Revisiting Cauda Equina Syndrome (CES) During Pregnancy: Systematic Review and Critical Appraisal of Current Evidence

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Abstract

The current study aims to systematically review and analyse the pertinent literature for the management of CES during pregnancy since current evidence is scarce. A systematic search was conducted using predetermined search terms in Medline, Embase, PubMed, Science-Direct, and Cochrane Library. All peer-reviewed studies addressing the management of pregnant women presenting with CES were included. The quality of eligible articles was assessed. Extracted data and characteristics were pooled for analysis. A meta-analysis was non-feasible mainly due to the significant heterogeneity of data. From a total of 26 articles (all level IV), 30 patients were included in this study with a mean age of 31.2 years (SD= 5.2). The average gestational age was 26 weeks (SD=7.3). Disc herniation was the most common aetiology accounting for 73% of the cases (n=22). With regards to surgical technique, 70% (n=21) of the patients were operated on in the prone position and 73% (n=22) had general anaesthesia. Third-trimester spinal surgeries had a higher complete recovery rate when compared to second and first (41.7% vs. 33% vs. 0%). When compared to the open approach, minimally invasive spinal surgery (MISS) had a higher complete recovery rate (50% vs. 23%) and lesser risk of persistent post-operative symptoms (50% vs. 77%). Patients who had a caesarean section (CS) after spinal surgery reported a higher rate of the full resolution of symptoms (44% vs. 34% vs. 0%) and lesser symptoms persistence (56% vs. 66% vs. 100%) compared to those who had CS before spinal surgery and vaginal delivery after spinal surgery, respectively. There is limited evidence to guide the management of pregnant patients with CES. This study shows a clear tendency towards improved outcomes with MISS, surgery through later stages of pregnancy, and CS after surgery. However, selection bias and the overall poor quality of current research limit reliable conclusions.

Image

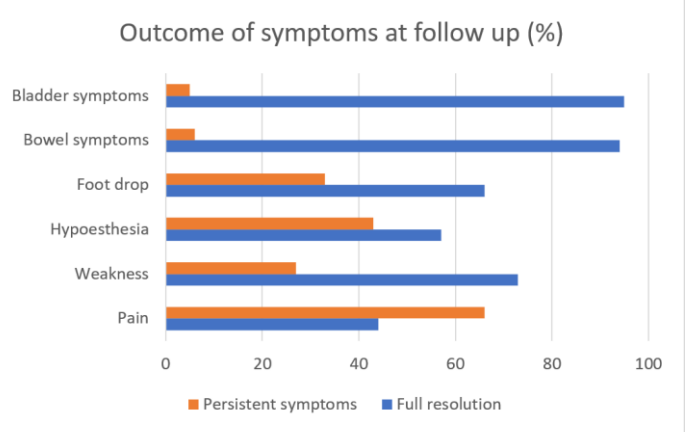


Figure: Summary of patient-reported outcomes at follow-up.

Recent Publications (minimum 5)

1. Geftler A., Sasson A., Shelef I., Perry Z.H., Atar D. Cauda equina syndrome in a 36 week gravida patient. Isr Med Assoc J. 2015;17(8):522–3.
2. Capit'an B, Tor'an M. The cauda equina syndrome in pregnant woman with a massive disc herniation. Rev Esp Cir Ortop Traumatol. 2017;61:63–5. Martel C.G., Volpi-Abadie J., Ural K. Anesthetic management of the parturient for lumbar disc surgery in the prone position. Ochsner J. 2015;15(3):259–61.
3. Kovari VZ, Horvath L. Surgical management of cauda syndrome in third trimester of pregnancy focusing on spinal anesthesia and right lateral positioning during surgery as possible practices. Eur Spine J. 2018;27(Suppl 3):483–8.
4. Vakos A., Dean K., Reeder C., Louis-Jacques A. Management of cauda equina syndrome during pregnancy and postpartum. BMJ Case Rep. 2022;15(4):e238793.
5. Penkulinti M, Banala R, Santosh V, GPV S. A Very Rare Case of Cauda Equina Syndrome due to Lumbar Disc Prolapse in a Pregnant Woman in the Second Trimester. J Spinal Stud Surg. 2017;1:56–8

Photograph



Biography

Mr. Chinedu Egu is a surgical trainee with the Centre for Spinal Studies and Surgeries (CSSS). The Centre is based at Queen's Medical Centre of the Nottingham University Hospitals, one of the largest university hospitals in Europe. The CSSS is embedded in the Musculoskeletal and Neurosciences Directorate together with the Departments of Orthopaedic Surgery, Neurosurgery, and Neurology. and has been passionate about improving spinal care within the NHS

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