

Evaluation of Requests And Outcomes Of Magnetic Resonance Imaging Assessing For Cauda Equina Syndrome At A UK Trauma Centre

Authors : Chris Cadman, Marcel Strauss

Abstract : Background: In 2020, the University Hospital Wishaw in the United Kingdom became the centre for trauma and orthopaedics within its health board. This resulted in the majority of patients with suspected cauda equina syndrome (CES) being assessed and imaged at this site, putting an increased demand on MR imaging and displacing other previous activity. Following this transition, imaging requests for CES did not always follow national guidelines and would often be missing important clinical and safety information. There also appeared to be a very low positive scan rate compared with previously reported studies. In an attempt to improve patient selection and reduce the burden of CES imaging at this site clinical audit was performed. Methods: A total of 250 consecutive patients imaged to assess for CES were evaluated. Patients had to have presented to either the emergency or orthopaedic department acutely with a presenting complaint of suspected CES. Patients were excluded if they were not admitted acutely or were assessed by other clinical specialities. In total, 233 patients were included. Requests were assessed for appropriate clinical history, accurate and complete clinical assessment and MRI safety information. Clinical assessment was allocated a score of 1-6 based on information relating to history of pain, level of pain, dermatomes/myotomes affected, peri-anal paraesthesia/anaesthesia, anal tone and post-void bladder volume with each element scoring one point. Images were assessed for positive findings of CES, acquired spinal stenosis or nerve root compression. Results: Overall, 73% of requests had a clear clinical history of CES. The urgency of the request for imaging was given in 23% of cases. The mean clinical assessment score was 3.7 out of a total of 6. Overall, 2% of scans were positive for CES, 29% had acquired spinal stenosis and 30% had nerve root compression. For patients with CES, 75% had acute neurological signs compared with 68% of the study population. CES patients had a mean clinical history score of 5.3 compared with 3.7 for the study population. Overall, 95% of requests had appropriate MRI safety information. Discussion: this study included 233 patients who underwent specialist assessment and referral for MR imaging for suspected CES. Despite the serious nature of this condition, a large proportion of imaging requests did not have a clear clinical query of CES and the level of urgency was not given, which could potentially lead to a delay in imaging and treatment. Clinical examination was often also incomplete, which can make triaging of patients presenting with similar symptoms challenging. The positive rate for CES was only 2%, much below other studies which had positive rates of 6-40% with a large meta-analysis finding a mean positive rate of 19%. These findings demonstrate an opportunity to improve the quality of imaging requests for suspected CES. This may help to improve patient selection for imaging and result in a positive rate for CES imaging that is more in line with other centres.

Keywords : cauda equina syndrome, acute back pain, MRI, spine

Conference Title : ICNE 2025 : International Conference on Neurology and Epidemiology

Conference Location : New York, United States

Conference Dates : March 17-18, 2025