1. **Scope of the guideline**

This guidance has been produced to support the radiological aspects of diagnosis and referral of patients with suspected metastatic spinal cord compression (MSCC).

2. **Guideline background**

2.1 MSCC is a well recognised complication of cancer and often presents as an emergency. Early diagnosis and treatment is essential to prevent irreversible neurological damage.

2.2 NICE Clinical Guideline 75 (2008) ‘Diagnosis and management of adults at risk of and with Metastatic Spinal Cord Compression’, makes a number of recommendations which are included in this document.

2.3 NICE Clinical Pathway for Metastatic Cord Compression (January 2012) provides an overview of the pathway for diagnosis and treatment of MSCC.

2.4 The National Peer Review Programme Manual for Cancer Services Acute Oncology - including Metastatic Cord Compression Measures (April 2011) sets out requirements for audit of timeliness of investigation, treatment and outcomes of treatment for MSCC.

2.5 Guidelines for the referral of patients with suspected MSCC have been issued by the Pan Birmingham Cancer Network Bony Metastases Site Specific Group available at [http://www.birminghamcancer.nhs.uk/staff/clinical-guidelines/bone-cancer](http://www.birminghamcancer.nhs.uk/staff/clinical-guidelines/bone-cancer)

**Guideline Statements**

3. **Clinical presentation**

Patients presenting with suspected spinal cord compression may be classified as either urgent or emergency referrals. The distinction is made based on the basis of the symptoms and signs and subsequent imaging confirmation of the compression of the neural elements within the spine.

3.1 **Urgent referrals**

3.1.1 Patients presenting with the following clinical symptoms and signs of spinal metastatic disease and should be dealt with as **urgent referrals:**

- pain in the middle (thoracic) or upper (cervical) spine
- progressive pain in the lower (lumbar) spine
- severe unremitting lower spinal pain

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- spinal pain aggravated by straining (for example, at stool, or when coughing or sneezing)
- localised spinal tenderness
- nocturnal spinal pain preventing sleep

3.1.2 MRI of the whole spine should be performed in patients with suspected MSCC, unless there is a specific contraindication. This should be done in time to allow definitive treatment to be planned within 1 week of the suspected diagnosis in the case of spinal pain suggestive of spinal metastases, and occasionally sooner if there is a pressing clinical need.

3.2 Emergency referrals

3.2.1 Patients presenting with clinical symptoms suggesting cord compression should be dealt with as emergency referrals.

This includes patients with any of the clinical symptoms outlined in 3.1 plus neurological symptoms including:

- radicular pain
- any limb weakness
- difficulty walking (including falls)
- sensory loss or bladder or bowel dysfunction

3.2.2 Please note: neurological signs of spinal cord or cauda equina compression develop late in the evolution of spinal cord compression.

3.2.3 These patients should have access to MRI 24/7. MRI of the whole spine should be performed unless there is a specific contraindication. This should be done in time to allow definitive treatment to be planned within 24 hours of presentation in the case of spinal pain suggestive of spinal metastases and neurological symptoms or signs suggestive of MSCC, and occasionally sooner if there is a pressing clinical need for emergency surgery.

4. Imaging

4.1 MRI is the imaging modality of choice to demonstrate the extent of soft tissue and bone involvement, and the extent and degree of neurological compromise.

4.2 CT is more appropriate to define the potential for structural spinal failure and is often used to define nursing instructions and in planning radiotherapy, vertebroplasty and surgery.

4.3 A targeted CT scan with three-plane reconstruction should be considered to assess spinal stability and to plan vertebroplasty, kyphoplasty or spinal surgery in patients with MSCC.

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4.4 When MRI is contraindicated other imaging such as CT or myelography may assist with the diagnosis.

5. All patients

5.1 Radiology departments should configure lists to allow examination of patients with suspected MSCC at short notice, including out of hours and at weekends.

5.2 MRI should be available 24/7 for those patients presenting with the symptoms outlined in 3.2.1 or when there is an intention to proceed to immediate treatment.

5.3 MRI of the whole spine should be performed in patients with suspected MSCC unless there is a specific contraindication.

5.4 MRI should be done in time to allow definitive treatment to be planned within
   - 1 week of the suspected diagnosis in the case of spinal pain suggestive of spinal metastases
   - 24 hours in the case of spinal pain suggestive of spinal metastases and neurological symptoms or signs suggestive of MSCC, and occasionally sooner if there is a pressing clinical need for emergency surgery

5.5 If MSCC is confirmed the imaging examination should be transferred via the Image Exchange Portal to the centre to which the clinician will refer the patient. The timeframe for this will depend upon clinical need; however there should be the facilities for image transfer 24/7.

5.6 Image transfer via the Image Exchange Portal may require further training of radiographic staff at referring centres to enable transfer of images outside normal office hours. There may be instances where some referring centres send the images by CD Rom or other means.

6. Access to imaging

6.1 All units should be working towards ensuring 24 hour access to MRI to enable emergency access for suspected MSCC.

6.2 Appendix 1 shows a list of Trusts with MRI capability and their opening times as at March 2012.

6.3 If MRI is not available within the required time frame deemed clinically necessary at the referring hospital, the patient with suspected MSCC should be transferred to a unit with 24 hour capability if there is a pressing clinical need for surgery.
Monitoring of the guideline

Implementation of this guidance is subject to the Acute Oncology Measures Peer Review process which commenced nationally in April 2011.

Each hospital hosting an imaging department is required contribute to Network wide audit of the timeliness of investigation of MSCC. This includes:

- recording the date and time of the request for imaging
- recording the date and time of imaging takes place
- recording the type of primary imaging requested and dates it is delivered,
- recording the date the imaging is reported and the date it is transferred using the image exchange portal (or other means)
- recording the number of case referred to other centres from MRI

References


Author

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Approval Signatures

Pan Birmingham Cancer Network Governance Committee Chair
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Signature: [Signature]
Date: July 2012

Pan Birmingham Cancer Network Manager
Name: Karen Metcalf
Signature: [Signature]
Date: July 2012

Network Site Specific Group Clinical Chair
Name: Peter Riley
Signature: [Signature]
Date: July 2012
Appendix 1: Radiology Department Opening Hours

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* 24h on call radiographer