1. **Referral**
   After full neurological assessment with a clear clinical intention to treat, clinical diagnosis of cord compression requires urgent investigation and treatment.

2. **Imaging choice**
   a) MRI whole spine: Gold standard imaging for diagnosis MSCC, the least invasive and most comfortable test.
      
      Note MRI contraindicated in the following:
      
      * **Absolute** – cardiac pacemaker, intracranial aneurysm clips, cochlear implant, intraorbital metallic foreign bodies
      
      * **Relative** - metal fragments or shrapnel injuries anywhere in the body, recent major surgery, metal implants e.g. joint replacements, Harrington rods or any type of implant, artificial heart valves, claustrophobia
      
      Discuss relative contraindications with radiographer / radiologist
   b) CT: this is more sensitive than conventional radiographs and an option for a patient ineligible for MRI. CT whole spine with thin slices and saggital reconstruction should be requested.
   c) Conventional radiographs: not indicated
   d) Myelography: not indicated

3. **Where should scan be performed?**
   Request urgent MRI of the WHOLE SPINE to be done at the patients local hospital on the same day or within 24 hours of clinical suspicion and ensure timely reporting.
   MRI scan OOH (Out of hours):
a) Patients to be scanned at their local DGH – (Salford Royal Radiology department does not accept imaging requests from anywhere outside Salford). See Radiology provision document within this guidelines section.
b) If neurology is stable then appropriate to scan on Monday – (i.e. patient remains at their DGH). If neurology is changing and scan cannot be done locally, then referring medical consultant at referring DGH to discuss with RMO at SRFT (via switchboard 789 7373 bleep 3693). If Emergency Assessment Unit (EAU) at SRFT accept patient, they will request MR scan
c) A bed should be kept at referring DGH so that patient can be transferred back for on-going social/medical treatment (this should be clarified by EAU Consultant when accepting referral)

4. Scan timeframe and communicating findings
   a) During the working week, it is recommended that each department keeps a daily slot allocated for suspected cord compression on the MRI lists. Preferably in the morning.
   b) MRI scans should be performed within 24 hours of referral during the working week
   c) The scan report should be available in writing (in patients notes or on PACS) as soon as possible
   d) Where an emergency MR is requested to assess for MSCC, the referring clinician should read the verified report as a matter of urgency and act upon the findings. If an unexpected finding of MSCC, or ‘high risk of MSCC’ is found in a CT or MRI scan by reporting radiologist, this should be communicated urgently to the referring clinician in person.

5. MRI technique
   a) Patient preparation: Patient to be kept on flat bed rest and log rolled during the journey to and from the MRI department and during transfers between the trolley and MRI couch
   b) Coil: Phased array spine coil, coverage CI down to the lower sacrum
   c) Sequences:
      T1W sagittal
      STIR sagittal
      Transaxial imaging through focal lesions (either T1W or T2W)
   d) Intravenous Gadolinium administration:
      Not routinely applicable for cord compression. If the spinal cord / cauda equina appear thickened on the protocol sequences, administer Gadolinium to detect meningeal disease.

6. CT Protocol
   a) Spiral or multislice
   b) Thin section coverage of the whole spine will entail a high radiation dose and the examination may have to be tailored somewhat to the clinical areas of abnormality
c) Intravenous contrast should be administered  
d) Scan parameters depends on equipment available  
e) Reformats in the sagittal plane required.

7. **Staging CT Chest/Abdomen and Pelvis**  
   a) Indicated for patients with no known primary  
   b) Indicated for patients with a good Tokuhashi score being considered for surgery if they do not have an up to date scan within the last 3 months

For more information and protocols on management of MSCC see:  
[http://www.christie.nhs.uk/MSCC](http://www.christie.nhs.uk/MSCC)

**CONSULTATION, APPROVAL & RATIFICATION PROCESS**
*All documents must be involved in a consultation process either locally within a department or division or throughout the trust at relevant board/committee meetings before being submitted for approval.*

**VERSION CONTROL SHEET**

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