

Cauda Equina Syndrome: An Audit on Referral Adequacy and its Impact on Delay to Surgery

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Abstract : PURPOSE: Timely decompressive surgery for cauda equina syndrome (CES) is dependent on efficient referral pathways for patients presenting at local primary or secondary centres to tertiary spinal centres in the United Kingdom (UK). Identifying modifiable points of delay within this process is important as minimising time between presentation and surgery may improve patient outcomes. This study aims to analyse whether adequacy of referral impacts on time to surgery in CES. MATERIALS AND METHODS: Data from all cases of confirmed CES referred to a single tertiary UK hospital between August 2017 to December 2019, via a suspected CES e-referral pathway, were obtained retrospectively. Referral adequacy was defined by the inclusion of sufficient information to determine the presence or absence of several NICE 'red flags'. Correlation between referral adequacy and delay from referral-to-surgery was then analysed. RESULTS: In total, 118 confirmed CES cases were included. Adequate documentation for saddle anaesthesia was associated with reduced delays of more than 48 hours from referral-to-surgery [$X^2(1, N=116)=7.12, p=.024$], an effect partly attributable to these referrals being accepted sooner [$U=16.5; n_1=27, n_2=4, p=.029, r=.39$]. Other red flags had poor association with delay. Referral adequacy was better for somatic red flags [bilateral sciatica (97.5%); severe or progressive bilateral neurological deficit of the legs (95.8%); saddle anaesthesia (91.5%)] compared to autonomic red flags [loss of anal tone (80.5%); urinary retention (79.7%); faecal incontinence or lost sensation of rectal fullness (57.6%)]. Although referral adequacy for urinary retention was 79.7%, only 47.5% of referrals documented a post-void residual numerical value. CONCLUSIONS: Adequate documentation of saddle anaesthesia in e-referrals is associated with reduced delay-to-surgery for confirmed CES, partly attributable to these referrals being accepted sooner. Other red flags had poor association with delay to surgery. Referral adequacy for autonomic red flags, including documentation for post-void residuals, has significant room for improvement.

Keywords : cauda equina, cauda equina syndrome, neurosurgery, spinal surgery, decompression, delay, referral, referral adequacy

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