Functional Cauda Equina Syndrome

Ingrid Hoeritzauer

@IngridHoeritza1

Ingrid.Hoeritzauer@ed.ac.uk

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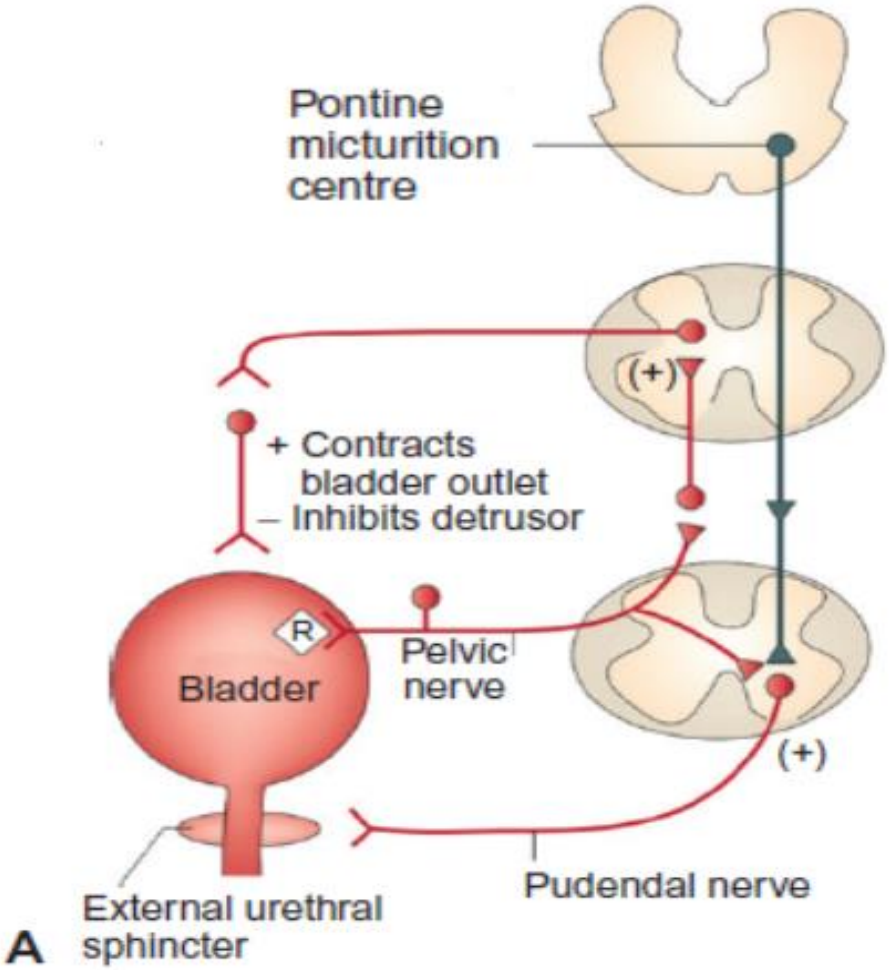
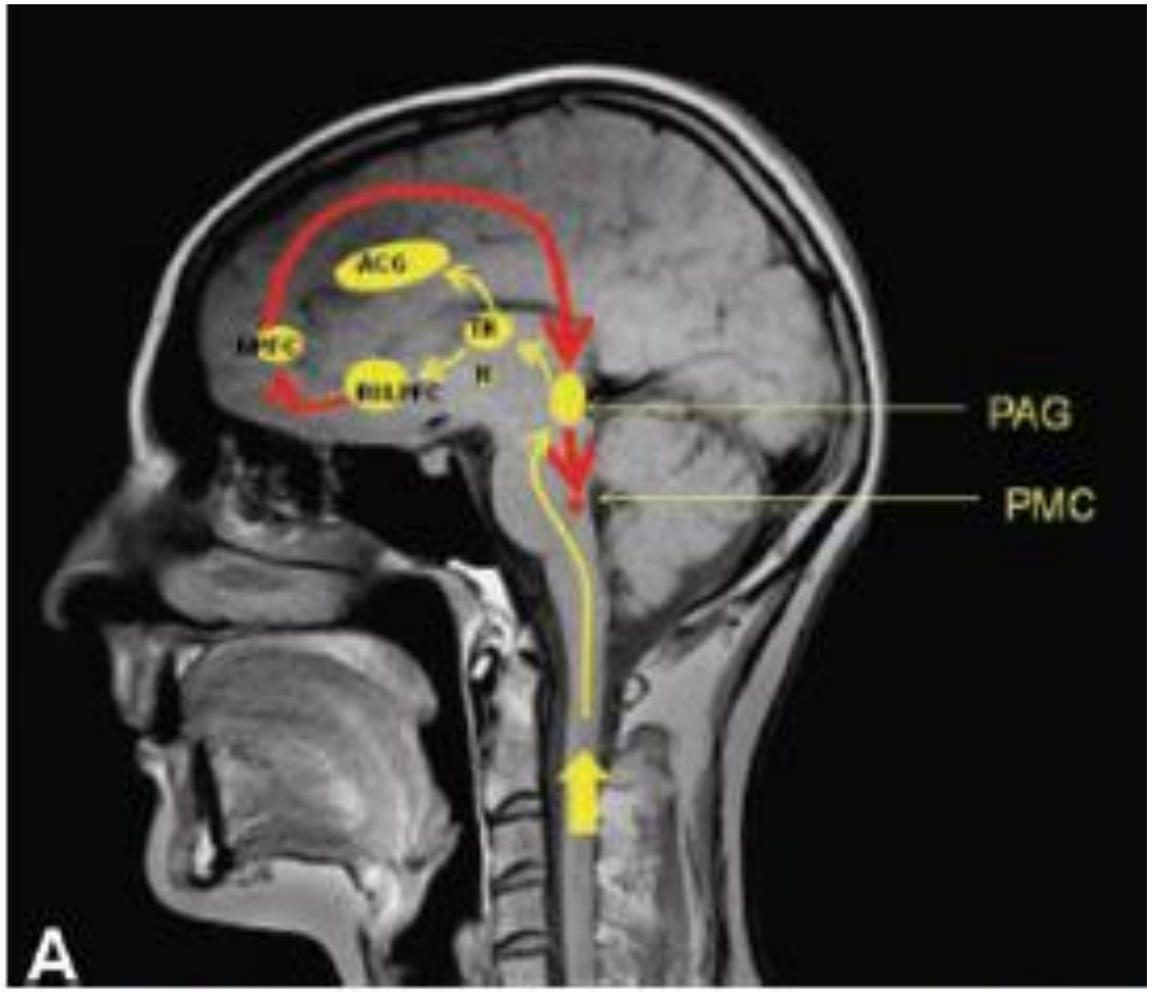
Anatomy
Detective work
Functional Neurological Disorders

How the heck does the bladder work?

*Actual bladder more complicated

Bladder Function: **Storage**





BM

WHAT IS ALREADY KNOWN ON THIS TOPIC

Oliguria is a common occurrence in patients admitted to intensive care and is associated with a marked increase in morbidity and mortality

WHAT THIS STUDY ADDS

Oliguria occurs twice as frequently in junior doctors on an intensive care unit as in their patients

This oliguria was not associated with increased mortality

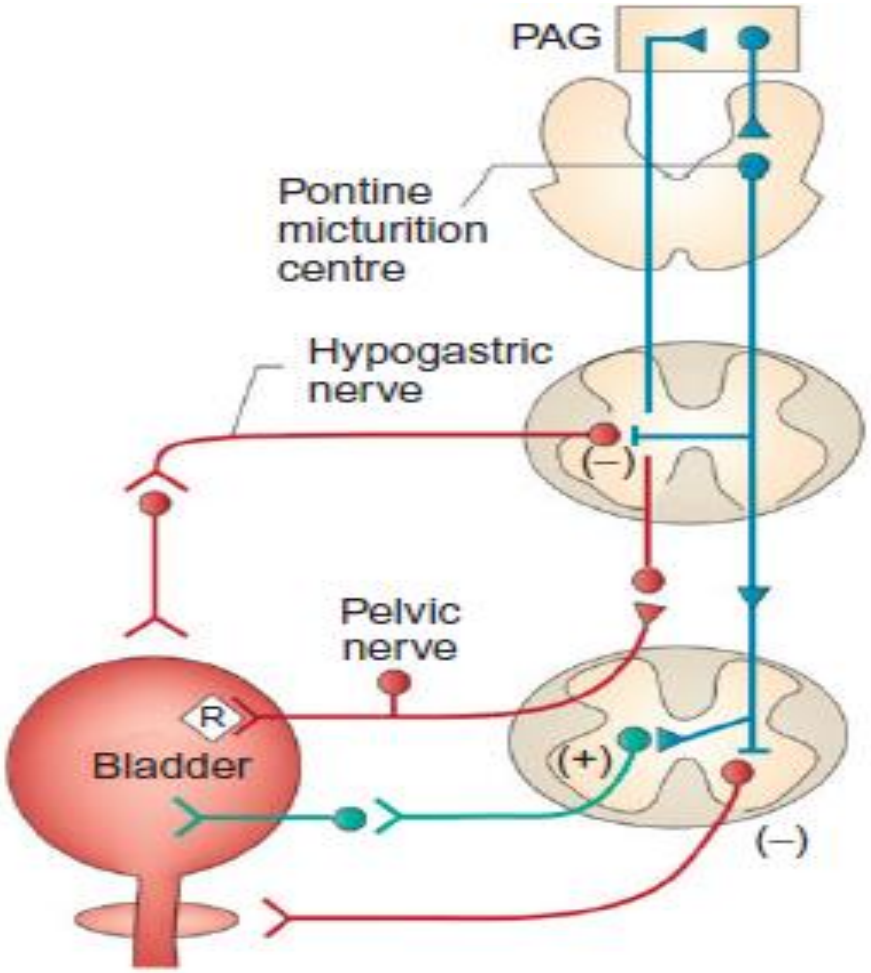
Markers of acute kidney injury in junior intensive care unit doctors might diverge from those for the intensive care unit population as a whole

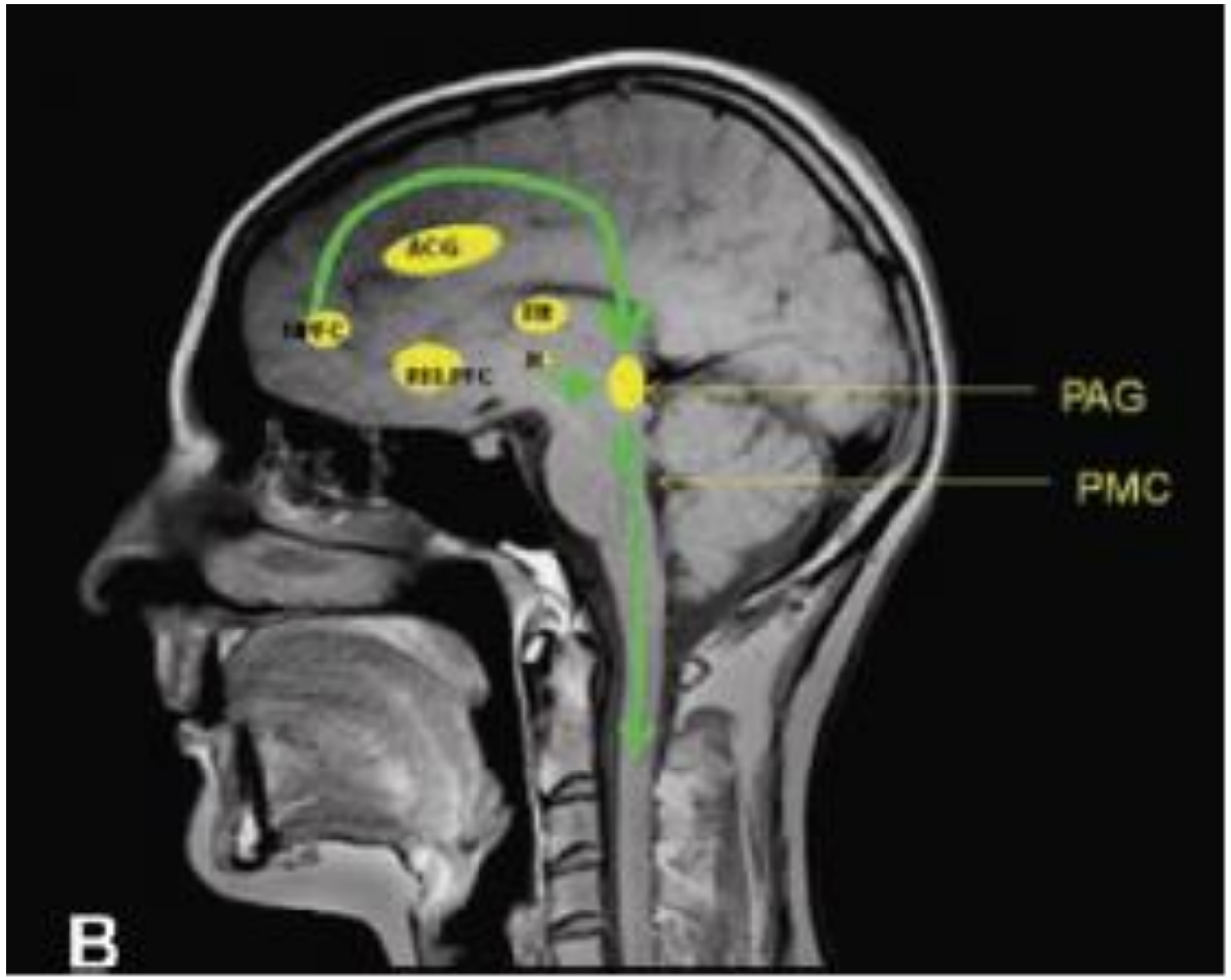
EARCH

ıtrol study

Neal D E Alexander,
ı, research fellow,[7]
sation for

Bladder Function: **Voiding**





Cauda Equina Syndrome: Importance

Mail Online

Photographer wins £2.4m damages payout from the NHS after hospital negligence wrecked her career and left her incontinent and ruined her sex life

- Heather Tait, 34, ran a thriving photography business and has 3 children
- Had been suffering from acute back pain but was not given MRI scan
- Collapsed disc was not spotted, so she developed horrific back condition
- Has now been awarded huge payout after High Court hearing

By ANNA HODGEKISS FOR MAILONLINE

Mum receives almost £1m payout after she was left in wheelchair and incontinent after hospital blunder

Mirror

Cauda Equina Syndrome:
A Clinico-radiological Diag...

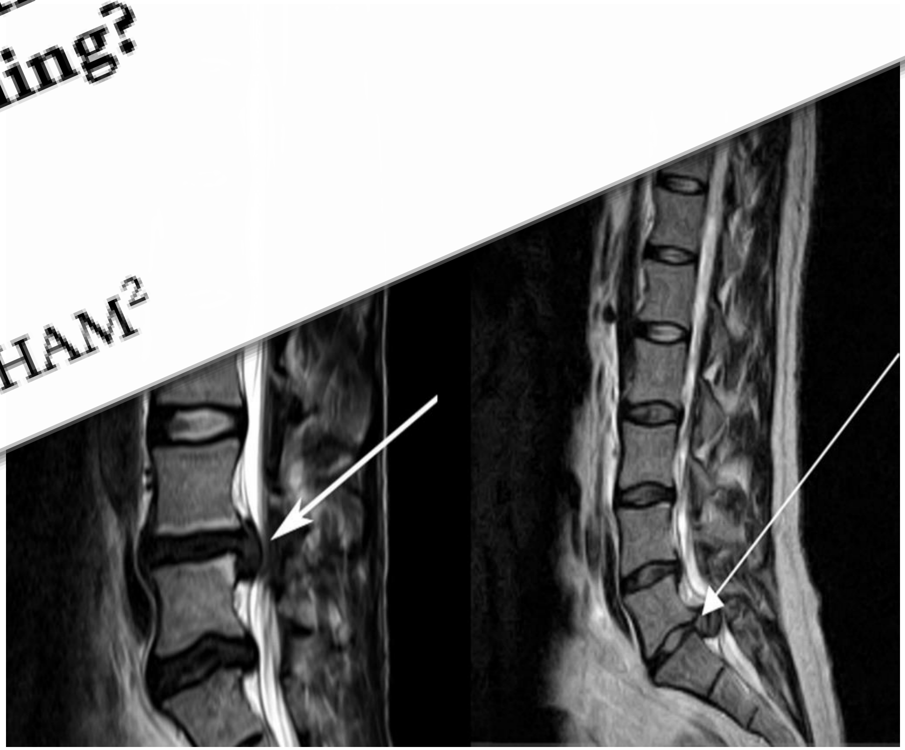
Clinical

≥1 of:

- bladder and/or ...
- Saddl...

...sacral and lumbar

... in the vertebral canal



Cauda equina syndrome – What is the correlation between clinical assessment and MRI scanning?

D. A. BELL[1], D. COLLIE[2] & P. F. STATHAM[2]

Detective work

Cauda Equina Syndrome

>70% of those with symptoms of cauda equina syndrome have a normal/non-explanatory scan

doi:10.1093/brain/awl220 *Brain* (2006), **129**, 3150–3164

REVIEW ARTICLE

Spinal dural arteriovenous fistulas: a congestive myelopathy that initially mimics a peripheral nerve disorder

K. Jellema,[1] C. C. Tijssen[1] and J. van Gijn[2]

Elsberg syndrome

A rarely recognized cause of cauda equina syndrome and lower thoracic myelitis

Lower Urinary Tract Symptom Prevalence and Management Among Patients with Multiple Sclerosis

Kristin M. Khalaf, PharmD, MS; Karin S. Coyne, PhD; Denise R. Globe, PhD; Edward P. Armstrong, PharmD; Daniel C. Malone, PhD; Jack Burks, MD

Urologic manifestations are one of the most well-known components of the disease, with more than 90% of patients with MS experiencing urologic symptoms 10 years after disease onset.[3]

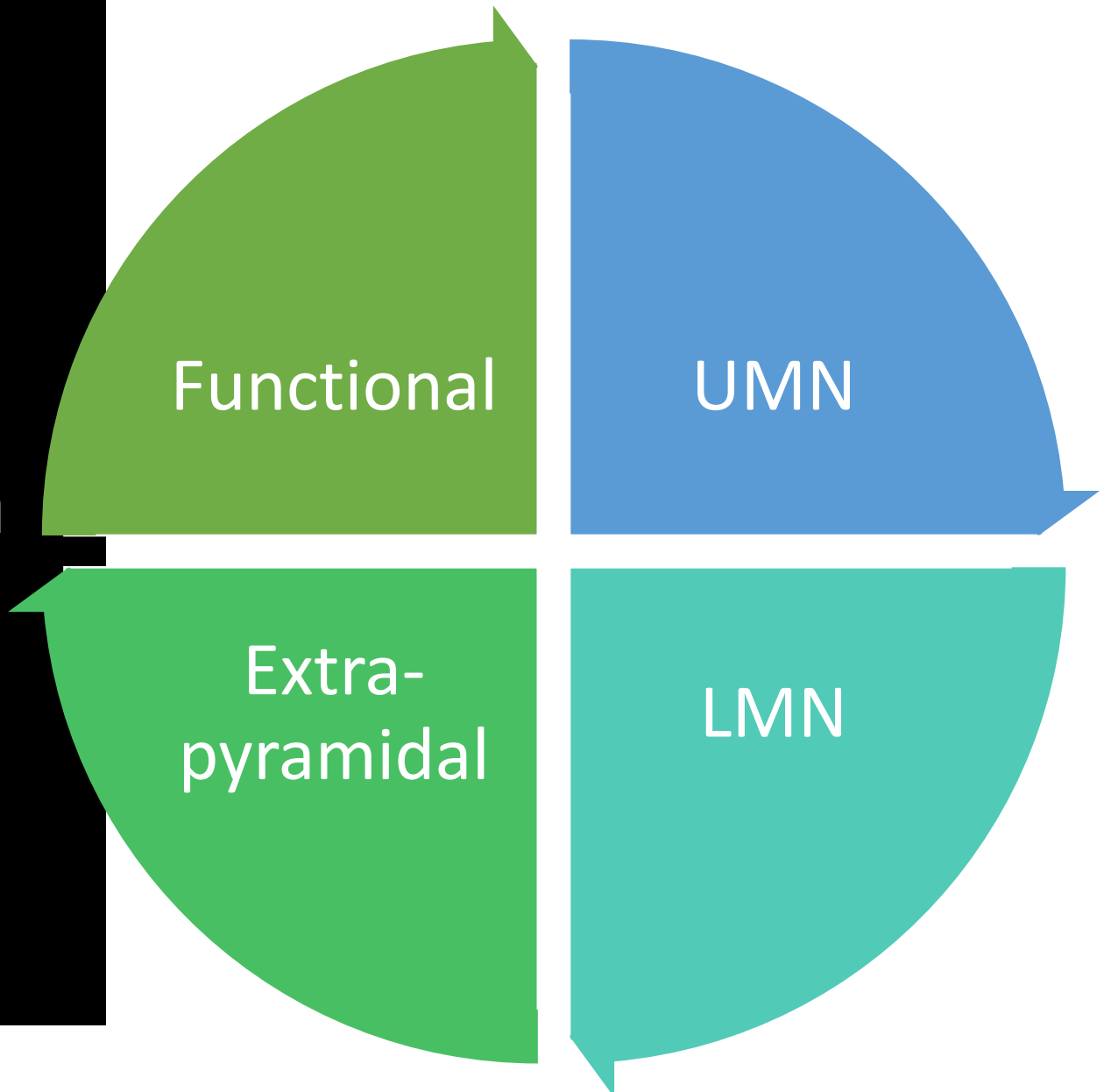
Box 1 'Red flags' suggesting an identifiable neurological cause in a scan-negative cauda equina presentation

- No history of back pain.
- A sensory level.
- Urinary retention despite adequate analgesia and resolution of constipation for more than 72 hours.
- Progressive weakness, particularly with loss of reflexes.
- Recent genital ulceration suggesting herpes simplex virus-2 infection.
- Progressive perineal pain.

Cauda Equina Syndrome

<10% of those with symptoms of cauda equina syndrome and a normal/non-explanatory scan have an underlying neurological disorder

The answer to all Neurological Puzzles starts with this:



ORIGINAL ARTICLE

Is scan-negative cauda equina syndrome a functional neurological disorder? A pilot study

L. L. Gibson[a], L. Harborow[b], T. Nicholson[a], D. Bell[c] and A. S. David[d]

[a]*Department of Psychosis Studies, Institute of Psychiatry, Psychology and Neuroscience, London;* [b]*South London and Maudsley NHS Foundation Trust, London;* [c]*Kings College Hospital NHS Foundation Trust, London; and* [d]*Institute of Mental Health, University College London, London, UK*

Journal of Neurology
https://doi.org/10.1007/s00415-018-9078-2

ORIGINAL COMMUNICATION

The clinical features and outcome of scan-negative and scan-positive cases in suspected cauda equina syndrome: a retrospective study of 276 patients

Ingrid Hoeritzauer[1,2,5] · Savva Pronin[1,5] · Alan Carson[1,2,3] · Patrick Statham[2,4,5] · Andreas K. Demetriades[1,2,4,5] · Jon Stone[1,2]

Patients referred with ?CES Aug 2013- Nov 2014	n	Operation (n)%	Functional disorder (n)%	Chronic Back Pain on Follow Up (n)%
Scan positive	78	94%	6%	22%
Scan negative CES **with L3-S1 nerve root compromise**	97	15%	29%	50%
Scan negative patients **without** nerve root compromise	95	1%	35%	55%

CAUDA EQUINA SYNDROME (CES)

Consecutive patients referred to neurosurgery Aug 15-Jan 18 with ?cauda equina syndrome

BLB Study
Back or Leg pain with Bladder symptoms study

	Scan Positive N=47	Scan –ve but Nerve root compression N=76	Scan Negative N=62
Evidence of Functional Motor or Sensory Disorder on examination	**11%**	**34%**	**68%**
Hoover's sign positive	**11%**	**18%**	**43%**
Hoover's sign *in patients with weakness*	**16%**	**42%**	**71%**

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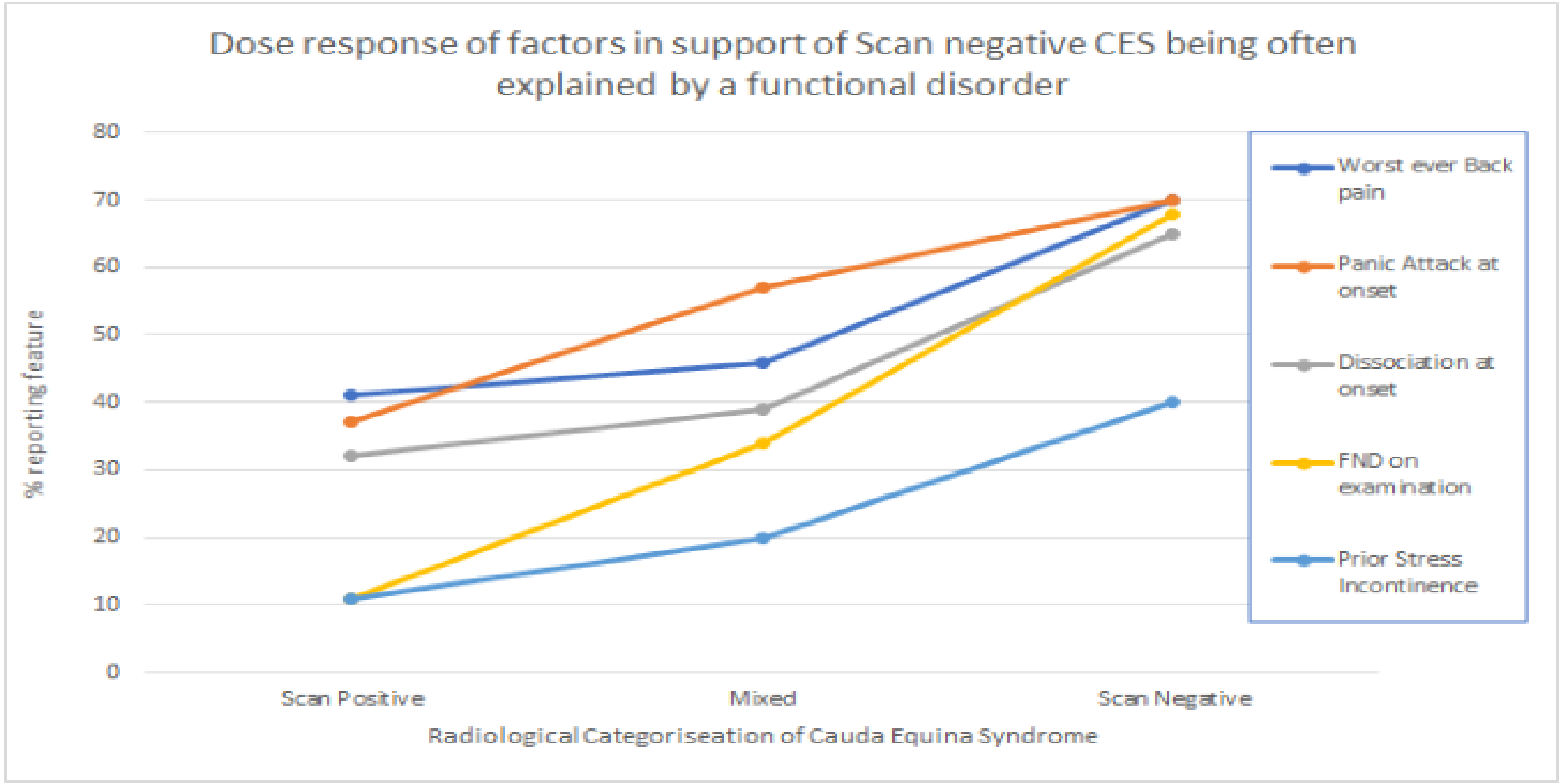
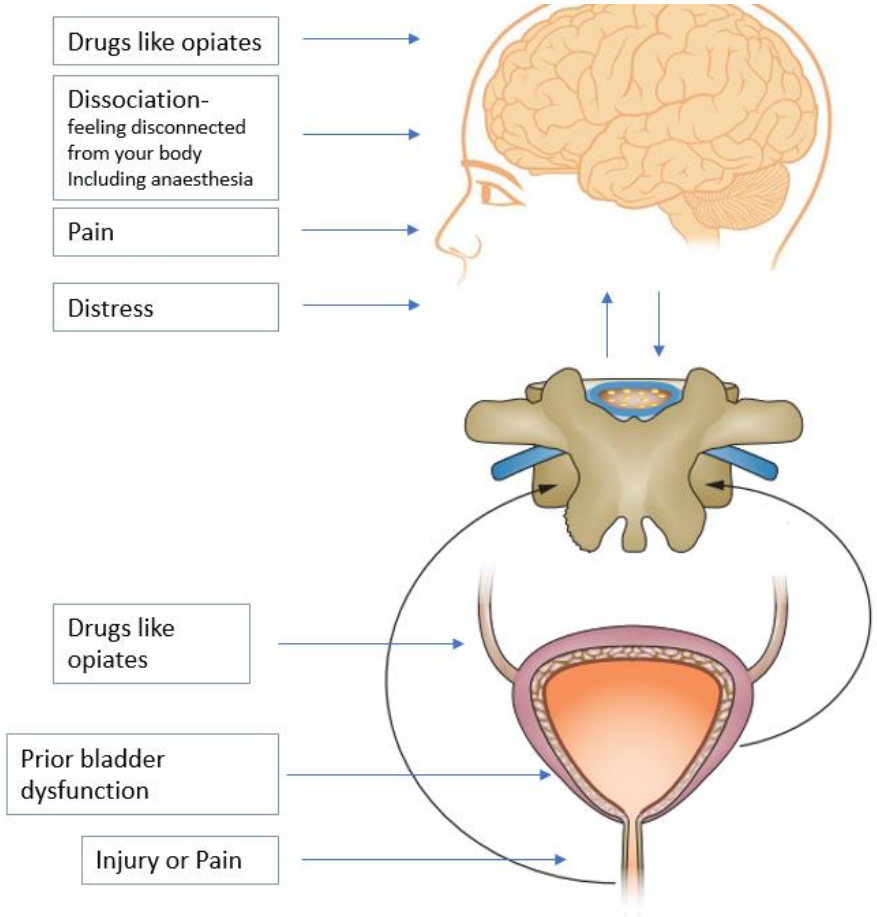
Hoover's sign positive	11%	18%	43%
Hoover's sign *in patients with weakness*	16%	42%	71%
Evidence of Functional Motor or Sensory Disorder on examination	11%	34%	68%
Panic Attack at onset	**37%**	**57%**	**70%**
Worst ever back pain	**41%**	**46%**	**70%**
Bilateral leg weakness	**17%**	**18%**	**39%**

Clues to Mechanism



‘Scan negative’ cauda equina: NO Identifiable Structural Explanation

- **Pain**
  - **frequently have radiculopathy**
- **Medications**
- **Exacerbation of underlying urinary problems?**
- **Idiopathic urinary retention**
- **Functional Disorders**



‘Scan negative’ cauda equina:
Baseline Population Urinary Incontinence

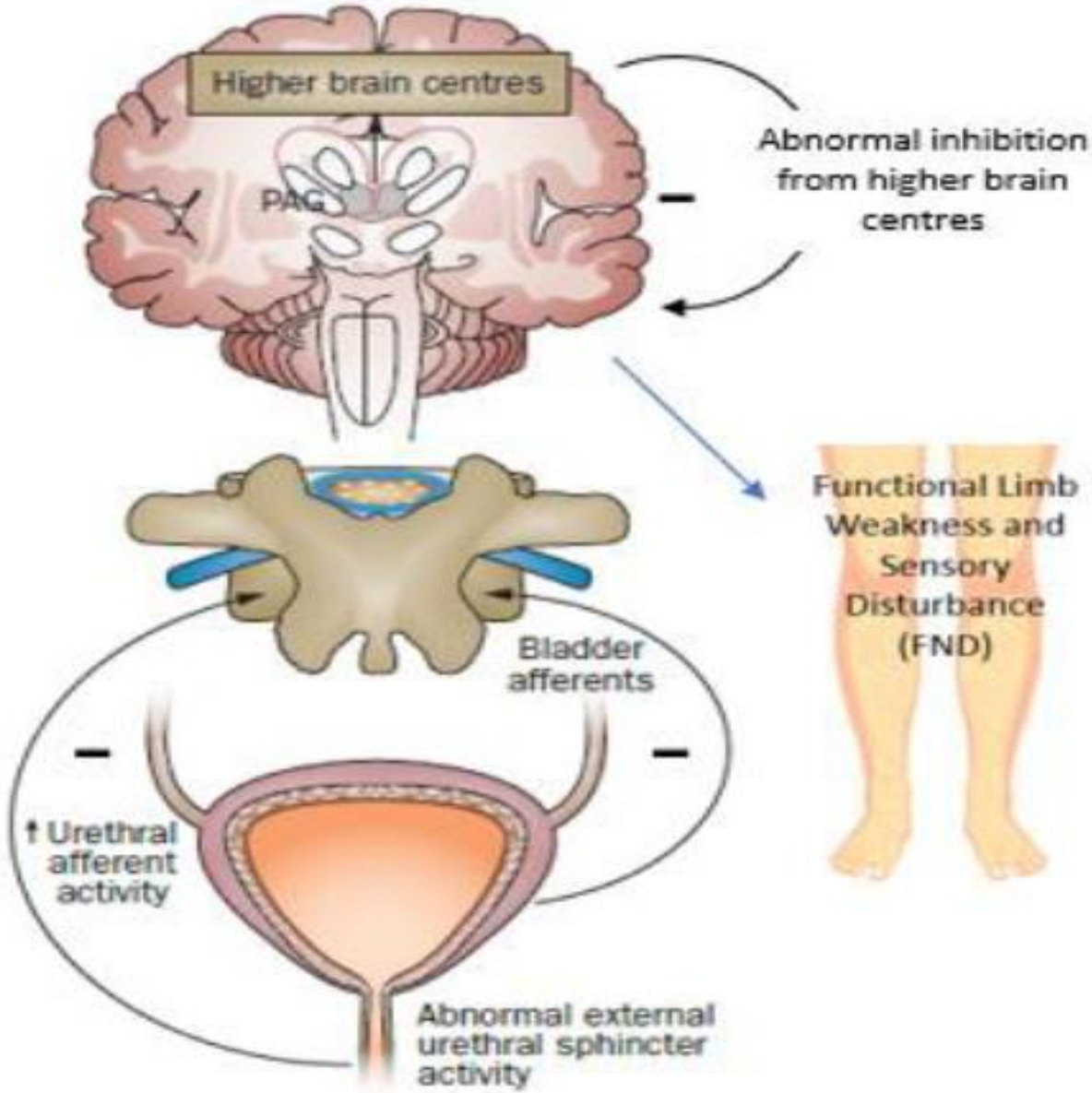
- Urinary incontinence 1 in 3 women
  - 1 in 10 men
- Faecal incontinence 10-20% people
- Correlation between chronic back pain and stress incontinence
- Correlation between urinary incontinence and sexual dysfunction

Medications- opiates, tricyclics, benzodiazepines, pregabalin

Fear and Dissociation

Pain

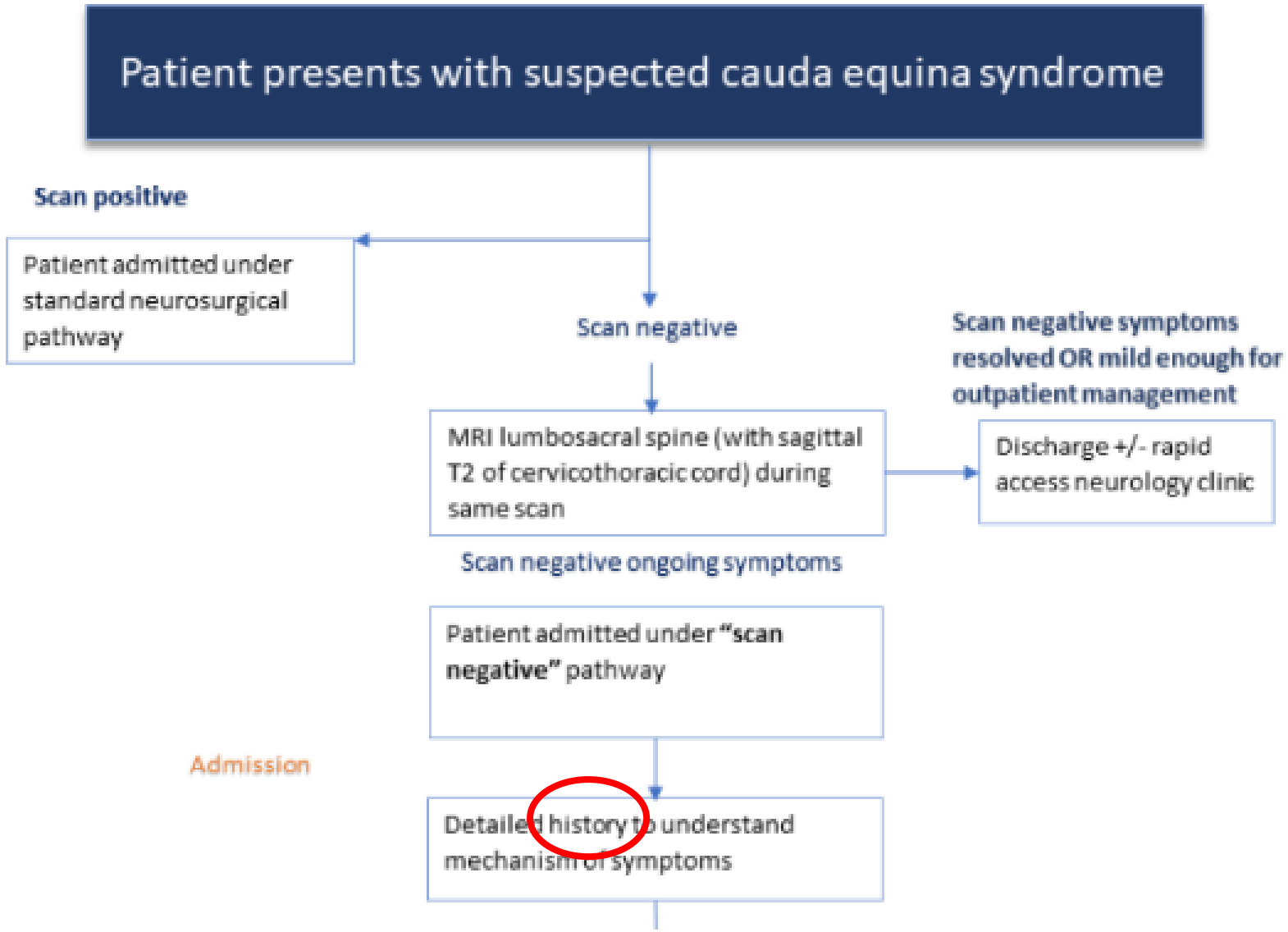
Vulnerability to Functional Disorders

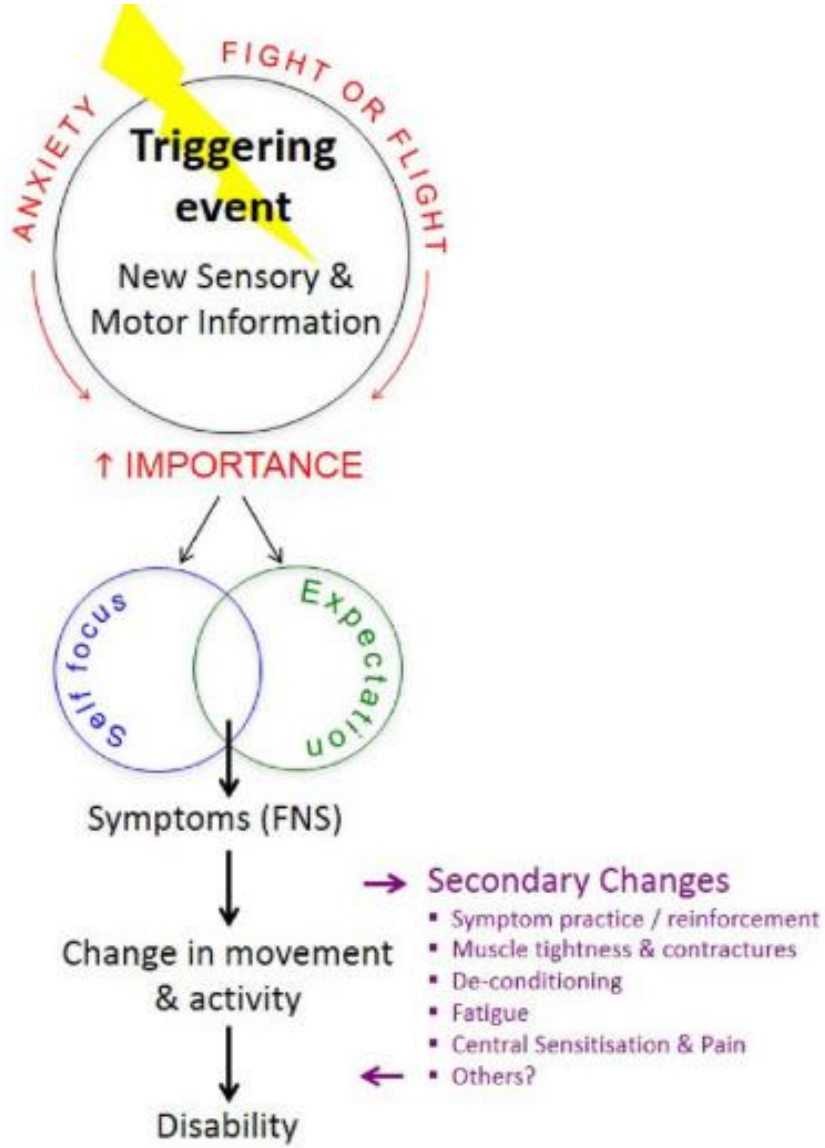


Medications like opiates, tricyclics, benzodiazepines, pregabalin

Underlying bladder dysfunction

Pain and fear


Patient presents with suspected cauda equina syndrome
Scan positive
Patient admitted under standard neurosurgical pathway
Scan negative
MRI lumbosacral spine (with sagittal T2 of cervicothoracic cord) during same scan
Scan negative symptoms resolved OR mild enough for outpatient management
Discharge +/- rapid access neurology clinic
Scan negative ongoing symptoms
Patient admitted under "scan negative" pathway
Admission
Detailed history to understand mechanism of symptoms



J Neurol (2015) 262:674-681

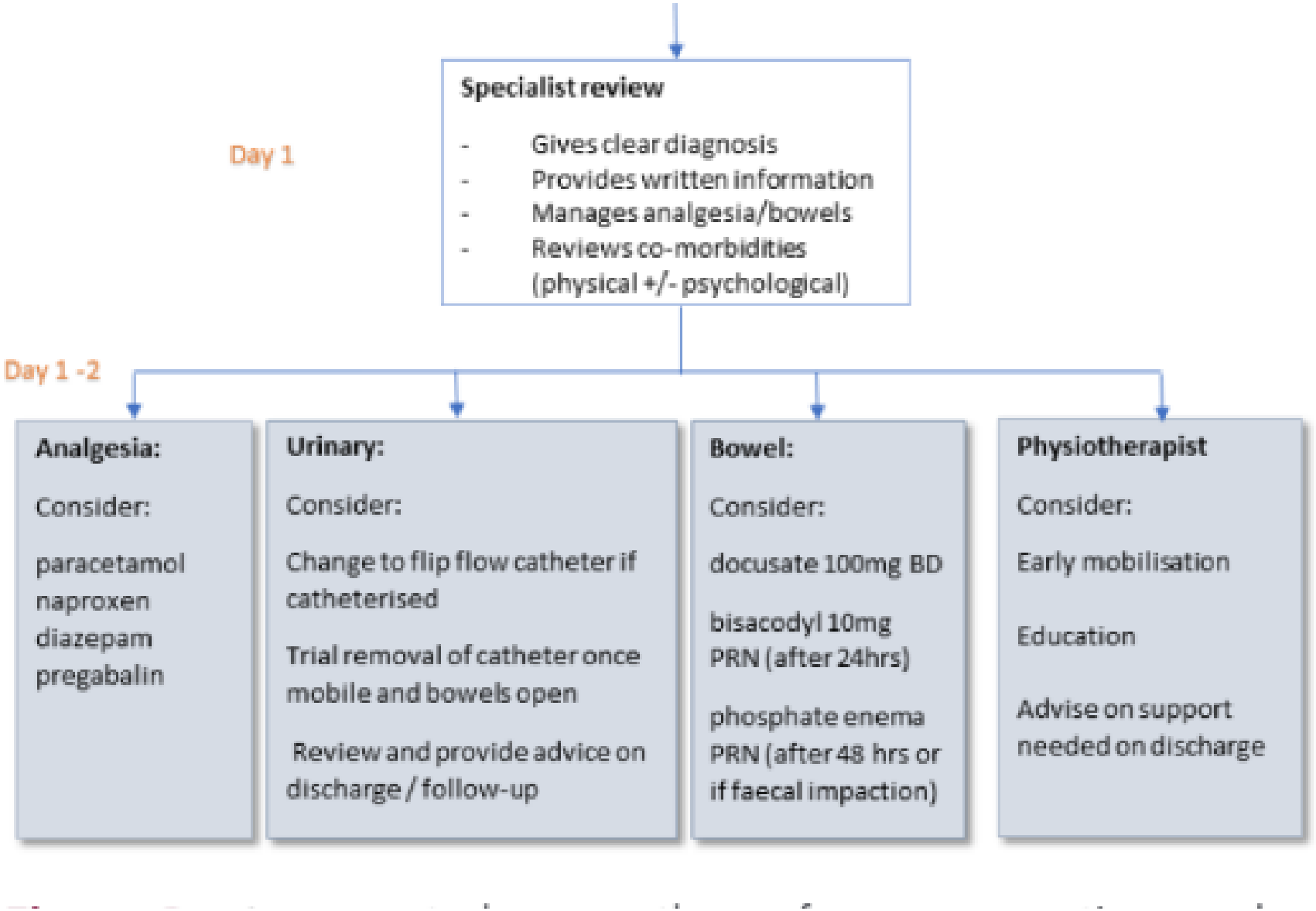
ORIGINAL RESEARCH
SPINE

Systematic Literature Review of Imaging Features of Spinal Degeneration in Asymptomatic Populations

W. Brinjikji, P.H. Luetmer, B. Comstock, B.W. Bresnahan, L.E. Chen, R.A. Deyo, S. Halabi, J.A. Turner, A.L. Avins, K. James, J.T. Wald,

Table 2: Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients[a]

Imaging Finding	Age (yr)						
	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk signal loss	17%	33%	54%	73%	86%	94%	97%
Disk height loss	24%	34%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%


Day 1
Specialist review
- Gives clear diagnosis
- Provides written information
- Manages analgesia/bowels
- Reviews co-morbidities (physical +/- psychological)
Day 1 -2
Analgesia:
Consider:
paracetamol
naproxen
diazepam
pregabalin
Urinary:
Consider:
Change to flip flow catheter if catheterised
Trial removal of catheter once mobile and bowels open
Review and provide advice on discharge / follow-up
Bowel:
Consider:
docusate 100mg BD
bisacodyl 10mg PRN (after 24hrs)
phosphate enema PRN (after 48 hrs or if faecal impaction)
Physiotherapist
Consider:
Early mobilisation
Education
Advise on support needed on discharge

Things we think are useful

- Get the pain under control
- Get bowels moving
- Get the catheter out

Thanks to the patients and the team



UCES
Understanding Cauda Equina Syndrome

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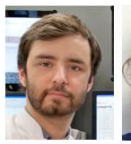




Jeannette Gelauff[1] Neurology PhD SHIFT Study

Paula Gardiner CBT/Physio CODES

Lindsey MacGregor CBT/OT CODES

Stoyan Popkirov Trauma CRPS PPPD Cognition

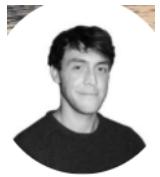
Hannah Callaghan Research Worker CODES

Laura McWhirter Psychiatry TMS

Alex Lehn[2] Neurology iBook

Lea Ludwig[3] Psychology CODES



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