

Bladder dysfunction after surgery for cauda equina syndrome: an underserved group?

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Introduction:

- In patients with cauda equina syndrome (CES) post decompression surgery, in patients with CES post decompression surgery, 33-76% have been described to have bladder dysfunction. (1-3)
- Urodynamic findings are variable and there is little predictability in urodynamic findings from symptoms.
- In the UK, patients with urinary symptoms should have follow-up with their local spinal injuries centre or locally agreed urology service, as per the 'Getting It Right First Time' Cauda Equina Syndrome pathway. (4)

Patients and Methods:

- Using our electronic patient record system (EPIC SliceDicer), we identified all patients (n = 197) who underwent emergency laminectomy or lumbar decompression for CES between July 2023 and June 2025 at the South East and Kent neurosurgery centre.
- We reviewed inpatient notes and neurosurgical outpatient follow-up records to identify patients who experienced urinary symptoms such as urinary retention, difficulty voiding, or incontinence following surgery for CES.

	Had post-op symptoms	No post-op symptoms	total
retention/ incontinence before	42	50	92
no retention/ incontinence before	23	82	105

Table 1: correlation between pre op urinary retention/incontinence and post-op urinary symptoms.

1. Barker TP, Steele N, Swamy G, Cook A, Rai AM, Crawford R, et al. Long-term core outcomes in cauda equina syndrome. Bone Joint J. 2021;103-B(9):1464–1471. doi: 10.1302/0301-620X.103B9.BJJ-2021-0094.R1
2. Korse NS, Veldman AB, Peul WC, Vleggeert-Lankamp CLA. The long-term outcome of micturition, defecation and sexual function after spinal surgery for cauda equina syndrome. PLoS One. 2017;12(4):e0175987. doi: 10.1371/journal.pone.0175987
3. Hazelwood JE, Hoeritzauer I, Pronin S, Demetriades AK. An assessment of patient-reported long-term outcomes following surgery for cauda equina syndrome. Acta Neurochir (Wien). 2019;161(9):1887–1894. doi: 10.1007/s00701-019-03973-7
4. Getting It Right First Time (GIRFT). Spinal surgery: national suspected cauda equina syndrome (CES) pathway [Internet]. London: NHS England; 2023 [cited 2026 Sep 8]. Available from: GIRFT National Suspected Cauda Equina Syndrome Pathway.

Results:

- Of the 197 patients, 34 (17.26%) were documented to experience urinary symptoms on discharge but had no documented plan for referral to urology; 20 (10.15%) had urinary symptoms with a plan documented in the neurosurgical follow-up clinic for their GP to refer them to local urology services or referred to local continence nurses; and only 8 (4.06%) were referred directly to urology due to post-operative urinary symptoms.
- Only three patients had urodynamics booked. One showed detrusor overactivity with obstructed voiding; the other a large capacity bladder with detrusor failure; and the other is awaited.
- As shown in table 1, of the 92 patients with pre-operative urinary retention or incontinence, 42 (45.7%) experienced post-operative urinary symptoms post decompression, compared with 23 of 105 patients (21.9%) without pre-operative symptoms (The two-tailed P value equals 0.0038).

Conclusions:

- This study highlights the importance of timely investigation and management of post-operative CES patients who develop urinary symptoms, to minimise disruption to their quality of life and progression of bladder dysfunction.
- We plan to streamline the referral pathway to Urology in line with national GIRFT guidelines.