

CAUDA EQUINA SYNDROME

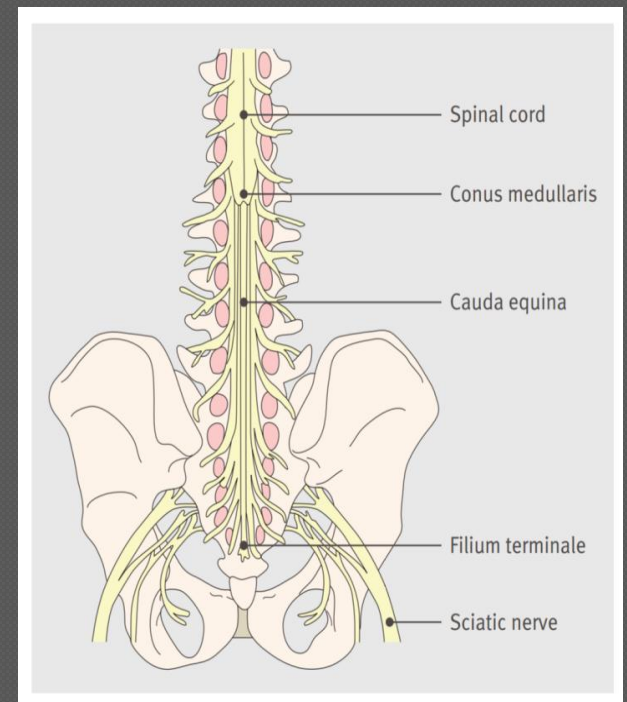
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Pendahuluan

- Cauda Equina Syndrome (CES) adalah kondisi neurologis serius yang disebabkan oleh kerusakan atau gangguan di Cauda Equina yang menyebabkan hilangnya fungsi plexus lumbalis (serabut saraf) di area dibawah conus medullaris



Etiologi

Causes	Lesions	
Congenital	Spinal dysraphism Vertebral body malformations Dwarfing syndromes Congenital tumours	
Acquired	Trauma	Spinal fracture or dislocation
	Infective	Bacterial abscess Tuberculosis
	Neoplastic	Primary tumour Secondary metastases
	Degenerative	Spondylolisthesis Spinal stenosis Disc Prolapse
	Inflammatory	Rheumatoid arthritis Ankylosing spondylitis
	Vascular	AV malformation Epidural or subdural haematoma
	Iatrogenic	Secondary to surgery

Diagnosis

- Kriteria Fraser et al :
 - Disfungsi bladder / bowel
 - Menurunnya sensasi di *saddle area*
 - *Sexual Dysfunction* disertai defisit neurologi area tungkai (motor/sensory loss, reflex change)
- Kriteria Tandon dan Sakaran :
 - Onset cepat, tanpa adanya riwayat nyeri belakang
 - Acute bladder dysfunction dengan riwayat LBP dan siatika
 - Chronic bacache dan siatika dengan progresif CES terkadang disertai stenosis kanalis.

Cauda Equina Syndrome Symptom Chart

Bladder disturbances

- Urination different to normal.
- Inability to start, stop and/or control urination.
- Loss of normal sensation when urinating.
- Loss of full bladder sensation.
- Inability to empty bladder fully.

Saddle Numbness

- loss of feeling between the legs.
- Numbness in and around the genitals/anus.
- Loss of feeling of toilet paper when wiping.



Bowel function affected

- Loss of feeling when passing a bowel motion.
- Constipation.
- Loss of control of bowel movement.

Sexual Dysfunction

- Loss of sensation during sexual intercourse.
- Inability to achieve an erection or ejaculate.
- Loss of clitoral sensation.

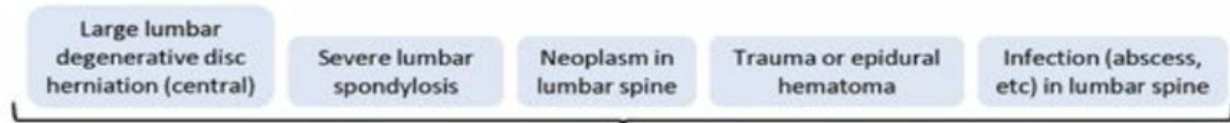
Low Back pain/leg weakness and sciatica

A combination of these problems may be present. Keep a look out for bilateral toe extensor/flexor weakness, this can occur before other muscle weakness. Marked inability to bend forward with back pain/sciatica and leg weakness may indicate a large disc prolapse. Anal sphincter reflex maybe affected. Look out for bilateral achilles reflex absence.

Cauda Equina Syndrome: *signs and symptoms*

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Mechanical compression of sacral (and lumbar) nerve roots between L2 and S1

Cauda Equina Syndrome

Damage to motor neurons within the compressed nerve roots

Acutely ↓ stimulation/control of lower limb and perineal (pelvic floor) muscles

(for full mechanisms, see slide on "Signs of lower motor neuron damage")

Weakness (flaccid paralysis) in both legs

Areflexia (loss of normal leg reflexes)

Areflexia of the urinary detrusor and rectal smooth muscle, cannot overcome the residual tone of the internal urethral and anal sphincters

Urinary and fecal retention

Damage to sensory neurons within the compressed nerve roots

Damage to fragile, smaller sacral nerves ↓ sensation in the perineum

Saddle Anesthesia

Pt can't feel when bladder/bowels are full!

Damage to relatively larger sensory neurons running down both legs

Sensory disturbance in both legs (numbness, tingling, loss of temperature sensation, etc)

Mechanically damaged nociceptive sensory neurons send ectopic impulses up to the brain

Neuropathic pain (shooting, stabbing, lancinating, burning pain radiating down both legs)

Overflow incontinence

Note: *Surgical Emergency!*

- Goal is to prevent permanent damage to sacral nerves, which can happen quickly (within hours) if not treated!
- Pain/sensory disturbance in legs does not have to be bilateral. As soon as bladder/bowel dysfunction is suspected, immediate MRI and surgery!



Prognosis

Poor prognostic factors	No effect
Patients with acute onset and often with a traumatic history (41)	Intervertebral disc level (22,27)
Absence of pain (sciatica) at the time of diagnosis (10)	Age (27)
Saddle-style sensory loss (44)	Chronic/newly onset back pain and radiculopathy (27)
Presence of leg pain at the time of diagnosis (31)	Motor deficits (22,31)
Unilateral or bilateral leg pain (22)	Unilateral sciatica (22)
Bilateral sciatica (22)	

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