Homerton Healthcare NHS Foundation Trust

Suspected Cauda Equina Syndrome

Division	CCS; EMRS
Department	Locomotor
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1. Purpose / Aims / Background

The purpose of this document is to outline the standard operating procedure for the management of patients suspected of having cauda equina syndrome in primary, community and secondary care. This is to support implementation of the new Getting It Right First Time (GIRFT) national cauda equina pathway published in February 2023:

https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/10/National-Suspected-Cauda-Equina-Pathway-UPDATED-V2-October-2023.pdf

https://girft-interactivepathways.org.uk/cauda-equina-1/

2. Inclusion criteria

This document relates to management of suspected cauda equina syndrome in primary, community and secondary care.

3. **Exclusion criteria**

This document does not include surgical management or post-operative care aspects of the GIRFT pathway as this is not applicable to our service.

4. **Process**

It is important to note that cauda equina syndrome (CES) does not have a set clinical pattern; no single symptom or combination of symptoms has good diagnostic accuracy. Additionally, negative physical tests do not rule out CES if positive subjective symptoms are present.

History taking:

A detailed subjective history is crucial to minimise the risk of missing early identification of patients at risk of developing CES.

An emergency referral is warranted for a patient presenting with leg pain and/or back pain with a suggestion of recent onset (within 2 weeks), new or worsening of any of the following symptoms:

• altered bladder function e.g. difficulty initiating micturition or impaired sensation of urinary flow
• altered perianal, perineal or genital sensation S2-S5 dermatomes – the area may be small or as big as a horse's saddle (subjectively reported or objectively tested)
• severe or progressive neurological deficit of both legs, such as major motor weakness with knee extension, ankle eversion or foot dorsiflexion e.g. foot drop (≤ 3/5 power on the Oxford grading scale)
• bowel dysfunction which may include fecal incontinence, inability to control the bowel, inability to feel when the bowel is full with consequent overflow
• sexual dysfunction e.g. inability to achieve erection or to ejaculate, loss of vaginal sensation, inability to orgasm

Physical examination:

-Myotomes: assess and grade power from levels L1/2 to S2
-Dermatomes: from L1/2 to S1/2
-Reflexes: knee & ankle
-Digital rectal examination (DRE): it is not a requirement for clinicians (physiotherapists / nurses / FCPs / GPs) to perform a DRE if working in primary / community care
-**S2–S5 saddle sensation assessment**: saddle sensation should be tested, with the reason documented if not e.g. lack of chaperone. If it is not possible, patients should be asked to self-test.

CES > 2/52 & stable // bilateral radicular leg pain or deteriorating unilateral leg pain:

Acquisition / urgency of referral for imaging at discretion of clinician (GIRFT, 2023).

Recommended to follow pathway for posterior lumbar decompression / discectomy: https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/01/Posterior-Lumbar-Decompression-Discectomy-pathway.drawio-2.html

The decision to refer on versus watch and wait, with safety netting, will depend on the clinician's level of concern.
An MRI scan is advocated if the outcome is likely to change management of the patient with case discussed at the monthly spinal MDM when necessary.

There is no benchmark as to how soon urgent MRI referrals should be performed. Radiology will try to accommodate these scans as soon as possible.

MRI if pacemaker/ICD: Referrals for MRI if a patient has a pacemaker/ICD need to be made to a doctor to the Royal London Hospital.

Locomotor: patients should be referred to the spinal specialist team by attaching the clinic letter to the **complex spine email address** bartshealth.complexspine@nhs.net. Clearly state that the patient is being referred as they have a pacemaker etc and need an MRI which cannot be offered locally.

Primary care: refer to the spinal team via e-RS
Highlight the referral as urgent and of high importance as applicable.

Urgent outpatient MRI scan confirms CES: radiology should refer patients to the Emergency Department and highlight the report to the referring clinician.

Referral to the Emergency Department (ED):

-It must be documented by the primary/community care clinician if the patient has declined to attend the ED. Every effort must be made to ensure that patients are made aware of the possible consequences of not attending.

-The ED consultant at Homerton hospital should be contacted by telephone on 0208 510 7057 or bleep #601 with a clear verbal handover given (email supporting clinic letter to huh-tr.HUH.AE.Consultants@nhs.net). It is acknowledged that CES is a time sensitive condition. If an attempt to speak to an ED consultant is unsuccessful the patient should be referred with a supporting clinic letter. Any attempt to speak to the ED Consultant that is not successful should be documented.

-Face-to-face consultation: patient provided with both the MACP safety netting card (if available in their language) & a clinic letter to present at ED
-Virtual consultation: patient sent a copy of the clinic letter to present at ED & MACP safety netting card via Accurx if permission granted to use this platform and patient has smartphone which supports downloading of documents.

An emergency referral for suspected CES should document the following:

• time and date of assessment • patient history including signs and symptoms of CES including duration, frequency and progression • details of neurological examination (details of perianal sensation check can be a self-test)

-The clinician who refers to the ED should take responsibility for monitoring the patient. They should be contacted by the referring clinician or handed over to another clinician (GP/FCP if in primary care) if the referring clinician is unavailable later that day or first thing in the morning on the following day (if referred in the afternoon).

-If a patient has “walked out” of the ED prior to awaiting clinical assessment/investigations this should be clearly documented by the ED team and patient contacted by the initial referrer i.e. primary or community care clinician within working hours on the same day/following day.

Urgent referral to locomotor ESP service:

Referral should document the following:
• flag referral as urgent
• sudden onset bilateral radicular pain or unilateral radicular leg pain that has progressed to bilateral without CES symptoms or onset of CES symptoms > 2 weeks which are now static
• signs and symptoms of bilateral sciatica including duration, frequency and progression
• details of assessment of patient
• time and date of assessment(s)
• neurological examination findings
• perianal sensation should be recorded (can be a self-test if no chaperone available or patient does not consent to this examination)

A referral for spinal imaging may be arranged in primary care at the discretion of the GP/FCP rather than referring to the locomotor ESP service. The responsibility for reviewing the imaging results with any action needed will be the responsibility of the referrer (GP/FCP).

Investigations in the Emergency Department:

Bladder scan
A bladder scan is a useful adjunct in the assessment of a patient with suspected CES. Bladder scans should NOT be used in isolation or as a discriminator in deciding to request an MRI or undertake emergency surgery. 60% of patients who underwent emergency decompressive surgery for CES had a PVR of <200ml (Woodfield et al, 2023).
If a patient is unable to void catheterise the patient and document if sensate and perform a catheter tug.
If a patient can void, carefully document the following:
• pre-void volume • post-void residual volume (PVR)
If PVR >200ml in a patient with suspected CES, then CES is 20 times more likely.
If PVR >600ml catheterise and document if sensate and catheter tug (this avoids damage to the bladder – bladder distension injury)

MRI imaging – the GIRFT guideline states that patients should be referred to the nearest ED where emergency MRI provision is available.
This is a critical diagnostic investigation in the management of patients with suspected CES. An emergency MRI for suspected CES should be undertaken as soon as possible and within four hours of request to radiology. The new guideline states that local provision of 24/7 MRI must be in place by June 2024.

If out-of-hours or where necessary, liaise with the Royal London Hospital where 24/7 MRI provision is available. The MRI request should be discussed and agreed with the radiologist at the RLH (ext 457090). The ED consultant at the RLH should be informed (ext 45722).

Keep the patient nil by mouth if requesting an emergency scan in case emergency surgery is required.

Metastatic spinal cord/cauda equina compression

Contact the MSCC coordinator at the Royal London Hospital via switch 020 7377 7000 or 07957724979 (ask for oncology on-call)
Decision to refer for imaging should be a consultant-to-consultant discussion in consideration of the risk versus benefit.

MRI safety checks, protocols, reporting and provision:

-Where a patient has a contraindication or relative contraindication to MRI e.g. an MR potentially unsafe or conditional implant this should be discussed among the relevant consultants. Homerton radiology cannot support such scans but it may be offered at the Royal London Hospital.
Homerton cannot currently MR patients with pacemakers (even if deemed MR safe) or programmable shunts due to the mandatory post procedure specialist checks and these patients would need to be discussed with RLH for imaging at Barts or RLH
-If a patient is pregnant this should be discussed among the relevant consultants, in consideration of the risk versus benefit.

-**MRI protocol:** a sagittal T2 weighted sequence is the single MRI sequence needed to screen for cauda equina (CE) compression, however ideally sagittal T1 and axial T2 weighted images should be performed in all cases if possible. If CE compression is identified, axial T2 weighted and sagittal T1 sequences should always be acquired. If no CE compression is identified a single T2 sagittal sequence covering the cervical and thoracic spine should be considered.

MRI units should have shorter sequences CES MRI protocol for patients unable to lie still for a standard scan.

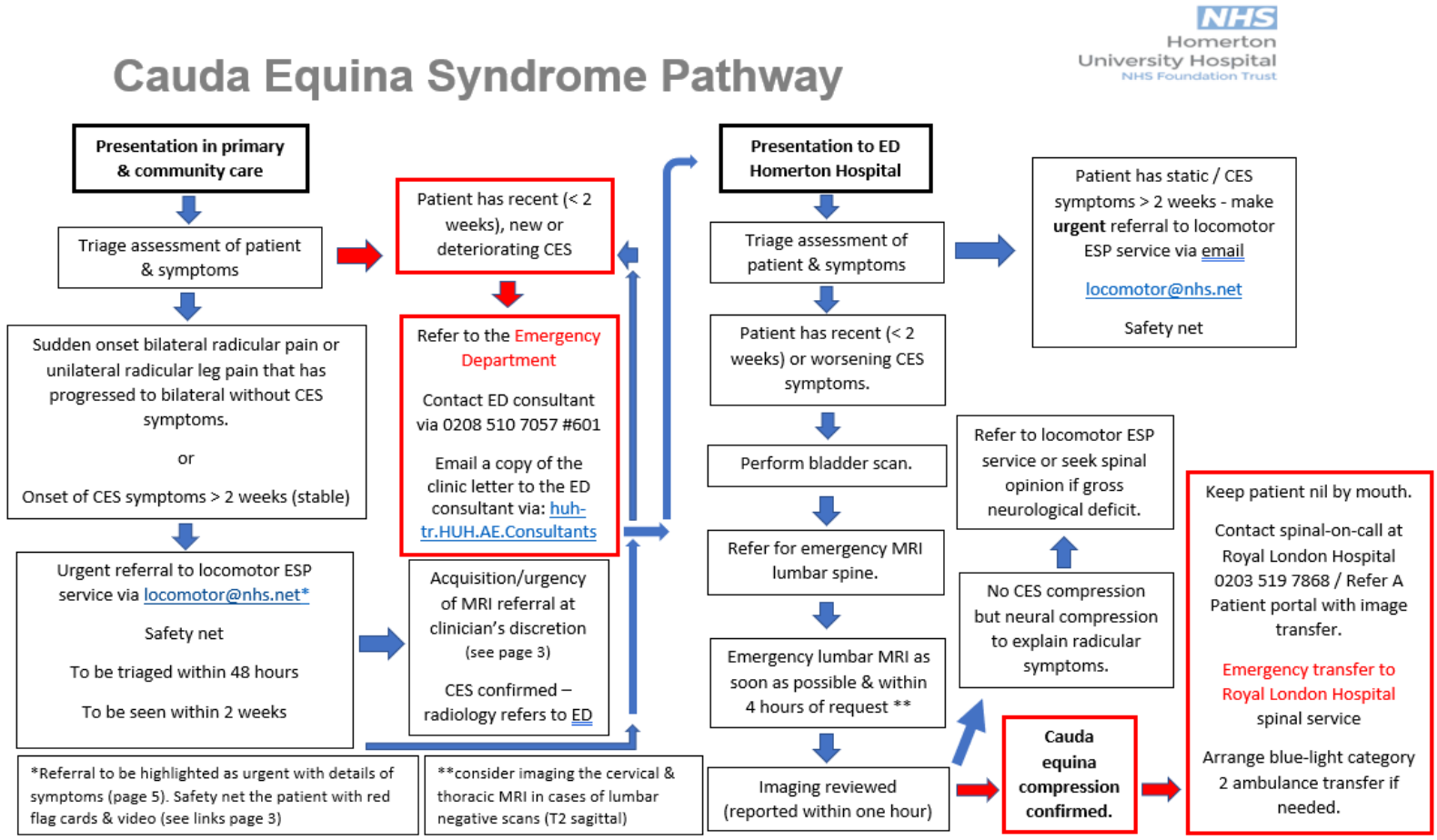
Low specific absorption rate (SAR) protocol should be set up to reduce SAR levels for those patients with MR conditional implants and a metal artefact reduction protocol (MAR) set up to reduce the artefact from any metals within the imaged area.

Reporting:
-Spinal on-call at the Royal London Hospital are happy to review out-of-hours MRI scans without a radiologist report. Consider utilising the image exchange portal or bleep # 188 out-of-hours. Contact the spinal-on-call on 0203 519 7868 or via https://www.referapatient.org/refer-a-patient

-Ideally a report should be made available to the referring clinician within one hour. A reporting radiographer of an appropriate competence to sign off the examination or an on-call local radiologist should support production of the report with outsourcing where necessary.

Service provision and development:
An emergency MRI scan to investigate possible CES should be prioritised ahead of other outpatient scheduled appointments.

5. Flow Chart


Cauda Equina Syndrome Pathway
NHS
Homerton
University Hospital
NHS Foundation Trust
Presentation in primary & community care
Triage assessment of patient & symptoms
Sudden onset bilateral radicular pain or unilateral radicular leg pain that has progressed to bilateral without CES symptoms.
or
Onset of CES symptoms > 2 weeks (stable)
Urgent referral to locomotor ESP service via locomotor@nhs.net*
Safety net
To be triaged within 48 hours
To be seen within 2 weeks
*Referral to be highlighted as urgent with details of symptoms (page 5). Safety net the patient with red flag cards & video (see links page 3)
Patient has recent (< 2 weeks), new or deteriorating CES
Refer to the Emergency Department
Contact ED consultant via 0208 510 7057 #601
Email a copy of the clinic letter to the ED consultant via: huh-tr.HUH.AE.Consultants
Acquisition/urgency of MRI referral at clinician's discretion (see page 3)
CES confirmed – radiology refers to ED
Presentation to ED Homerton Hospital
Triage assessment of patient & symptoms
Patient has static / CES symptoms > 2 weeks - make urgent referral to locomotor ESP service via email
locomotor@nhs.net
Safety net
Patient has recent (< 2 weeks) or worsening CES symptoms.
Perform bladder scan.
Refer for emergency MRI lumbar spine.
Emergency lumbar MRI as soon as possible & within 4 hours of request **
Imaging reviewed (reported within one hour)
**consider imaging the cervical & thoracic MRI in cases of lumbar negative scans (T2 sagittal)
Refer to locomotor ESP service or seek spinal opinion if gross neurological deficit.
No CES compression but neural compression to explain radicular symptoms.
Cauda equina compression confirmed.
Keep patient nil by mouth.
Contact spinal-on-call at Royal London Hospital 0203 519 7868 / Refer A Patient portal with image transfer.
Emergency transfer to Royal London Hospital spinal service
Arrange blue-light category 2 ambulance transfer if needed.

6. Appendix

Safety netting links:
Written information cards (32 different languages):
https://www.eoemskservice.nhs.uk/advice-and-leaflets/lower-back/cauda-equina
Video (English only):
https://www.youtube.com/watch?v=FdlxfcJmn-4&t=121s

Refer a Patient portal link:
https://www.referapatient.org/refer-a-patient

7. Reference:

GIRFT (2023) Spinal Surgery: National Suspected Cauda Equina Syndrome (CES) Pathway Available at: https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/10/National-Suspected-Cauda-Equina-Pathway-UPDATED-V2-October-2023.pdf (Accessed 28 May 2024)

8. Abbreviations & Definitions

GIRFT = getting it right first time
CES = cauda equina syndrome
ESP = extended scope practitioner
ED = emergency medicine
MRI = magnetic resonance imaging
MSCC = metastatic spinal cord compression