

# Spontaneous Calf Haematoma: Case Report

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### SUMMARY

Spontaneous calf haematoma is a rare condition and few case reports have been published in the English literature. Common conditions like deep vein thrombosis and traumatic gastrocnemius muscle tear need to be considered when a patient presents with unilateral calf swelling and tenderness. Ultrasound and Magnetic Resonance Imaging are essential for confirmation of diagnosis. The purpose of this paper is to report on a rare case of spontaneous calf hematoma and its diagnosis and management.

### KEY WORDS:

*Calf; hematoma; spontaneous; tenderness*

### INTRODUCTION

Haematoma is a collection of blood that is confined to an organ, tissue or space, and is caused by a break in a blood vessel. Haematoma usually occurs after a traumatic event, surgery or from a pre-existing vascular defect. However, the findings of unilateral calf swelling and a palpable soft tissue mass on physical examination in a patient without a history of trauma can be challenging. The differential diagnosis includes deep vein thrombosis (DVT), haematoma, ruptured popliteal cyst, infection, sarcoma, intramuscular haemangioma and lymphoedema. Accurate diagnosis is essential as the treatment and prognosis of each differ greatly.

### CASE REPORT

A 61-year-old man presented to the hospital with one day history of left calf pain and swelling which occurred spontaneously. He had no previous history of bleeding tendency and was not on antiplatelets and anticoagulants. He was hypertensive and hyperlipidemic and had a history of sero-positive rheumatoid arthritis. He was on tab Amlodipine 10mg and Lipitor 10mg daily. The last flare of the arthritis was two months ago, affecting the shoulders and wrist joints and he was prescribed tab Methotrexate 12.5 mg weekly and supplemented with tab Folate 5 mg daily. His C-reactive protein and erythrocyte sedimentation rate (ESR) had returned to near normal.

His pulse rate was 90/minute and blood pressure was 160/90 mmHg. The left calf was noted to be swollen and tender, especially over the medial aspect. The foot pulses were palpable and were of normal volume. General examination was non-remarkable.

His prothrombin time was 12.8 seconds, partial thromboplastin time was 36.3 seconds, international normalize ration (INR) was 0.95 and bleeding time was 4 minutes. His D-dimer value was 200ng/ml. Hemoglobin was 14.9 G/dL, total white count was  $12.2 \times 10^3/\mu\text{L}$  and platelet count was  $323 \times 10^3/\mu\text{L}$ . The ESR was 44mm/H. The liver function test and renal profile were normal. Ultrasound showed a well localized swelling within the posterior compartment of the left calf. This was confirmed by magnetic resonance imaging (MRI) with gadolinium contrast. The radiologist reported it as a large hematoma on the medial aspect of the left calf. It was located within the muscular bundle of the medial head of gastrocnemius muscle, compressing and displacing the underlying muscle bundle but no extension into muscle fibers. No obvious vascular abnormality or malformation were noted in the MRI of left lower limb.

The patient underwent evacuation of the haematoma under general anaesthesia. Longitudinal incision was made over the point of maximal swelling and organised clots were noted beneath the deep fascia, indenting the gastrocnemius muscle. The clots were evacuated completely and no bleeders were seen. The wound was closed with subcutaneous and subcuticular sutures over a vacuum suction drainage. The patient was discharged well after three days and on review two months later, the wound has healed well.

### DISCUSSION

The clinical presentation of unilateral painful calf swelling and palpable soft tissue mass is relatively common. The differential diagnosis includes DVT, haematoma, gastrocnemius muscle tear, ruptured popliteal cyst, infection, intra-muscular haemangioma and lymphoedema. Gastrocnemius muscle rupture is associated with calcium deficiencies, phosphorus deficiency, vitamin D deficiency, prolonged incumbency with resulting myositis and struggling to rise occasionally precipitate rupture of the muscle. There were very few case reports of spontaneous calf haematoma being reported<sup>1-3</sup>. Interestingly, most of the patients were male, in the middle or elderly age group and no cause of the bleed could be elucidated.

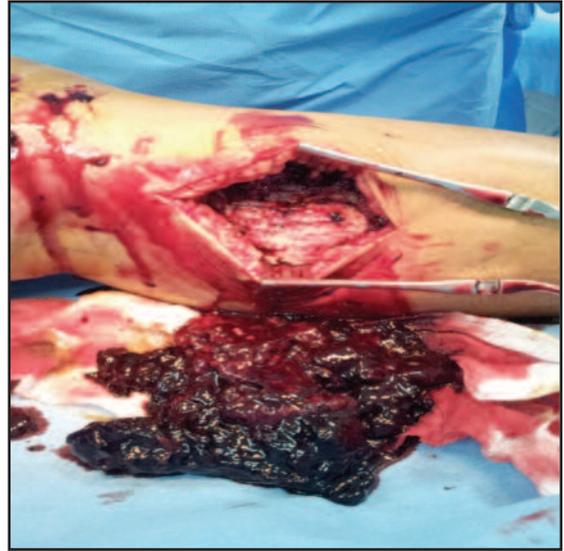
Diagnosis is based on a thorough history and physical examination. History includes the onset and duration of symptoms, trauma, previous DVT, bleeding disorders, malignancy, presence of prior swelling or birth marks, use of anticoagulants or antiplatelets, and past history of lower limb surgery. A careful physical examination is important but often not specific<sup>3</sup>.

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**Fig. 1 :** T2-weighted MRI showing a well circumscribed swelling of the left calf; suggestive of a calf haematoma



**Fig. 2 :** Intra operative finding of organised clots just beneath the deep fascia, indenting the gastrocnemius muscle .

In this patient, the initial diagnosis was calf DVT and duplex scan showed a well localized swelling within the posterior compartment of the left calf. MRI was performed to exclude common pathologies like muscle tear, haemangioma and ruptured Baker's cyst<sup>4,5</sup>. MRI showed a well circumscribed calf haematoma indenting the calf muscle.

Commonly, tender calf swelling with no antecedent history of trauma is sometimes managed empirically as DVT; especially in the night or over the weekends where ultrasound facility may not be readily available. D-Dimer might have returned positive for this patient secondary to the blood clot. Had anticoagulant be administered before the ultrasound scan, the condition might have worsened. MRI is essential as a tool to determine the cause of the bleed and might show up potentially serious conditions like a sarcoma that warrants biopsy and resection.

In this patient, a correct diagnosis of calf hematoma was made and the clot was evacuated under general anaesthesia. Intra-operative finding of a huge blood clot beneath the deep fascia was unusual. Most spontaneous calf haematomas reported were in the gastrocnemius or soleus muscles. It might represent minor tears that were not readily noticed.

The patient has a history of seropositive rheumatoid arthritis and was on methotrexate. There is a remote possibility that this patient could have small vessel arteritis and these vessels could have ruptured while on immunosuppression. However, no source of bleed could be identified in this patient intraoperatively and on MRI.

This case illustrates the importance of imaging before empirical management of spontaneous tender calf swelling. MRI is an essential diagnostic modality to identify the site, extent and source of bleed. While the condition is rare, surgical evacuation yields good results.

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