Iliopsoas Hematoma with Compressive Femoral Neuropathy Complicating Warfarin Prophylaxis: A Case Report

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Patients who have received mechanical heart valves usually have to take lifelong prophylactic anticoagulants. Inattention to treatment with low dose prophylactic anticoagulants may result in over-anticoagulation and increase the risk of bleeding. A 61-year-old Asian man who had a mechanical heart valve and was receiving warfarin presented in the emergency room with non-traumatic spontaneous left lower back pain and left leg weakness on walking for one day. Abdominal computed tomography imaging and neurological examination confirmed a left iliopectineal hematoma with compressive femoral neuropathy. A coagulation profile showed prolonged prothrombin and partial thrombin times. Prophylactic anticoagulation was immediately suspended and the patient was treated with an oral pain reliever and intravenous Vitamin K injections. The patient's condition improved after treatment and the coagulation profile was within the normal limits on follow-up. The patient was discharged and periodic assessment of the coagulation profile was arranged. Our case study investigated factors contributing to an increased international normalized ratio (INR) in relation to bleeding in patients on long term, low dose warfarin prophylaxis. We concluded that periodic INR monitoring is still mandatory to prevent bleeding caused by over-anticoagulation in patients on long term, low-dose warfarin prophylaxis.

Key words: hematoma, warfarin, anticoagulation, femoral nerve neuropathy, vitamin K antagonist

Introduction

Warfarin is the most common prophylactic anticoagulant used after placement of a mechanical heart valve. Its anticoagulation effects can be monitored via plasma level on a coagulation profile [i.e. prothrombin time (PT), partial thrombin time (PTT), and international normalized ratio (INR)]. Neglect of INR monitoring in long term, low dose anticoagulation treatment can often lead to serious bleeding in patients. Caution should be taken when applying warfarin therapy.

Case Report

A 61-year-old Asian man came to the emergency room with non-traumatic spontaneous left lower back pain and left lower limb weakness for one day. The condition was aggravated by prolonged walking, sitting, and full knee extension. It was alleviated by resting in a supine position. The patient was a hepatitis C carrier and percutaneous transluminal coronary angioplasty had been performed 16 years previously for coronary artery disease. He also had a history of rheumatic heart disease complicated by mitral valve...
regurgitation and had placement of a mechanical valve 13 years previously. The patient had been taking oral Orfaim (warfarin) 2.5 mg daily since the valve surgery. Other oral medications taken daily were Zosaahy FC (losartan 50 mg and hydrochlorothiazide 12.5 mg), Secorin (oxazolam) 20 mg, Adarone (amiodarone) 100 mg, Procanin (liver hydrolysate 140 mg, cystience hydrochloride 50 mg, choline bitartrate 200 mg, cyanocobalamin 3 µg, and inositol 50 mg), Herbesser (diltiazem hydrochloride) 60 mg, Synpid (fenofibrate) 200 mg before sleep, mosapride (mosapride citrate dehydrate or pantoprazole) 5 mg, Lansoprazole 30 mg, and dimethicone (dimethylpolysiloxane) 120 mg. The patient reported no history of diabetes, alcohol consumption, smoking, or herbal intake.

Physical examination showed the patient was in mild distress and stable hemodynamic status. Assessment of the extremities showed ecchymosis on multiple extremities and increased numbness over the medial aspect of the left thigh on walking. A neurological lumbar examination revealed lumbar sciatica at 40 degrees, weakness of the left extensor hallucis longus, and sensory deficit below the 5th lumbar level on the left side during a straight leg raise test of the left leg. Abdominal examination showed no abdominal auscultation bruits, abdominal distention, localized or rebounding pain, Cullen’s sign, Grey Turner’s sign, or bilateral flank knocking pain. An electrocardiogram showed no major differences compared with previous cardiac studies. Abdominal radiography revealed a blunted shadow over the left iliopsoas muscle and no evidence of spine displacement (Fig. 1). Abdominal computed tomography (CT) showed a left iliopsoas hematoma with femoral nerve compression in the iliac fossa (Fig. 2).

A complete blood count, basic chemistry panel, cardiac enzymes, and urine examination showed no abnormalities. A coagulation panel revealed an increased PT of 86.3 sec. and PTT of 72.4 sec. (control references were 10.5 sec. and PTT 30 sec., respectively), and an INR of 7.74. Hematoma formation complicated by prophylactic warfarin

Fig. 1 Left psoas muscle blunting on abdominal radiography
over-anticoagulation was diagnosed. The patient was treated conservatively with a pain relief agent (tramadol hydrochloride 100 mg every 8 hours intravenously) for left lumbar sciatica. Vitamin K1 injection (phytonadione) 10 mg once daily intravenously was given and the anticoagulant was suspended. A sequential coagulation survey revealed a significant decrease in the PT to 20.7 sec. and the PTT to 50.9 sec. The patient had a good recovery and was discharged on the 4th hospital day in acceptable health with mild left leg pain.

**Discussion**

Low dose warfarin over-anticoagulation is frequency detected accidentally. Its effect may lead to clinical manifestations such as ecchymosis in the extremities, retroperitoneal hematoma with abdominal distension\(^1\), and intracranial hemorrhage with altered consciousness\(^2,8\). Pharmaceutical agents such as H2-receptor antagonists\(^4\), oral cholestyramin\(^5\), and antibiotics\(^6,7\) are commonly associated with warfarin overanticoagulation. Herbal products, alcohol, fever, and diarrhea may also led to over-anticoagulation\(^8\). There is a synergistic risk of severe bleeding with combined usage of anti-platelet agents such as aspirin and clopidogrel\(^9-11\).

Studies have evaluated and established an acceptable therapeutic index dosage for initial post-operative warfarin prophylaxis in the outpatient department. Harper et al recommended an initial dose of 5 mg\(^12\) and Monkman et al suggested an initial dose of 10 mg per day for treatment of deep vein thrombosis\(^13\). Ageno et al. analyzed initial daily doses of 2.5 mg for patients with renal compromise and 5 mg for those with normal renal function after placement of a mechanical heart valve\(^14\). All these studies emphasized the initial dose and overlooked subject variations between study models. No analysis has been done to determine a reasonable dosage for warfarin prophylaxis long-term after placement of a mechanical heart valve.

The ideal INR range for patients with
mechanical heart valves is 2.5-3.5\(^{(15)}\). In one study, the risk of bleeding increased with an INR > 4.5\(^{(16)}\). When bleeding occurs with over-anticoagulation, the INR can be corrected by immediate suspension of warfarin and fresh frozen plasma transfusion\(^{(17)}\). Other recommendations for treatment of over-anticoagulation include transfusion of factor VII\(^{(18)}\) and administration of vitamin K\(^{(19,20)}\). Oral vitamin K usually normalizes the INR within 24 hours\(^{(21)}\). Intravenous vitamin K can correct the INR immediately\(^{(22)}\) but overdoses can occur easily, resulting in mechanical heart valve thrombosis with dysfunction.

When active bleeding occurs angiographic embolization may be necessary\(^{(23)}\). An early fasciotomy may be indicated when blood clots lead to compartment syndrome\(^{(24)}\). An operation is needed to remove blood clots in patients with femoral nerve paralysis or those suspected of having femoral nerve entrapment syndrome, even if there is no compartment syndrome\(^{(25)}\).

No studies have established a proven dose of warfarin which can prevent bleeding in patients on long term prophylaxis after mechanical heart valve surgery. Mechanical heart valve dysfunction is possible with long term warfarin usage despite use of suggested dosages for initial post-operative prophylaxis. Therefore, periodic INR monitoring remains mandatory even with low dose warfarin prophylaxis. Drug interactions, infection, and other associated factors should be considered in the treatment of warfarin over-anticoagulation.

References

10. Doggrell SA. Warfarin and aspirin give more benefit than aspirin alone but also more bleeding after myocardial infarction. Expert Opin Pharmacother 2003;4:587-90.


髂肌血腫合併壓迫性股神經病變

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接受心臓金屬瓣膜置換的患者往往需要終身服用抗凝劑，然而服用抗凝劑便可能有過渡抗凝及出血的可能性。病例報告：一位61歲的亞洲男性因非創傷性左側腰痛及左下肢無力被送至急診室，他過去因接受心臓金屬瓣膜置換長期服用香豆素。經電腦斷層及神經學檢查後發現病患罹患髂肌血腫合併壓迫性神經病變，凝血功能檢查發現凝血酶原時間及部分凝血藜原時間延長，我們回顧文獻並分析長期服用低劑量香豆素造成國際標準化比值(INR)延長及出血傾向的因素。結果：影響INR的因素很多，即使是服用長期低劑量香豆素仍須定期監測INR以避免香豆素造成過渡抗凝。

關鍵詞：血腫，華法林，抗凝血劑，股神經病變，維他命K結抗劑

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