The need for research prioritization in cervical myelopathy


The authors have undertaken a comprehensive bibliometric analysis of research activity in cervical spondylotic myelopathy (CSM), identifying significant and international growth (especially taking place in Asian countries more recently) and a focus on surgical series. This echoes our own findings, published this year in the Global Spine Journal, in which 79% of papers studied a surgical cohort, with 45% evaluating a surgical technique.2

Chen et al. conclude that more prospective investigations are needed on the timing and choice of surgery. Whilst we agree that many aspects of surgery remain unanswered (such as its optimal timing, its use in multilevel disease, or recurrent cervical myelopathy3), we wonder whether the current focus on surgical technique may represent a research inefficiency: Are there other areas that could offer more substantial scope for outcome improvement?

Chalmers et al. estimated that as much as 85% of the global $240 billion US annual research investment is wasted due to problems with study design, publication bias, and research duplication.4 These were collectively referred to as research inefficiencies.

Arguably our focus on surgical technique may constitute an inefficiency: to date, the synthesised evidence has not demonstrated consistent or substantial benefit for one surgical approach over another in cervical myelopathy,5 yet while this continues to be our focus1,2 important aspects of the condition, such as natural history, etiology, diagnosis, and postoperative recovery6 remain relatively unexplored and largely unknown.7,8

Chalmers et al. have argued that the establishment of consensus on research uncertainties is the solution. Specifically, through the representative engagement of those living and working with a disease, a list of the most important and unanswered research questions relevant to clinical practice can be formed—research focused here has a stronger opportunity to deliver practice-changing information.4

Clinical progress is undoubtedly the objective for clinical researchers in CSM. However, in a common condition that today causes almost universal disability and produces among the poorest quality of life of any chronic disease, this should be as efficient as possible.9

Consequently, with the support of the AOSpine Spinal Cord Injury Knowledge Forum, we have launched the AOSpine RECODE-DCM initiative (Research Elements and Common Data Points for Degenerative Cervical Myelopathy [www.recode-dcm.com]).10 This is an international, multistakeholder consensus process, including spine surgeons but also other healthcare professionals (such as those from primary care, physiotherapy, pain medicine, neurology, and rehabilitation medicine) and people with cervical myelopathy. It aims to establish, the top 10 future research priorities for future cervical myelopathy research, among other objectives.

We hope that this initiative can support the growing and international appetite to improve outcomes in CSM, by aligning the research expertise and endeavoring to explore the top unanswered research questions. The process is ongoing. If you would like to participate and/or collaborate, please get in touch.

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Our CSM article. The exponential growth of research on CSM and to the ethnic propensity of the neurological disorders, can be attributed both to the progress of medical science and to the ethnic propensity of the neurological disorder in the region. Despite the emerging enthusiasm for the research on this disorder, the natural course of CSM and the surgical approach to, and optimal timing of, any intervention for CSM remain elusive.¹

The management of CSM currently trends toward early intervention and to anterior surgical approaches because of better recovery of neurological function and the possibility of preserving spinal mobility.²–⁴ Cervical disc arthroplasty yields excellent clinical outcomes for patients whose CSM was caused by disc herniations and short segments of spondylosis, as well as for patients without ossification of the posterior longitudinal ligament.⁵,⁶ Future investigations should focus on the effects of spinal motion in CSM.⁷,⁸

Collaborative database analyses are advocated because they can take advantage of standardized evaluations and because they can be used to design a prediction model of the long-term outcomes of CSM, since institutional-based studies inevitably have difficulty with long-term follow-up.⁹,¹⁰ Therefore, the principal investigators of RECODE-DCM are to be commended for such an initiative. Projects aiming to organize a multicenter clinical database for CSM to enhance surgical procedures and to improve patients’ recovery should be applauded. More outcome parameters, study end points, and CSM’s long-term clinical effects will thus be anticipated, and the database will capture long-term outcomes and help build a successful risk-prediction model (e.g., evidence-based selection criteria) that can help in the selection of the appropriate candidates for surgery. Furthermore, such database analyses could contribute to building a predictive model for decision support and communication not only for healthcare providers but for patients as well.

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