

Iliopsoas Hematoma in Warfarin Treatment: Case Report and Review of Literature

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Abstract Iliopsoas hematoma is a rare complication in patients on warfarin and usually presents as lower abdominal, groin or thigh pain. The author presents a case of spontaneous iliopsoas hematoma in an 89-year-old female that was initially suspected to be a hip fracture. A review of 12 case reports on iliopsoas hematoma in patients on warfarin shows that the mean age of reported cases was 72 years. Patients present with lower abdominal, groin, flank or thigh pain (100%), lower extremity weakness and/or difficulty in walking (50%) and loss of or abnormal sensation in the lower extremity (17%). Forty two percent of the hematoma cases were in patients with therapeutic or sub-therapeutic international normalized ratio (INR). Iliopsoas hematoma should be considered in elderly patients on warfarin who present with lower abdominal or groin pain, even in patients with therapeutic or sub-therapeutic INR.

Keywords: *iliopsoas, hematoma, warfarin, anticoagulant complication*

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1. Introduction

Patients on warfarin frequently become over anticoagulated which can lead to hemorrhage. [1] Iliopsoas hematoma is a rare complication in patients on warfarin and usually presents as lower abdominal, groin or thigh pain even in patient with therapeutic international normalized ratio (INR). [2] The risk of bleedings tends to increase with age and suprathreshold INR and care providers should suspect iliopsoas hematoma in patients, especially the elderly, on warfarin presenting with spontaneous or post traumatic lower abdominal or groin pain. [1,3] The author presents a case of spontaneous iliopsoas hematoma that was initially suspected to be a hip fracture.

2. Case Presentation

89-year-old female patient with underlying hypertension and atrial fibrillation on warfarin presented with concern of left groin and left thigh pain of one-week duration. Patient says that pain is constant, sharp, non-radiating, worse with movement, and about 7 out of 10 in intensity. Patient denies any fall, trauma or injury. Patient denies dysuria, urinary frequency or urgency, diarrhea, constipation, nausea, vomiting, headache, fever, cough, or back pain.

On examination, blood pressure was 176/88, heart rate was 78, temperature was 97.7F, and respiratory rate was 16. There was mild tenderness in the left lower abdominal quadrant and anterior left thigh and patient was unable to flex her left hip. Sensations in the lower extremities were intact.

On admission, hemoglobin was 11.2g/dl, INR was 7.6, prothrombin time (PT) was 91, partial thromboplastin time (PTT) was 88, white blood cell (WBC) 8,200/ml, platelets 197,000/ml, and liver and kidney markers were normal. X-ray of left femoral and left knee showed no fracture. CT pelvis showed left iliopsoas fluid collection (hematoma) measuring approximately 6.4 x 6.4 x 16.4 cm that extends into the distal iliopsoas muscle near its insertion on the lesser trochanter.

Warfarin was discontinued, patient was given Vitamin K and admitted to the floor with consult to the surgeon. Surgeon advised conservative medical management. The next day, patient INR was 3.4, PT 40.2, PTT 54.7 and hemoglobin was 10.3. Patient was started on physical therapy and discharged to a skilled nursing facility.

3. Discussion

The risk of major bleeding in patients on warfarin is dependent on the degree of anticoagulation, patient's concurrent use of other medications such as NSAIDs, patient's characteristics such as age and presence of other comorbidities such as kidney disease. [1,3]

Table 1. A Review of 12 Case Reports on Iliopsoas Hematoma in Patients on Warfarin

Study	Presentation	Fall/ trauma/injury	Age	Sex	INR	Reason for anticoagulation	Side	Treatment
Ekiz T, 2015	Groin pain and restriction in the left hip movements.	No	68	M	12.7	Post cardiac valve replacement.	Left	Fresh frozen plasma and intravenous vitamin K were administered
Conti S, et al., 2017	Abdominal pain after a minor trauma	Yes	81	F	6.6	Atrial fibrillation and a previous cardioembolic stroke event	Left	Administered 3-factor prothrombin complex concentrates (PCC)
Kheiri B, et al., 2018	Worsening spontaneous right thigh pain, radiating to his right lower leg with loss of ambulation secondary to his increasing weakness	No	91	M	5.31	Atrial fibrillation	Right	Administered Vitamin K. Underwent an unsuccessful CT-guided hematoma drainage.
Kong WK, et al., 2012	Severe pain and numbness in the groin that radiated to the left anterior thigh and weakness of the left lower extremity	No	55	M	1.6	History of a thrombosis in the left femoral artery and left external iliac artery	Left	Discontinued Warfarin. Percutaneous catheter insertion was performed under ultrasonographic guidance for aspiration and drainage of the hematoma. However, only a small amount of the hematoma was drained and then surgical evacuation of the hematoma via the left retroperitoneal approach was performed.
Watanabe Y, et al., 2019	Dysstasia with worsening bilateral thigh pain from falling onto his back a week earlier	Yes	70	M	6.42	Atrial fibrillation	Bilateral	Administered menatetrenone (vitamin K compound) and four-factor prothrombin complex concentrates (4FPCC).
Kaya BB, et al., 2017	Thigh pain and loss of sensation on the lateral aspect of his thigh		77	M	2.67	Post aortic valve replacement	Left	Warfarin stopped.
Fernandes C, et al., 2015	Low back pain irradiating to the anterior portion of the right thigh.	No	42	F	2.1	Extensive cerebral venous thrombosis	Right	Continued the anticoagulation with warfarin (with the same target INR interval of 2-3), under strict clinical vigilance and INR monitoring. The patient was also kept on bed rest.
Sharma D, et al., 2013	Pain in the right iliac fossa, groin and the front of the thigh.	No	87	M	2.4	Deep venous thrombosis	Right	Warfarin stopped. Beriplex (a pooled virally inactivated prothrombin complex concentrate) and Vitamin K IV were given.
Ozkan OF, et al., 2012	Lower quadrant abdominal pain and paresis in the left leg.		74	F	5.4	Pulmonary embolism	Left	Warfarin stopped. Fresh frozen plasma and intravenous vitamin K were administered.
Spengos K, et al., 2012	Difficulties when walking and climbing stairs because of proximal left leg weakness. Lower abdominal pain	Fall from bicycle	85	M	2.4	Atrial fibrillation	Left	Stopped warfarin.
Zago G, et al., 2010	Pain, pretibial paresthesia and paresis of left leg for three days.	Fall and minor lower back trauma	68	M	>5	Post aortic valve replacement	Left	Warfarin stopped and intravenous vitamin K and fresh plasma were administered.
Lee KS, et al., 2015	Escalating dull pain to the left flank and lower back	No	65	M	5.25	Post mechanical aortic valve replacement	Left	Fresh frozen plasma was administered. Emergent lumbar arterial angiogram was performed for hemostasis. There was active bleeding on the left 5th lumbar arterial branch. Transarterial embolization (TAE) was successfully performed

The author searched Pubmed and Google scholar for case reports of iliopsoas hematoma in patients on warfarin and found 12 case reports. Analysis of the 12 case reports on iliopsoas hematoma in patients on warfarin shows that the mean age of reported cases was 72 years (Table 1). [2,4-14] Patients present with lower abdominal, flank, back, groin or thigh pain (100%), lower extremity weakness and/or difficulty in walking (50%) and loss of or abnormal sensation in the lower extremity (17%).

Majority of the bleeding occurred spontaneously without any reported trauma (67%) and majority of the patients with hematoma had supratherapeutic INR level (58%). Though bleeding risk generally correlate with the intensity of anticoagulation, bleeding has also been reported in patients with therapeutic or sub-therapeutic INR. [6,8,9,10,12,15] Sixty seven percent of the cases had a left sided iliopsoas hematoma, 25% had right sided hematoma and 8% had bilateral hematoma. For most of the patients (92%), warfarin was discontinued, apart from a patient within therapeutic INR with extensive cerebral venous thrombosis where anticoagulation with warfarin (with the same target INR interval of 2–3) was continued under strict clinical and INR monitoring. [9] In one of the cases (17%), the hematoma was surgically evacuated after an unsuccessful ultrasonographic guided aspiration of the hematoma while another patient underwent an unsuccessful CT-guided hematoma drainage. [5,6] In three of the cases with therapeutic or subtherapeutic INR, warfarin was held without reversal of the warfarin effect with vitamin K or prothrombin complex concentrate. [6,8,12] In all the cases with supratherapeutic INR, warfarin effect was reversed with Vitamin K and/or prothrombin complex concentrates or fresh frozen plasma.

According to the American Society of Hematology (ASH) 2018 guidelines patient with serious or life-threatening bleeding requires a reversal of the warfarin, while those with minor bleeding or supratherapeutic warfarin level without bleeding may be best managed by holding the warfarin without reversal of the warfarin effect. [16] For patients on warfarin with life-threatening bleeding with an elevated INR, the ASH guideline suggests cessation of warfarin and administration of IV vitamin K and 4-factor prothrombin complex concentrates (PCCs). [16]

For patients who survive an episode of major bleed and require long-term or indefinite anticoagulation because of moderate to high risk for recurrent venous thromboembolism, they may resume anticoagulation therapy within 90 days if they are not at high risk for recurrent bleeding. [16]

4. Conclusion

Iliopsoas hematoma is a rare complication in patients on warfarin and usually presents as lower abdominal, groin or thigh pain even in patient with therapeutic INR. This case report and review of literature highlights the need for emergency physicians to consider Iliopsoas

hematoma in elderly patients on warfarin who present with lower abdominal or groin pain, even in patients with therapeutic or sub-therapeutic INR.

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