The ROYAL MARSDEN
Community Services

Clinical Guidelines for the Management of Musculoskeletal Red Flags in the Community

17.8.17

SUMMARY

Red flags are prognostic signs and symptoms suggestive of serious pathology. The following is a guide to help in the decision making process. It is not intended as a rule book and there is no substitute for clinical judgement. It is accepted that the identification of red flags is not an exact science, and a "gut feeling" is of also of value to a complex reasoning process. This guideline has been developed to aid the recognition of red flags in patients presenting with musculoskeletal symptoms and guide onward referral**.**

This development of these guidelines was led by Andrew Bennett Consultant MSK Physiotherapist from Royal Marsden Community Services; engaging input from a number of clinicians/consultants from Epsom and St Helier NHS Trust, The Royal Marsden Hospital Foundation Trust and Sutton CCG. SWL would like to thank these organisations for sharing their work.

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SCOPE This guideline is primarily designed to inform clinical reasoning for primary care practitioners. It may also be of use for any other clinician involved in the assessment of patients with musculoskeletal symptoms . It is not mandatory or exhaustive and it is ultimately the responsibility of the clinician to make appropriate collaborative decisions with the patient, carers and/or guardian.

1. Cauda equina syndrome (CES)

1.1 A rare and very disabling condition which can result in permanently impaired bladder, bowel and sexual dysfunction causing misery to affected patients that is reflected in the cost of managing disability and consequent litigation which results from it

1.2 All patients presenting to a primary care practitioner with low back pain and associated leg symptoms SHOULD be given the Cauda Equina Syndrome (CES) warning card (Appendix 1) to guide what to do in the unlikely instance that such symptoms develop.

1.3 Established CES and associated symptoms maybe avoidable though timely diagnosis and management

1.4 In a patient presenting with acute (de novo or as an a exacerbation of preexisting symptoms) back pain and/or leg pain with a suggestion of saddle sensory disturbance or altered bladder-bowel or erectile function, CES should be suspected

1.5 This includes any of the following symptoms in isolation or combination

- Loss of feeling/pins and needles between the inner thighs or genitals
- Numbness in or around the back passage or buttocks
- Altered feeling when using toilet paper to wipe
- Increasing difficulty in urinating
- Increasing difficulty controlling flow or stopping urinating
- Loss of sensation when passing urine
- Leaking urine and a recent need to use pads
- Not knowing when bladder is full or empty
- Inability to stop bowel movement or leaking
- Change in ability to achieve and erection or ejaculate
- Loss of genital sensation during intercourse

1.6 Most patients will not have critical compression of the cauda equina. However given the absence of reliably predictive symptoms and signs, there should be a low threshold for emergency specialist review with a view to urgent MRI scan

1.7 If cauda equina compression is confirmed it is most likely that decompressive surgery will be undertaken at the earliest opportunity

1.8 If suspected , immediate/same day referral to local accident and emergency services with a letter to be taken by the patient briefly outlining the patients presentation, the nature of the concerning symptoms, their

duration, progress of deterioration and where possible/appropriate objective neurological findings (anal tone, myotomal strength, dermatomal sensation and nature of reflexes)

2. Major spinal related neurological deficit

2.1 New onset/progressively worsening less than grade 4 weakness according to the Oxford scale (table 1), associated with 1 or more myotome could be indicative of a significant radiculopathy

2.2 If symptoms have been present for days/weeks, are progressively worsening and another causative pathology not suspected, consider urgent referral to Local Spinal Orthopaedic or Neurosurgical services

Table 1: Oxford muscle strength grading scale

0/5	No contraction
1/5	Visible/palpable muscle contraction but no movement
2/5	Movement with effect of gravity eliminated
3/5	Movement against gravity only
4/5	Movement against gravity with some resistance
5/5	Movement against gravity and full resistance

3. Spinal cord neurology (myelopathy)

3.1 Diffuse weakness of arms and hand, clumsiness and unsteady/wobbly gait with positive objective neurological signs could be indicative of myelopathy

3.2 Referral to local Spinal Orthopaedic or Neurosurgical Services should be dependent on the duration of signs and symptoms

3.2.1 Rapid and progressive onset over weeks, urgent referral to local Spinal Orthopaedic or Neurosurgical Service

3.2.2 Slow insidious onset, routine referral to local Spinal Neurosurgical or Orthopaedic Service, but inform the patient of the need to make contact to change this if they feel there has been a rapid progression of signs and symptoms

3.3 All remaining cases please refer to MSK SPT services

4. Vertebral Osteomyelitis / Discitis

4.1 Spinal infections are rare and can either develop acutely over days or weeks, or gradually over weeks or months.

4.2 Can result from haematogenous seeding as a result of infection elsewhere, spread from nearby soft tissue or direct inoculation following invasive procedure

4.3 Symptoms include

- Persistent non-mechanical pain
- Mechanical symptoms non-responsive to appropriate management over a reasonable time scale
- Unwell/fever/night sweats (Fever can be absent, frequency reported to range from 30-65%)
- Primary source of infection
- Personal / family history of Tuberculosis
- Immunosuppression with new onset pain (IVDU, HIV Chemotherapy, Steroid use)
- Elevated white cell count (increased leukocyte count or high percentage of neutrophils does not have a high sensitivity in the diagnosis of osteomyelitis)
- Raised inflammatory markers ESR / CRP (high sensitivity in 98100% cases)

4.4 If suspected immediate/same day referral to local Accident and Emergency service

5. <u>Cancer</u>

5.1 Early recognition and treatment leads to improved outcomes. This guideline considers 4 subgroups of patients

Group 1 - No history of cancer, red flags suggestive of malignancy which warrant further investigation
Group 2 - History of cancer, suspect metastatic disease
Group 3 - History of cancer, suspect malignant spinal cord compression (MSCC)
Group 4 - History of cancer, with low suspicion of metastatic disease

5.2 Group 1. No history of cancer, red flags suggestive of malignancy.

5.2.1 The greater the number of red flag symptoms, the greater the probability of underlying serious pathology.

5.2.2 Symptoms include

- Age >60 with new onset severe pain
- Persistent non-mechanical pain
- Mechanical symptoms non-responsive to appropriate management over a reasonable time scale

- Recent unexplained weight loss
- Unwell/fever/night sweats

5.2.3 If neoplastic disease is suspected urgent referral to appropriate service under the 2 week rule

5.3 Group 2 - History of cancer, suspected metastatic disease

5.3.1 Past history of cancer is the most statistically significant red flag symptom in the literature. Other symptoms are commonly seen in the presence of pathology

5.3.2 If a patient presents with history of cancer and one of more of the symptoms listed in 5.2.2 urgent referral to appropriate service under the two week rule

5.3.3 If the patient is under the care of the Royal Marsden, the Royal Marsden McMillan Hotline may be used to access information on oncological history and as a route to expedite patient follow up where required. The hotline is staffed by senior oncology nurses and provides specialist advice and support to Royal Marsden patients, their carers, and hospital and community-based doctors and nurses caring for Royal Marsden patients. You can call 24 hours a day, seven days a week on 020 8915 6899. Alternatively a written referral can be made back to their oncology consultant

5.4 Group 3 - History of cancer, suspect malignant spinal cord compression (MSCC)

5.4.1 MSCC is compression of the spinal cord or cauda equina by direct pressure or vertebral collapse, as a result of metastatic spread or direct extension of malignancy, which may cause neurological deficit or paralysis. MSCC is one of the most serious and devastating complications of malignancy: however with prompt diagnosis and treatment many patients can retain good levels of function and independence. Unnecessary delays in diagnosis and treatment impact on a patients quality of life and prognosis

5.4.2 Symptoms include suspected metastatic disease and one or more of the following.

- Cauda equina symptoms (see section 1.5)
- New onset/progressively worsening less than grade 4 weakness according to the Oxford scale (table 1), associated with one or more myotome

- New onset/progressively worsening loss of sensation one or more dermatome
- Altered reflex at one of more level

5.4.3 If further discussion required to inform decision making, contact the Lead Metastatic Spinal Cord Compression (MSCC) coordinator at St Georges Hospital. The contact number is 020 8725 4554 or phone St. George's Switchboard on 020 8672 1255 and bleep 6027. Out of hours advice is provided by the neurosurgical registrar on call who can be contacted on bleep 7242. Alternatively for a patient known to the Royal Marsden, oncology advice can be provided by the McMillan Hotline on 020 8915 6899.

5.4.4 If MSCC is suspected, urgent investigation is required within 24 hours therefore immediate/same day referral to local accident and emergency services.

5.4.5 Suspected/confirmed MSCC patients will be referred into the South West London Malignant Spinal Cord Compression Service, under the umbrella of St Georges University Hospitals NHS Foundation Trust who provide the neurosurgical service, in collaboration with the Royal Marsden.

5.5 Group 4 - History of cancer, with low suspicion of metastatic disease

5.5.1 Given the high prevalence of cancer, rising positive treatment outcomes and the high prevalence of MSK dysfunction in an aging more sedentary population it is common for patients to develop benign MSK related symptoms

5.5.2 If a patient presents with a history of cancer, and symptoms indicative of a benign MSK dysfunction, and no other red flags identified in 5.2.2 refer to MSK SPT.

6. <u>Acute trauma</u>

6.1 In presence of a new onset trauma immediate/same day referral to local Accident and Emergency services if the following are suspected

- A fracture
- see table 2 for guidance re thoracic/lumber spine, foot, ankle, knee and wrist,
- A **high risk,** or a **low risk patient with inability to turn their head 45 degrees to left and right** should be suspected to have a cervical

spine fracture informed by the Canadian C spine rule. Both scenarios require ambulance transfer with full in line spinal immobilisation

- See table 3 for Canadian C Spine rule
- Dislocation
- Damage to nerves or vascular compromise
- Tendon rupture
- Wound penetrating the joint
- Known bleeding disorder
- Signs Septic arthritis
- Haemarthrosis (very painful and tender joint swelling immediately after injury)
- A large intramuscular haematoma
- A complete tear of more than half of a muscle belly

6.2 All other patients should be referred to MSK SPT service.

Table 2. Signs/symptoms indicative of fracture of the thoracic/lumber spine, foot, ankle, knee and wrist

Spinal trauma	If the patient presents with one or more of the following • age 60 years or older and reported new onset pain in the thoracic or lumbosacral spine • dangerous mechanism of injury (fall from a height of greater than 3 metres, axial load to the head or base of the spine – for example falls landing on feet or buttocks, high-speed motor vehicle collision, rollover motor accident, lap belt restraint only, ejection from a motor vehicle, accident involving motorised recreational vehicles, bicycle collision, horse riding accidents) • pre-existing axial spondylarthopathy/ankylosing spondylitis, or known or at risk of osteoporosis – for example steroid use • abnormal neurological symptoms (paraesthesia or weakness or numbness) on examination: • abnormal neurological signs (motor or sensory deficit) new deformity or bony midline tenderness (on palpation) • bony midline tenderness (on percussion) • midline or spinal pain (on coughing) • on mobilisation (sit, stand, step, assess walking): pain or abnormal neurological symptoms
Foot trauma	Pain in the mid foot and one or more of the following • Inability to bear weight (walk 4 steps) immediately after injury or when examined • Bone tenderness at the base of the 5th metatarsal Bone tenderness of the navicular bone
Ankle trauma	If there is pain in the malleolar zone and one or more of the following • Inability to bear weight (walk 4 steps) immediately after injury or when examined • Bone tenderness along the distal 6 cm of the posterior edge of the fibula or tip of the lateral malleolus • Bone tenderness along the distal 6cm of the posterior edge of the tibia or tip of the medial malleolus

Knee trauma	If there is one or more of the following • Inability to bear weight (walk 4 steps) immediately after injury or when examined • Person age 55 or more • Tenderness at head of fibula • Isolated tenderness of the patella • Inability to flex knee beyond 90 degrees
Wrist trauma	Pain or tenderness over the scaphoid bone (tenderness at the base of the anatomical snuff box)

Table 3 Canadian C spine rule

Neck trauma	Assess whether the person is at high, low or no risk for cervical spine injury using the Canadian C-spine rule as follows: The person is at **high risk** if they have at least one of the following high-risk factors: • age 65 years or older • dangerous mechanism of injury (fall from a height of greater than 1 metre or 5 steps, axial load to the head – for example diving, high-speed motor vehicle collision, rollover motor accident, ejection from a motor vehicle, accident involving motorised recreational vehicles, bicycle collision, horse riding accidents) • paraesthesia in the upper or lower limbs The person is at **low risk** if they have at least one of the following low-risk factors: • involved in a minor rear-end motor vehicle collision • comfortable in a sitting position • ambulatory at any time since the injury • no midline cervical spine tenderness • delayed onset of neck pain The person **remains at low risk** if they are: • Unable to actively rotate their neck 45 degrees to the left and right (the range of the neck can only be assessed safely if the person is at low risk and there are no high-risk factors). The person has **no risk** if they: • have one of the above low-risk factors **and** • are able to actively rotate their neck 45 degrees to the left and right.

7. Suspected spinal insufficiency/wedge fracture

7.1 If suspected new onset spinal insufficiency/wedge fracture request myeloma screen, if positive referral to local Haematology service under two week rule

7.2 If myeloma screen negative:

7.2.1 Seek advice from local Rheumatology services for review of osteoporosis management (online advice or OP referral)

7.2.2 If persistent pain and percussive tenderness persisting for greater than 6 weeks urgent referral to local orthopaedic or neurosurgical service

8. Septic Arthritis, Gout and inflammatory arthritis

8.1 In a patient who is systemically unwell, with or without temperature, has a new onset non-traumatic hot swollen joint with painful multi-directional restriction in movement, septic arthritis should be suspected until proven otherwise

8.2 If septic arthritis is suspected immediate/same day referral to local accident and emergency services

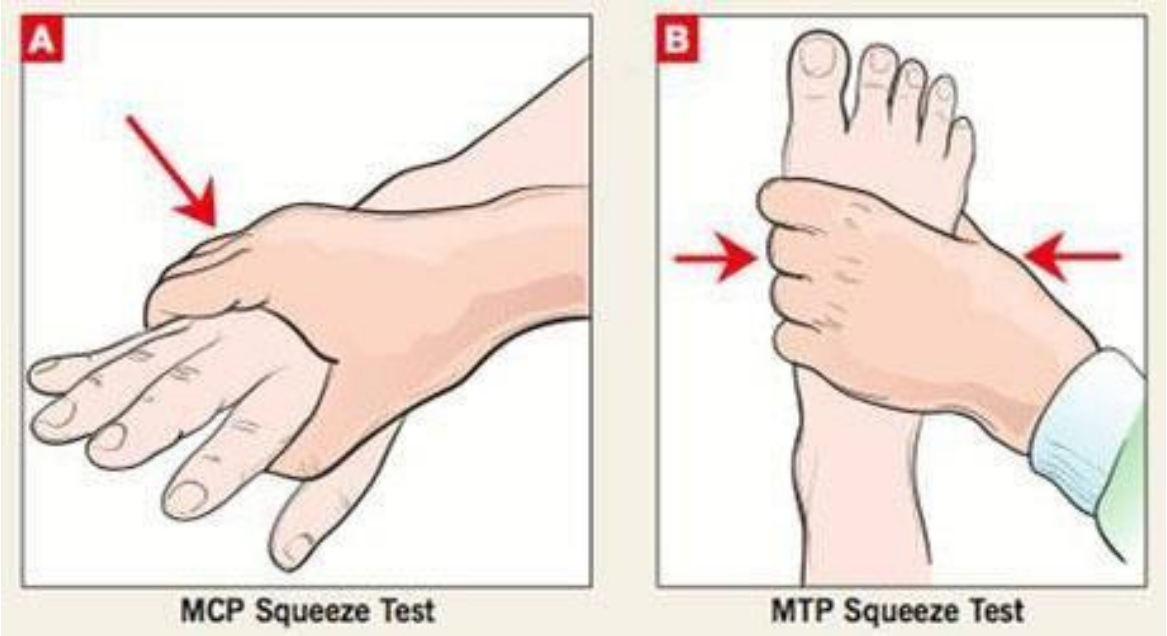
8.3 New onset, non-traumatic joint pain and swelling in one or more joints where septic arthritis or Gout is not suspected could be indicative of acute inflammatory arthritis

8.4 Symmetrical pain and swelling of the small joints of the hands and feet associated with stiffness persisting for more the 30 minutes on rising and a positive metacarpal and/or metatarsal squeeze test is strongly indicative of rheumatoid arthritis (Figure 1)

8.5 Prompt management of both acute inflammatory and rheumatoid arthritis results in a more successful outcome in the long term

8.6 If acute inflammatory arthritis suspected urgent referral to local Rheumatology services even if blood tests show a normal acute phase response or a negative rheumatoid factor

Figure 1 Metacarpal/Metatarsal squeeze test



http://www.arthritisresearchuk.org/arthritis-information/inflammatory-arthritispathway/step-one.aspx

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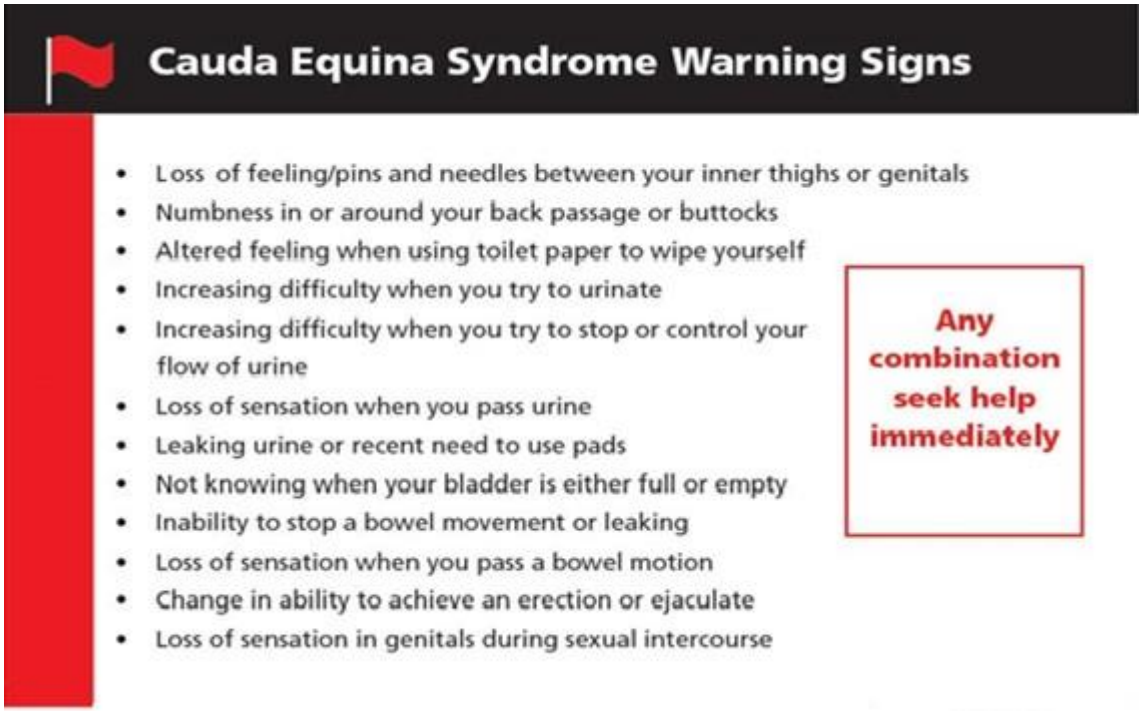
Appendix 1 CES warning card



Appendix 2.
Red Flags summary

Appendix 2 Red flags summary.xlsx

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