

## **1. Introduction and Who Guideline applies to**

This guideline applies to all ultrasound practitioners in Imaging at UHL.

## **2. Guideline Standards and Procedures**

Soft tissue masses of the trunk and extremity are common and most are benign (British sarcoma Group, BSG), with sarcoma accounting for 1% of adult cancers. Differentiation between soft tissue sarcoma and haematoma can be challenging as appearances can be variable, have similar imaging characteristics on ultrasound and both can increase in size slowly. Haematomas can also form within a sinister lesion, especially following trauma. Haematomas can occur from trauma, surgery, aneurysm or spontaneously if there is a clotting dysfunction. In patients who are not on anticoagulant medication, haematomas should not occur without significant trauma. To aid diagnosis a thorough clinical history should be taken. Studies agree that when ultrasound diagnosis is uncertain, the lesion should be followed up, but there are no specific published guidelines for management and timeframes for these cases. In the absence of national guidance, University Hospitals of Leicester (UHL) propose the following guide for the management of suspected haematomas.

The appearances of a haematoma can vary greatly. They are often hypoechoic in the acute phase but later progress to being heterogeneous. When chronic and organising, they will usually reduce in size and become more echogenic.

Clinical history should be obtained and documented in the ultrasound report and should include:

- History of trauma including sports injuries, direct impact or puncture
- Duration
- Anti-coagulation medication
- Oncology history
- Is it stable, increasing or decreasing in size?
- Is it painful?
- Is it deep or superficial?
- Is there visible bruising or any skin changes/dyscolouration?

Images and report should include:

- Size in 3 planes
- Location and relationship to the fascia (panoramic imaging is helpful)
- Characteristics solid/cystic/mixed
- Doppler flow present/absent?

As the appearance of a haematoma can vary greatly, if there are any suspicious or concerning features, the patient should be referred for further review. Differential diagnoses include:

- Myositis ossificans -Unresolved haematoma can develop in to Myositis Ossificans. Myositis ossificans is a reactive process within the muscle secondary to traumatic muscular hematomas characterized by a proliferation of fibroblasts, cartilage, and bone. It is a painful, tender and enlarging mass

- Morel – Lavelle lesions

If there are **any concerning features** or **indeterminate features** then a sarcoma 2ww MDT referral should be made. MDT will decide on further management/imaging.

Suspicious features include:

- Solid lesions
- Lesions with invasive margins
- Large mass with rapid growth
- Recurrence of a mass adjacent to previous sarcoma resection
- Lesions larger than 7 cm, please see separate advice for lipomatous lesions available at: Document management system
- Disorganised, branching internal vascularity
- Lesion characteristics that do not fit with the clinical picture
- Lesion with no history of injury or minor trauma in patients not on anticoagulation medication

### **No concerning features at Initial Ultrasound**

- Arrange a 6-8 week repeat ultrasound scan, irrespective of clinical history of medication or trauma (MSK secretaries/admin to create event and appoint)
- If fully resolved at 6-8 weeks – no follow up imaging is required
- If no concerning features at 6-8 weeks but stable in size - arrange a routine repeat MSK ultrasound in 12-14 weeks (MSK secretaries/admin to create event and appoint)
- If there is interval growth at 6-8 weeks - Sarcoma MDT

**Please use the following report phrase for suspected haematomas with no concerning features using Short report code Haem 1**

*Ultrasound has identified a lesion which has the appearances of a haematoma. A follow up scan will be arranged at an interval of 6-8 weeks and an appointment will be sent to the patient. The patient has been advised to contact their referring doctor/GP if they experience increased swelling or pain prior to their follow up ultrasound appointment so that a 2WW referral to the sarcoma clinic can be made. The referring clinician should make this referral.*

### **3 month Ultrasound**

Lesions with no concerning features at 3 months which are reducing in size/resolving will require clinical review with the referring clinician at 12months from the initial ultrasound scan (Please add report phrase below)

**Please use the Following Report Phrase for no Concerning Features at 3 months and Reducing in Size**

*Ultrasound has identified a lesion which has the appearances of a resolving haematoma at 3 month follow up imaging, which has not completely resolved. Clinical review is advised at 12 months whereby a repeat ultrasound may be considered if the lesion has not resolved. The patient has been advised to contact their referring doctor/GP if they experience increased swelling or pain for a clinical review. If red flags at clinical review please refer to sarcoma 2ww.*

If at the 3 month ultrasound the lesion is stable in size, growing or showing concerning features then refer to sarcoma 2ww.

### **3. Education and Training**

Dissemination to all MSK trained practitioners. No specific training requirements.

### **4. Monitoring Compliance**

<b>What will be measured to monitor compliance</b>	<b>How will compliance be monitored</b>	<b>Monitoring Lead</b>	<b>Frequency</b>	<b>Reporting arrangements</b>
Referrals to MDT	Clinical audit	Consultant radiographer	On-going	MSK Realm

### **5. Supporting References (maximum of 3)**

British Sarcoma Group. Guidance for the management of soft tissue masses in the trunk and extremity. Available at: [British Sarcoma Group Sarcoma Guidelines](#)

### **6. Key Words**

Haematoma

Sarcoma

Soft-tissues

<b>CONTACT AND REVIEW DETAILS</b>	
<b>Guideline Lead (Name and Title)</b> Catharine Berry, Consultant MSK Radiographer	<b>Executive Lead</b> Imran Khan, Consultant MSK Radiologist
<b>Details of Changes made during review:</b> N/A	