Malignant Spinal Cord Compression (MSCC) South Midlands Cancer Network Guideline

Trust Reference E2/2017

University Hospitals of Leicester NHS
NHS Trust
Northampton General Hospital NHS
NHS Trust
Kettering General Hospital NHS
NHS Foundation Trust

1. Introduction

This guideline has been produced to support the prompt and effective management of patients with metastatic spinal cord compression and is supported by NICE (2008).

Malignant spinal cord compression (MSCC) is a common complication of cancer and is an oncological emergency. MSCC is defined as the compression of the dural sac and its contents (spinal cord/caudaequina) at the level of clinical features. It is most commonly seen with metastatic prostate, breast and lung cancer but can be seen in any tumour type. It may be the initial presentation of a previously undiagnosed tumour and thus can present to a wide variety of specialities within the hospital. Direct compression of the spinal cord results in oedema, venous congestion and demyelination. These effects are potentially reversible. With prolonged compression, secondary vascular injury occurs with irreversible infarction of the cord. If the diagnosis of cord compression is made early and appropriate treatment started then the chances of keeping the patient ambulatory and independent are significantly improved. Left untreated, patients will develop progressive symptoms of pain, paralysis, sensory loss and sphincter dysfunction. The management of MSCC should follow the NICE guidelines November 2008 (www.nice.org.uk).

A flow chart is included at the end of this guideline which summarises the key points.

2. Scope

This guideline applies to all clinical staff within the south midlands cancer centre (UHL, NGH and KGH). Three quarters of patients who develop MSCC will have previously been diagnosed with a cancer and often known to have vertebral metastases. For a quarter of patients, MSCC is the first presentation of a cancer.

3. Recommendations, Standards and Procedural Statements

Symptoms

Back pain: often the earliest symptom, radicular or localised, not a good indicator for level of MSCC.
Leg weakness: including unsteadiness or reduced mobility
Sensory disturbances: either an ascending level of sensory loss or a dermatomal sensory loss seen with an associated nerve root compression.
Autonomic dysfunction: urinary retention and loss of anal tone are both late symptoms and associated with a poor chance of recovery.

Signs

Signs vary dependent on the site of the cord compression. The most common level for compression of the cord is the thoracic vertebrae (two thirds of cases) followed by the lumbosacral and then cervical spine. There may be **bony tenderness** at the level of the lesion. Below the level of the lesion, there may be a **spastic paraparesis with brisk reflexes, increased tone, clonus and up going plantars.**

Spinal sensory levels are usually one to five segments below the anatomic level of cord compression. **Radicular sensory loss or loss of a reflex** is more reliable in determining the level of compression. **Lax anal tone and a palpable, distended bladder** suggest sphincter disturbance. If the lesion lies below the end of the spinal cord (at L1), there may be cauda equina compression, resulting in flaccid paraparesis and saddle anaesthesia. Lesions in the cervical cord may result in a quadriparesis.

Procedure / Process for malignant spinal cord compression	
No.	**Action**
1	**Assessment** Full history (including oncological diagnosis and previous treatment). Enquire about symptoms mentioned above. Current functional level i.e. patient can still walk (with or without help) unable to walk but still has some use of legs patient paralysed Time of onset of symptoms and rate of deterioration. Social history. Full systemic examination including assessment of performance status. Full neurological examination including grade of power in all limbs according to MRC criteria (0-5 appendix 1) and record on the neurological assessment section of the admission documentation (ASIA chart). These findings may give an indication where the level of compression is but there is less than 30% concordance between clinical signs and an anatomical level. Over 20% of patients have more than one level of compression. Review notes for histological diagnosis and any recent imaging that may suggest patient is at risk of cord compression e.g. previous metastases on bone scans.
2	**As soon as a diagnosis of MSCC is suspected the following personnel should be informed**: **MSCC Coordinator;** **UHL** **Acute Oncology Nurse Telephone: 07908178232 MON – FRI 0900 to 1700hrs.** **Out of hours on-call oncology registrar.** **NGH** **On call SpR (Oncology) - Telephone Emergency Assessment Bay (EAB) 01604 634700 Ext. 5851 during working hours (Mon – Fri 09.00 to 17.00hrs). Out of hours contact on call SpR bleep 4623.**

Procedure / Process for malignant spinal cord compression	
	KGH **If known to oncology: Consultant who is responsible for the patient's oncological care or if not available oncology consultant on call based at NGH.** **If not known to oncology, clinical team liaise with the consultant orthopaedic surgeon at KGH and the on call oncology consultant at NGH. The orthopaedic surgeon or oncology consultant will liaise with the orthopaedic spinal surgery consultant on call at UHL if required, whoever has seen the patient and has full details of the case.**
3	**Immediate management** ➢ Immobilisation (complete bed rest and flat) of any patient suspected to have MSCC ➢ Analgesia: according to WHO pain ladder ➢ Start dexamethasone loading dose of 16mg then 8mg BD 8am and 2 pm (unless no histology and lymphoma is a possibility then contact Haematologist immediately for advice) ➢ Start gastric cover with PPI.
4	**<u>Investigations</u>** FBC, U+Es, LFTs, bone profile (including calcium) and clotting, group & save if for surgery. Consider tumour markers as appropriate Is surgery is being considered an up-to-date staging CT within the last month is required. **Urgent MRI of whole spine: needs discussion with emergency radiologist either SPR or consultant. MRI ought to be done and reported within 24hrs of request (NICE guidelines).** Patients may need analgesia prior to MRI. MRI requires that a safety questionnaire is completed with regard metallic implants/ previous eye injuries etc. Ensure that the patient is competent to complete this questionnaire – if not please arrange for a relative to be available on their behalf. Contra indications to MRI: ➢ pacemakers ➢ metal foreign bodies ➢ severe claustrophobia ➢ Check with the MRI department if there is a possible contra-indication. CT imaging is the best alternative if MRI contraindicated. Plain films are only predictive of the site of compression in approximately 25% of patients and only delay the diagnostic pathway. If an MRI is not possible the patient's management should be discussed with the senior oncologist or surgeon responsible for the patient's care. **Consultant radiologist to inform** **Referrer AND MSCC co-ordinator**

Procedure / Process for malignant spinal cord compression	
	UHL Working hours Telephone 07908178232 (out-of-hours) or e-mail acute.oncology.uhl-tr.nhs.uk Out of hours oncology on-call SpR bleep 4324 **NGH** **On call Oncology Specialist Registrar** **Telephone 01604 634700** **KGH** Acute malignant haemato-oncology outreach team via e-mail AONS@kgh.nhs.uk or bleep 844. Oncology specialist registrar advice is sought from NGH as above.
5	**If the diagnosis of MSCC is confirmed:** ➢ Ensure patient is on adequate analgesic as per WHO analgesic ladder. ➢ LIE FLAT and treat as unstable until the spine is cleared as stable by someone with the clinical skills to assess stability using SINS score (Spine instability neoplastic score) Consultant spinal surgeon will advise on stability of the spine and if any support (e.g. collar or brace) is required if not suitable for surgery. ➢ Prophylactic LMWH (unless contra indicated) and TEDS stockings. **UHL Discuss the case with the MSCC co-ordinator or a clinical oncologist who will liaise with a spinal surgeon in order to decide on the most appropriate management of either radiotherapy or surgery followed by radiotherapy (unless clearly not suitable for surgery – see below)** **NGH All patients whether known to an oncologist or unknown malignancy will be assessed by an oncologist at NGH and the on-call spinal surgeon at UHL will be contacted by them to obtain a surgical opinion.** **If not known to oncology the patient must be assessed by the on-call orthopaedic consultant and discussed with the on-call oncology consultant who should contact the on-call spinal surgeon at UHL to obtain a surgical opinion.** **KGH The patient must be assessed by the on-call orthopaedic consultant who should contact the on-call spinal surgeon at UHL to obtain a surgical opinion. Liaison with the patient's own oncologist (if known to oncology) should be made to establish oncology plan. If the patient is unknown to oncology the patient should be discussed with the on-call oncology consultant or registrar at NGH.** For all patients requiring a surgical opinion, the following information must be available; • Tokuhashi score (Appendix 2) • Co morbidities • Previous oncology treatment • Planned oncology treatment • Patient's wishes Chemotherapy may have a role in the management of sensitive malignancies such as

	lymphoma, germ cell tumours, previously untreated small cell carcinoma, Ewing's sarcoma and some paediatric malignancies.
6	**<u>Newly diagnosed prostate cancer patients with MSCC</u>** If a patient is suspected to have a new diagnosis of metastatic prostate cancer based on multiple sclerotic bone metastases and an elevated PSA then immediate hormone therapy is recommended. This should only be started after oncology or urology senior review. Degarelix (Firmagon) is a GnRH antagonist indicated in the treatment of patients with advanced hormone dependent prostate cancer patients. The loading dose is 240mg SC (2 injections) with a monthly dose of 80mg SC. Testosterone suppression occurs immediately with no risk of tumour flare which has previously be seen in older GnRH Analogues. Degarelix **must** be started **before** any surgery for MSCC as it may help to reduce tumour size and risks of bleeding intra-operatively. It should be started as soon as possible in patients having radiotherapy but should not delay the start of treatment.
7	**<u>Indications for surgery</u> – A joint decision MUST be made between a consultant oncologist, Spinal surgery consultant and radiology** **If surgery agreed the patient MUST be transferred to ward 17 LRI at UHL pre-operatively.** Evidence from a randomised controlled trial (Patchell *et al*.) has suggested that in carefully selected patients surgical management of decompression and stabilisation with post-operative radiotherapy is superior to radiotherapy alone both for improvements in mobility, function and survival. Criteria for surgical intervention are: 1. Reasonably fit patient (PS 2 or better), with minimal co morbidity 2. Life expectancy greater than 3 months 3. Direct compression of the spinal cord by bony fragments (unlikely to respond to DXT) 4. An unstable spine 5. Solitary lesion of unknown histology (biopsy and decompression) 6. The level of compression is in an area previously irradiated (it is possible sometimes to retreat with radiotherapy – discuss with consultant) 7. There has been neurological deterioration during the course of radiotherapy 8. Worsening pain despite radiotherapy 9. Patient wishes to be considered for treatment (providing that at least points 1 and 2 are met) Surgery should therefore be considered in *all* patients with MSCC unless: 1. The patient clearly is not fit for surgery or has a prognosis less than 3 months. 2. multiple levels of spinal cord compression 3. The patient has a radiosensitive malignancy i.e. lymphoma, myeloma, small cell lung cancer, seminoma, neuroblastoma, Metastatic Ewing's Sarcoma. (If spinal instability: surgery should be the 1st option). If the patient has cord compression with no motor function for greater than 24 hours

Procedure / Process for malignant spinal cord compression	
	recovery is unlikely with surgery. NICE recommends not operating after 24 hours in these circumstances. **NB** prior to discussion with a spinal surgeon the following information is required; • A Tokuhashi score (appendix 2) • A full neurological assessment documented on an ASIA chart • Recent restaging scan to show extent of disease • Oncology treatment patient has received • Plan for further treatment • Patient's wishes regarding surgery
8	**Radiotherapy** Once a decision for radiotherapy treatment has been made radiotherapy should be planned and started within 24 hours (NICE IOG). This includes at weekends. Therefore the on call consultant clinical oncologist, and emergency radiographer cover need to be informed of pending patients as soon as possible. Patients presenting after 5pm will be planned and treated the following morning. MRI images should be available to the clinical oncologist when planning the patient. **Dosing and fractionation (as per RCR guidelines)** Trials have not found any dose/ fractionation regimen superior to any other. Radiotherapy doses: Good prognosis patient: **30 Gy in 10 fractions** (e.g. newly diagnosed breast cancer with bone mets only and ambulant or <24 hrs immobility) Very poor prognosis patients:**8 Gy in 1 fraction** (poor prognosis or paraplegic) All others (the majority): **20Gy in 5 fractions** Most patients will be treated with 6MV photons and planned in the simulator. If very frail and struggling to lie flat then 300kv can be used with clinical mark up. The volume treated should include the area of compression plus a margin of 1 vertebra above and below. The width of the field should be determined from the MRI (usually 8cm). Patients are treated supine with a single posterior field. The dose should be prescribed at depth using the MRI for guidance. If a patient has complete paraplegia with loss of sphincter control for more than 48 hours, radiotherapy is unlikely to improve neurological function and would be given to palliate pain only and would not be classed as emergency radiotherapy.

Procedure / Process for malignant spinal cord compression	
	Post-operative radiotherapy The one RCT which showed benefit of surgery and RT over RT alone used 30Gy in 10#. This does has never been compared to 20Gy in 5#. However, either regimen is acceptable depending on the patient's performance status and prognosis.
9	**Inpatient Care** Care and rehabilitation require a multidisciplinary approach. Physical, social and psychological needs of the patient need to be met. **Daily ward management of patients with MSCC** Daily assessment of neurology – **if neurological deterioration is detected this must be escalated to managing consultant immediately.** Educate the patient on signs and symptoms of neurological deterioration & provide a copy of the metastatic spinal cord compression leaflet (available from acute oncology team). Blood glucose monitoring and assessment for other steroid related toxicity. Pain assessment & appropriate analgesia DVT assessment Skin and pressure sore assessment. Bowel and urinary assessment – catheter care and laxatives as appropriate. Psychological assessment Early discharge planning.
10	**Progression of neurology despite radiotherapy** Patients whose neurology deteriorates despite radiotherapy should be assessed for salvage surgery as soon as deterioration is detected. Recent radiotherapy should not preclude surgery and the options should be discussed with the patient.
11	**Steroid reduction** Steroids should be tapered (selecting the oncology regime on EPMA) as soon as radiotherapy has started or surgery has taken place. Suggested regimen: reducing to dexamethasone 4mg BD for 4 days then to 4mg OD for 4 days then to 2 mg for 4 days and then stopping. If neurology or pain deteriorates whilst doing this then the dose will need to be increased again.
12	**Other health professionals** Following radiotherapy, physiotherapy and occupational therapy assessment may be started as soon as the patient has started radiotherapy and the spine has been assessed to be stable. Following surgery the rate of mobilisation will be directed by the spinal surgeons. Discharge planning should be started as soon as possible as these patients often require extensive packages of care. Palliative care team may need to be involved if there are difficulties with symptom control or mental health issues.

Procedure / Process for malignant spinal cord compression	
	Patients with cord compression may develop complex psychological problems. They may struggle to cope with loss of mobility, loss of independence and the progression of their cancer. The patient and their family are likely to need support both whilst in hospital and after their discharge. Antidepressants/Psycho-oncology referral should be considered.
13	**<u>Patients not known to have a malignancy presenting with malignant spinal cord compression</u>** In approximately 20% of patients presenting with MSCC this will be their first presentation of cancer. Management can be difficult as it may be unclear who has responsibility for these patients. The NICE guidelines for "unknown primary malignancy" will address the management of these patients but until these guidelines are implemented the following pathway should be followed: From recent audits we know that the majority of patients will have either: lung cancer, prostate cancer, or myeloma. Patients should be admitted under orthopaedic on call team. If MRI highly suspicious for malignancy patients should have screening CXR, FBC, U+Es, LFTS, bone profile, PSA, Myeloma screen (BJP, paraproteins) and if fit enough CT Thorax, abdomen and pelvis. Whilst pathological diagnosis is desirable there will be a group of patients who clearly have wide spread metastatic disease, an obvious primary and who are clearly too unwell for surgery. These patients should be discussed with the clinical oncology consultant on call and usually a decision is made for radiotherapy without histological diagnosis.
14	**Repatriation of patients to NGH or KGH post-surgery** **Patients known to oncology** **NGH Refer to site specific oncologist to liaise with NGH bed manager to arrange transfer from UHL to NGH.** **KGH** If a rehab bed is required contact should be made to operational site management at KGH who will advise and support on repatriation to appropriate rehab bed. If a KGH bed is required, operational site management should be contacted for repatriation support. For patients who require radiotherapy who are known to oncology, refer to NGH as stated above. **Patients who present with MSCC as the first sign of cancer** All patients should be referred to the appropriate MDT at either NGH or KGH **NGH Where histology is known refer site specific oncologist to liaise with NGH bed manager to arrange transfer from UHL to NGH.** **Where histology is unknown refer to the CUP site specific oncologist to liaise**

Procedure / Process for malignant spinal cord compression	
	with NGH bed manager to arrange transfer from UHL to NGH. **KGH** If a rehab bed is required contact should be made to operational site management at KGH who will advise and support on repatriation to appropriate rehab bed. If a KGH bed is required, operational site management should be contacted for repatriation support. For patients who require radiotherapy who are unknown to oncology and have presented with MSCC as the first sign of cancer, refer to NGH as stated above.
15	**There is a designated oncology/Haematology lead for MSCC at each trust** **UHL** Dr Kufre Sampson **NGH** Dr Qurrat Mehmood **KGH** Dr Jagadesh-Gandla

4. Education and Training

E-learning modules on MSCC are available on the Macmillan learnzone and BMJ website.

A short e-learning programme which includes MSCC is available on the acute oncology webpage on in site at UHL.

5. Monitoring and Audit Criteria

Key Performance Indicator	Method of Assessment	Frequency	Lead
MRI within 24 hours of request	Audit	Annual	MSCC co-ordinator
Referral to MSCC co-ordinator within 24 hours of suspected MSCC	Audit	Annual	MSCC co-ordinator
Surgical opinion same day as confirmed MSCC (patients fit for surgery)	Audit	Annual	MSCC co-ordinator
Radiotherapy within 24 hours of confirmed MSCC (if not having surgery)	Audit	Annual	MSCC co-ordinator
Ambulatory status and admission, discharge	Audit	Annual	MSCC co-ordinator
Survival rates after MSCC diagnosis	Audit	Annual	MSCC co-ordinator

6. Legal Liability Guideline Statement

See section 6.4 of the UHL Policy for Policies for details of the Trust Legal Liability statement for Guidance documents

7. Supporting Documents and Key References

NICE Guidelines: Metastatic spinal cord compression: diagnosis and management of patients at risk of or with metastatic spinal cord compression. Nov 2008. www.nice.org.uk

NICE Guidelines: Diagnosis and management of metastatic malignant disease of unknown primary origin. July 2010. www.nice.org.uk

http://pathways.nice.org/pathways/metastatic-spinal-cord-compression
NICE Pathyway last updated on: 04 November 2020.

Royal College of Radiologist (RCR) Radiotherapy Dose Fractionation Guidelines. July 2006. www.rcr.ac.uk

Prasad D, Schiff D. Malignant Spinal-Cord Compression. The Lancet Oncology 2005; 6: 15 - 23

Loblaw DA, Laperriere NJ, Perry, J et al. Systematic Review of the Diagnosis and Management of Malignant Extradural Spinal Cord Compression: The Cancer Care Ontario Practice Guidelines Initiative's Neuro-Oncology Disease Site Group. Journal of Clinical Oncology 2005; 23 (9): 1613-1624

Patchell RA, Tibbs PA, Regine WF, et al. Direct Decompressive Surgical Resection in the Treatment of spinal cord compression caused be metastatic cancer: a randomised trial. The Lancet 2005; 366: 643-648

8. Key Words

MSCC; Spinal cord; Compression; Malignant; Metastatic

CONTACT AND REVIEW DETAILS	
Guideline Lead (Name and Title) Partha Basu, Consultant Orthopaedic Surgeon	**Executive Lead** Medical director
Details of Changes made during review: Referral for spinal surgical opinion and repatriation for patients with malignant spinal cord compression in NGH and KGH.	

Appendix 1 Scoring systems

MRC Criteria

0 = complete paralysis

1 = flicker of contraction

2 = movement if gravity excluded

3 = movement against gravity

4 = moderate power against resistance

5 = normal power

ECOG performance status

SCORE	PERFORMANCE STATUS
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g. light house work, office work
2	Ambulatory and capable of all self-care, but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited self-care, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry out self-care. Totally confined to bed or chair

MODIFIED TOKUHASHI SCORING SYSTEM

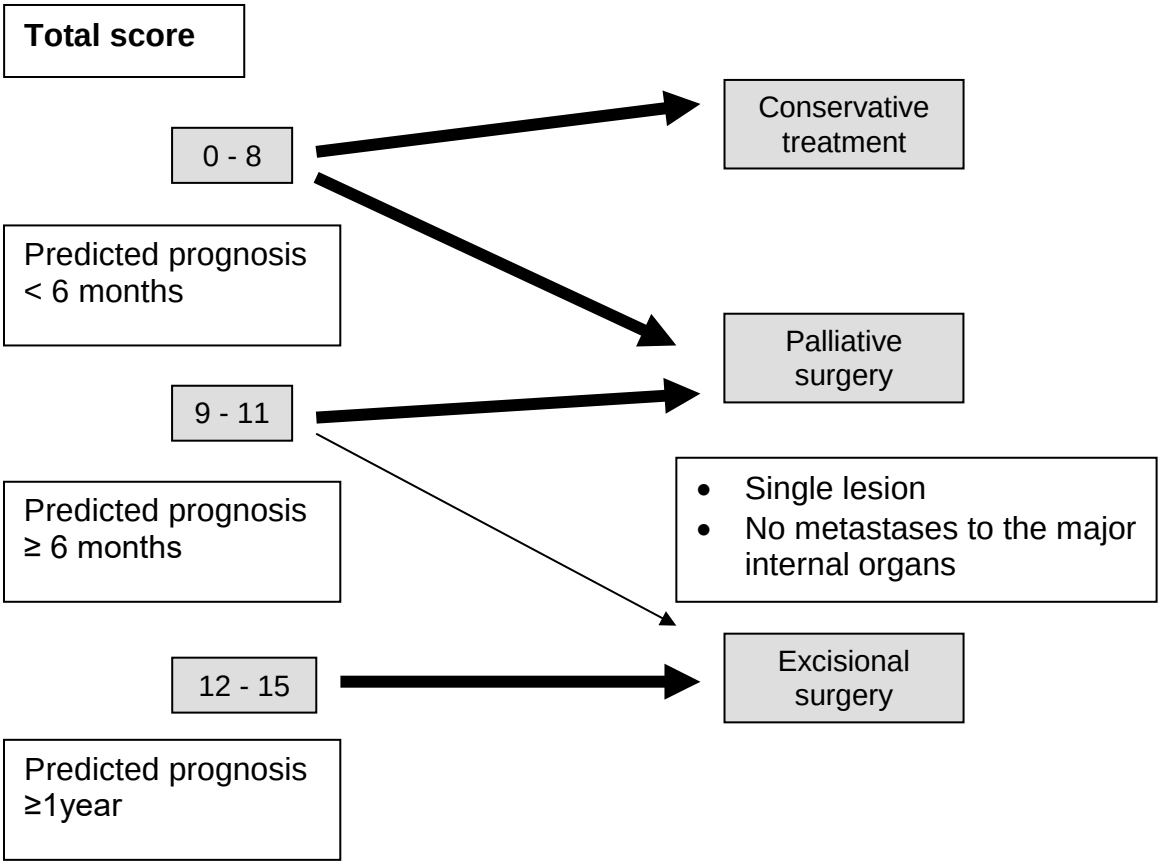
Patient addressograph label	**Date of surgical discussion:** **Name of spinal surgeon discussed with:** **Name & signature of referrer:**

This tool should be used to assess all patients with spinal metastases to identify those who may benefit from an early spinal surgical review before they develop metastatic spinal cord compression (MSCC).

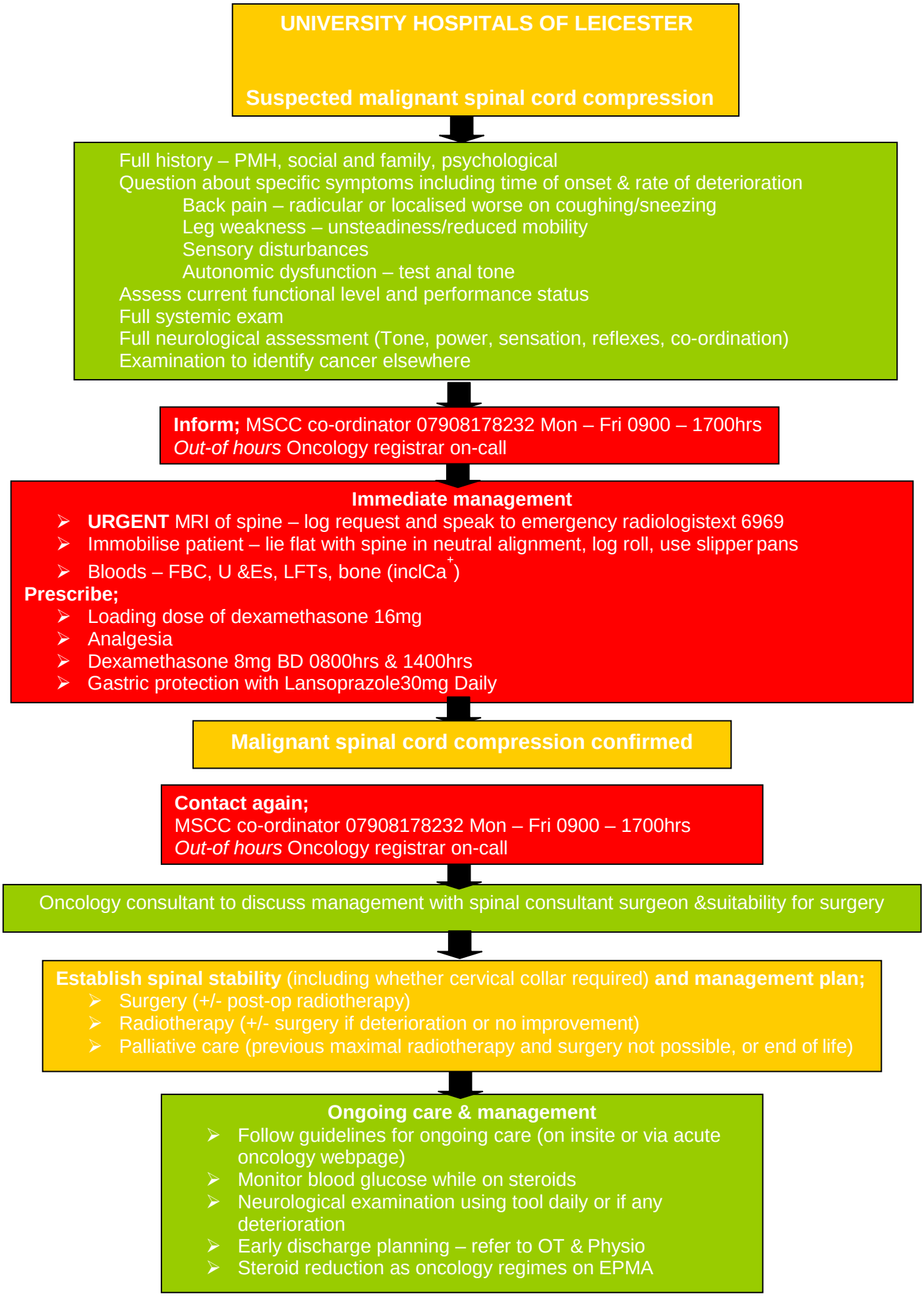
This tool should also be used for all patients presenting with MSCC prior to discussion with a consultant spinal surgeon.

Characteristic	**Score**
General condition (Performance status)	
Poor (PS 10 – 40% ECOG 3-4)	0
Moderate (PS 50 – 70% ECOG 2)	1
Good (PS 80 – 100% ECOG 0 – 1)	2
No. of extraspinal bone metastases foci	
≥ 3	0
2	1
1	2
No. of metastases in the vertebral body	
≥ 3	0
2	1
1	2
Metastases to the major internal organs	
Unremovable	0
Removable	1
No metastases	2
Primary site of cancer	
Lung, Osteosarcoma, stomach, bladder, oesophagus, pancreas	0
Liver, gallbladder, unidentified	1
Others	2
Kidney, uterus	3
Rectum	4
Thyroid, breast, prostate, carcinoid tumour	5
Palsy	
Complete (Frankel A, B)	0
Incomplete (Frankel C,D)	1
None (Frankel E)	2
Criteria of predicted prognosis: Total score (TS) 0 – 8 = < 6 mo; TS 9 – 11 = ≥ 6 mo; TS 12 – 15 = ≥ 1 yr	
Total Score	

Frankel classification	
A	**Complete neurological injury** - no motor or sensory function clinically detected below the level of the lesion.
B	**Preserved sensation only** - no motor function clinically detected below the level of the lesion; sensory function remains below the level of the lesion but may include only partial function (sacral sparing qualifies as preserved sensation).
C	**Preserved motor non-functional** - some motor function observed below the level of the lesion, but is of no practical use to the patient.
D	**Preserved motor function** - useful motor function below the level of the lesion; patient can move lower limbs and walk with or without aid, but does not have a normal gait or strength in all motor groups.
E	**Normal motor** - No clinically detected abnormality in motor or sensory function with normal sphincter function - abnormal reflexes and subjective sensory abnormalities may be present



Outcome of surgical discussion


UNIVERSITY HOSPITALS OF LEICESTER
Suspected malignant spinal cord compression
Full history – PMH, social and family, psychological
Question about specific symptoms including time of onset & rate of deterioration
Back pain – radicular or localised worse on coughing/sneezing
Leg weakness – unsteadiness/reduced mobility
Sensory disturbances
Autonomic dysfunction – test anal tone
Assess current functional level and performance status
Full systemic exam
Full neurological assessment (Tone, power, sensation, reflexes, co-ordination)
Examination to identify cancer elsewhere
Inform; MSCC co-ordinator 07908178232 Mon – Fri 0900 – 1700hrs
Out-of hours Oncology registrar on-call
Immediate management
URGENT MRI of spine – log request and speak to emergency radiologistext 6969
Immobilise patient – lie flat with spine in neutral alignment, log roll, use slipper pans
Bloods – FBC, U &Es, LFTs, bone (inclCa+)
Prescribe;
Loading dose of dexamethasone 16mg
Analgesia
Dexamethasone 8mg BD 0800hrs & 1400hrs
Gastric protection with Lansoprazole30mg Daily
Malignant spinal cord compression confirmed
Contact again;
MSCC co-ordinator 07908178232 Mon – Fri 0900 – 1700hrs
Out-of hours Oncology registrar on-call
Oncology consultant to discuss management with spinal consultant surgeon &suitability for surgery
Establish spinal stability (including whether cervical collar required) and management plan;
Surgery (+/- post-op radiotherapy)
Radiotherapy (+/- surgery if deterioration or no improvement)
Palliative care (previous maximal radiotherapy and surgery not possible, or end of life)
Ongoing care & management
Follow guidelines for ongoing care (on insite or via acute oncology webpage)
Monitor blood glucose while on steroids
Neurological examination using tool daily or if any deterioration
Early discharge planning – refer to OT & Physio
Steroid reduction as oncology regimes on EPMA

NORTHAMPTON GENERAL HOSPITAL

Suspected malignant spinal cord compression

Full history – PMH, social and family, psychological
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Oncology consultant to discuss management with spinal consultant surgeon & suitability for surgery

Establish spinal stability (including whether cervical collar required) **and management plan;**

- Surgery (+/- post-op radiotherapy)
- Radiotherapy (+/- surgery if deterioration or no improvement)
- Palliative care (previous maximal radiotherapy and surgery not possible, or end of life)

Ongoing care & management

- Follow guidelines for ongoing care
- Monitor blood glucose while on steroids
- Neurological examination using tool daily or if any deterioration
- Early discharge planning – refer to OT & Physio
- Steroid reduction once treatment started

KETTERING GENERA\L HOSPITAL

Suspected malignant spinal cord compression

Full history – PMH, social and family, psychological
Question about specific symptoms including time of onset & rate of deterioration
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- Autonomic dysfunction – test anal tone

Assess current functional level and performance status
Full systemic exam
Full neurological assessment (Tone, power, sensation, reflexes, co-ordination)
Examination to identify cancer elsewhere

Inform; MSCC co-ordinator Acute malignant haemato-oncology outreach team via e-mail AONS@kgh.nhs.uk or bleep 844. Oncology specialist registrar advice is sought from NGH

Immediate management

- **URGENT** MRI of spine – log request and speak to emergency radiologistext 6969
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Oncology consultant or orthopaedic consultant to discuss management with spinal consultant surgeon & suitability for surgery

Establish spinal stability (including whether cervical collar required) **and management plan;**

- Surgery (+/- post-op radiotherapy)
- Radiotherapy (+/- surgery if deterioration or no improvement)
- Palliative care (previous maximal radiotherapy and surgery not possible, or end of life)

Ongoing care & management

- Follow guidelines for ongoing care
- Monitor blood glucose while on steroids
- Neurological examination using tool daily or if any deterioration
- Early discharge planning – refer to OT & Physio
- Steroid reduction once treatment started