insufficiency of factors IX and X, antiphospholipid syndrome and Von Willebrand's disease.[1] The clinical presentation may vary from non-specific lower abdominal or flank pain resulting in a delayed diagnosis to severe lower abdominal, groin, flank or thigh pain, with or without an unstable hemodynamic status or rarely with lower limb paresis out of compressive femoral or lumbar neuropathy.[2] The incidence of bleeding complications in patients on anticoagulants for varied reasons has been reported to be 1-7% in each year of patient's life.[3]

## CASE REPORT

A 68 years male patient, admitted with complaint of sudden severe pain in left lower abdomen and groin following 2 hours of a strained defecation and subsequent inability to walk due to painful indrawing of left thigh at hip joint after one day. The patient is a known hypertensive, sustained a coronary artery disease and had undergone coronary artery bypass graft (CABG), 10 months back. He then suffered a cardio embolic stroke 5 months back and since then was continuing on oral daily dose of clopidogrel 75 mg and acenocoumoral 2 mg. On examination there was severe tenderness at left lower abdomen and groin, but no local rise of temperature or crepitus. Extension of left thigh is very painful. Muscle tone and power of both lower limbs were normal. History of fall or traumatic injury is lacking. Per abdomen was soft and nontender, no palpable mass was felt and both femoral pulse were equal, kidney not ballotable and there was no loin tenderness. Both side hernia orifices were intact and scrotum was normal. No neurological deficit elicited on examination of lower limbs. His blood pressure was 100/68 mm of Hg and pulse rate 90 beats/min, laboratory investigation showed grossly deranged prothrombin time (PT) and international normalized ratio (INR) of 138.3 and 15.96 respectively, packed cell volume (PCV)-34.5, hemoglobin (Hb)-11.9 gm/dl, total platelet count-171×$10^3$, random blood sugar test-120 mg/dl, serum urea-45 mg/dl and creatinine-1.2 mg/dl. Ultrasonography of abdomen and pelvis showed a heterogenous hypoechoic area with peripheral vascularity in left iliac fossa. With an immediate diagnosis of left sided iliopsoas hematoma with iliopsoas spasm, the patient was managed with withdrawl of the offending medications i.e., tab. clopidogrel and tab. acenocoumarol, complete bed rest, institution of IV fluids, antispasmodic, vitamin K 10 mg I.V., and 4 units of fresh frozen plasma (FFP), prophylactic broad spectrum antibiotics, opoid analgesics and urinary catheterisation. After 24 hours, patient had stable vitals and the repeat Hb was 11.4 gm/dl, PCV-34.5, erythrocyte sedimentation rate (ESR)-61 and C-reactive protein (CRP)-19.3. Cardiologist, Cardiothoracic surgeon, Neurologist and Orthopedician opinions were taken. A 2 kg lower limb skin traction was applied to the left lower limb. He then underwent a CECT of abdomen and pelvis to know the exact location, extent and approximate volume of the hematoma, which revealed left iliacus and psoas muscle as bulky and are mildly hyperdense in upper thigh region with surrounding fat stranding causing thickening of left renal fascia with diffuse retroperitoneal and perinephric stranding in left side without any evidence of active bleeding. On day 3, vitals of patient were stable but Hb dropped to 7.3 gm/dl and PCV-23.2. So he was transfused 1unit of packed red blood cells. The Hb improved to 9 gm/dl. The conservative treatment was continued with serial monitoring of PT, INR and Hb. On day 8, he responded well to conservative line of treatment with stable vitals, Hb was 11.1 gm/dl and PCV-33.2 and a normal clotting profile of P -13 and INR-1.22. His left lower limb pain and weakness significantly reduced and he started to walk slowly with minimal pain. On day 12 patient was discharged with medications including acenocoumarol and clopidogrel as per the opinion of cardiologist. On next visit after 21 days the hip pain had improved considerably with almost a near normal walking and the clotting profile tested was normal.

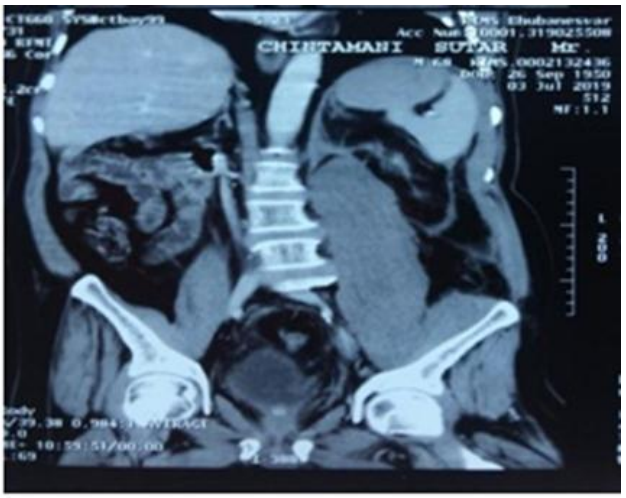

**Figure 1: CECT of abdomen and pelvis showing bulky left iliacus and diffuse retroperitoneal and perinephric stranding on left side without any evidence of active bleeding.**

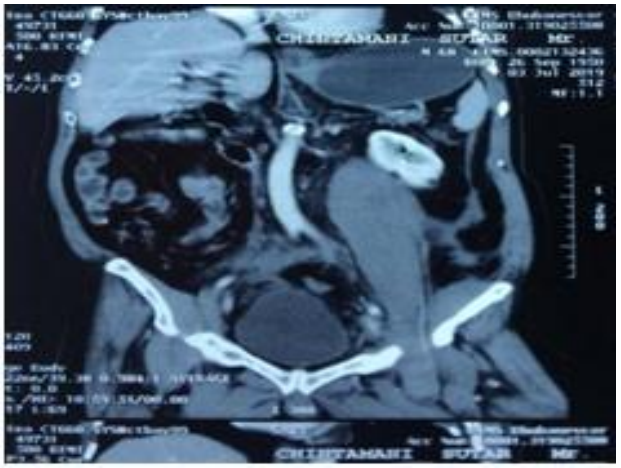

**Figure 2: CECT of abdomen and pelvis showing extension of hyperdense lesion down to upper thigh.**

## DISCUSSION

Though the source of iliopsoas hematoma can be blunt trauma to the abdomen, spontaneous bleed occurs in the majority, especially in elderly individuals on anticoagulants or antiplatelet drugs or less commonly from inherited or acquired clotting disorders like hemophilia or Von Willebrand's disease. The blood thinner Warfarin (Coumadin) is used as an anticoagulant for more than 60 years in the treatment and prophylaxis of venous thrombosis, pulmonary embolism, in high risk

patients suffering from atrial fibrillation, cardiac valve replacement and patients with genetic C and S protein deficiency, to prevent thrombo-embolic stroke or ischemias. Warfarin acts through both intrinsic and extrinsic pathways in the coagulation cascade by inactivating vitamin K dependant clotting factors II, VII, IX and X. Metabolism of warfarin occurs via cytochrome P-450 system, through hepatic route and protein binding and is the principal cause for drug-drug interactions, Warfarin is usually prescribed as oral single daily dose with concurrent monitoring of INR at a range goal of 2.0 to 3.0 in common and 2.5 to 3.5 in patients with mechanical mitral valve.[4] Heparin administration for a period of 5 to 7 days is routinely advocated prior to use of oral warfarin to prevent its adverse effects like tissue necrosis, systemic athero-embolism, calciphylaxis and cholesterol micro-emboli. [5] Alternative anticoagulant can be used in patients with warfarin induced severe adverse effects including Purple toe syndrome due to micro-emboli to toes.[5] The newer anticoagulants include eliquis (apixaban), pradaxa (dabigatran), xarelto (rivaroxaban), and savaysa (edoxaban). The most recent permanent cardiac implant device "watchman" can effectively reduce the risk of stroke and can replace any anticoagulant especially in patient of arterial fibrillation not caused by diseased heart valve by acting through closure of the left atrial appendage.[6]

Medications that interfere with warfarin and enhance the risk of bleeding when co-prescribed are antiplatelets, anticoagulants, nonsteroidal anti-inflammatory drug and SSRIs (selective serotonin reuptake inhibitors) even with a normal INR.[7] The co-administration of commonly used antibiotics that are relatively contraindicated in patients on warfarin are 3rd generation cephalosporine, ciprofloxacin, metronidazole and co-trimoxazole acting through cytochrome P450 inhibition.[8] Other drugs risking the patient for bleeding during warfarin use are amiodarone, salicylate, fibric acid derivatives, phenytoin, rifampicin, alcohol use and herbal products like ginseng and green tea.[5,9,10] The absolute contraindications of warfarin use are pregnancy for fear of Fetal warfarin syndrome causing fetal malformations and an increased risk of spontaneous abortion and stillbirths.[11] The INR need to be repeated within 1 to 7 days in all patients on anticoagulants to ensure it within the therapeutic range of 2.0 to 3.0 and at least 2 to 4 weekly during the maintenance phase. INR should also be checked at starting, discontinuing and changing doses of drugs that are known to interact with warfarin. Factors needing monitoring in patients on warfarin are indicators of bleeding like malena, epistaxis, skin hematomas, blood Hb and Hct (hematocrit) level, urinalysis, liver function tests and occult blood test. In patients on warfarin and presenting with bleeding and an increases INR are suggestive of warfarin toxicity and are best controlled by stopping its intake and administering I.V.-1 to 10 mg of vitamin K, which reverse coagulopathy within 24 hours. In patients with high INR above 10 without evidence of bleeding, oral vitamin K, 1 to 5 mg can reverse coagulopathy within 24 hours. Cases needing rapid reversal of warfarin induced coagulopathy should be given FFP or 4F PCC (four factor prothrombin complex concentrates) which reverse coagulopathy within 15 to 30 minutes with less volume use.[12]

The differential diagnosis for patients with sudden onset low back pain include pancreatitis, lumbar spondylosis with sciatica, inguinal hernia, ureteric colic, musculoskeletal pain, abdominal aortic aneurysm and aortic dissection. In cases of large retroperitoneal hematomas due to iliopsoas bleed with anterior extension patient may present with Cullen's sign in the periumbilical area or Grey Turner's sign in the flanks. Occasional cases with rapid or ongoing bleeding may present with hypovolemic shock.

A definite management protocol for spontaneous iliopsoas hematomas is still lacking and it varies between conservative treatment, through radiological interventions to open surgical decompression. Basis of the modality of treatment depend on the cause, volume of hematoma, timing of the diagnosis and the degree of neurological deficit. Patients with lower abdomen, flank, back or thigh pain with little or no neurological symptoms and small volume hematomas without hemodynamic instability respond to conservative approach with bed rest and measures to correct bleeding abnormality by vitamin K, FFP that ensures spontaneous absorption of hematoma in the majority of cases. However large hematoma, patient in unstable hemodynamic status and severe neurological impairments are managed by urgent surgical decompression and arrest of bleeding vessels in addition to vitamin K, FFP and blood transfusion. Selected patients and those unfit for open surgery can alternatively be managed by ultrasound or CT guided percutaneous aspiration and drainage of the hematoma if amneble for it. In hemodynamically unstable patients showing bleeding vessels in CT-angio, arterio-embolization can be life saving if the facility is available.

## CONCLUSION

Patients on anticoagulation therapy for obvious reasons run the risk of traumatic to spontaneous bleeding at deeper tissues, especially in the iliopsoas muscle and retroperitoneum with varied presentations and acuteness, posing a diagnostic and management challenge. Hence in these patients, more so when elderly, a high index of suspicion of iliopsoas or retroperitoneal hematoma be made until proved otherwise upon confronting spontaneous sudden lower abdominal, flank, groin or thigh pain or paresthesia and weakness of lower limb. A timely diagnosis by ultrasound, more accurately by CECT or MRI of the abdomen and pelvis is essential. Conservative management for less severe cases and emergent interventional to decompressive open surgery for hematoma evacuation and control of the ongoing bleeding vessels in severely neuropathic and hemodynamically unstable patients is crucial and lifesaving.

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