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Discrepancies Between Radiologist and Spine Surgeon Interpretations of Cervical and Lumbar Stenosis

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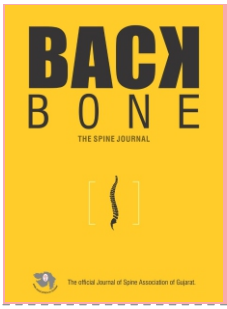
Henceforth, nowadays demonstrated poor interpreter reliability of imaging interpretation between surgeons of various specialties and radiologists for a variety of pathologic conditions. Particularly in spine surgeons' practice Discrepancies in radiologic interpretations can lead to diagnostic frustration and difficulty in formulating treatment plans. Moreover, the third-party payee (insurance party) only relies on documented radiology reports rather than surgeons' independent interpretation of imaging studies (and never reviews the actual images without clinical findings), which can impact insurance authorization for surgery or reimbursement. Ultimately, conflicting Radiological interpretations may negatively impact patient care. The purpose of my letter to the editor and running research design was to evaluate the rate and degree to which radiologists and spine surgeons differ in interpreting magnetic resonance imaging (MRI) studies in the setting of cervical and lumbar spinal stenosis.

Assessment of the MRI:

Magnetic resonance imaging (MRI) is the standard mode of investigation in spine pathology. Stenosis is a disability triggered by a cord or sac compression because of degenerative spine structure changes with its adjacent structure changes. Compression correlates poorly with Quantifiable language and words used for describing compressive pathology in reports aren't standardized. MRI [1] is the tool for assessing the extent of cord or sac compromise or injury [2] and typical features include cord or sac compression, altered cord or signals or MRI myelogram in the lumbar spine, canal stenosis, and altered spinal balancing. Despite an investigation, no standard MRI characteristics consistently representing disease severity in canal stenosis have been found [4], cord or sac compression is considered a stamp of authority, and its extent correlates poorly with severity. This may be due to the dynamic component of injury mechanics being untraceable by MRI protocol [5] or Mechanical stress is the cause of biological differences. Asymptomatic individuals can have a significant cord or sac compression [4, 5]. At present, quantitative measurements such as 'Spinal Cord Occupation Ratio', "Maximum spinal cord compression", 'Transverse Area', 'Compression Ratio', and 'Maximum Canal Compromise' have been used regularly with description. Although their opinions and use of such words, to quantify or qualify the compression are just to provide an objective to the measurements of the cord or sac compression. Standardized terminology exists to describe disc pathology which is a good verse by us, for radiologists aren't! The nomenclature used by radiologists to report cord or sac compromise impact on clinical management gives the surgeon a drive to extend the surgical plan. I think I will plan to do research with aims to 1) identify terminology used for cord or sac compression 2) compare it 3) From asymptomatic cord compression to symptomatic stenotic features are they able to distinguish between them and 4) Rule out either a language or qualifiers influences spine surgeons opinions.

Do qualitative or quantitative features identify spinal compression levels?

Maximum Canal Compromise (MCC), Maximum Spinal Cord Compression' (MSCC) [7]; 'Spinal Cord Occupation Ratio '(SCOR) (3), and 'Compression Ratio' (CR) this four are measurements used to calculate compression based on MRI records I found. These represent the visible compromise and good clinical significance [3]. Greater cord compromise is indicated by a larger MCC, MSCC or SCOR, or smaller CR. Quantitative vocabulary used to understand spinal cord or sac compression are: 'Compress', and 'Indent'. 'Abut', 'Flatten', 'Touch', 'Mould', 'Compromise', 'Contact', 'Displace' 'Distort'



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'Encroach' ..... Qualifier Term Greater, Just, Lesser Degree, Mild, Mild-Moderate, Minimal, Minor ....maximum numbers of MRI shows the canal diameter as a sign of canal stenosis. Which are non-compared to Slandered deviation and which vary from patient to patient according to their age, sex, height, weight from which demographic region they belong, etc...Many variable terms are used in MRI reporting of spinal cord involvement, with the overlap in their quantitative features. For example, the term 'Compressed' = greater quantifiable compromise meaning is inconsistent. Neither qualitative nor quantitative measures of cord or sac involvement correlated with clinical symptoms, despite it generating referral to spinal surgeons. Some relationships are present between radiological reporting of spinal MRI; findings of the clinician by examination clinicians which generate the requirement for MRI to diagnose canal stenosis although the stage of disease and severity can not be specified. Qualitative versus quantitative descriptors are debatable for a longer period for various conditions [8-9]. However, terms chosen by radiologist has no clear guideline or individual meaning. Clinical decision-making depends on radiological reports & their finds. Research shows Radiologist and their reports are better judges that the majority of clinicians [10]. All to gather, research shows suggests that radiologists' choice of language may have unintended effects on patient care. This is consistent with our findings suggesting that language choice may influence non-expert clinicians' decisions about whether to refer patients with canal stenosis. The degree of radiological compromise correlates poorly with disease severity. Patients with cord or sac compression may not suffer from UMN or LMN disease respectively [11] and some patients suffer UMN or LMN diseases without visualized compression due to dynamic injury [5]. Henceforth As the ratio of GP (general physician) to spine specialist is very high in India .They are reliable enough to treat basic family diseases but due to this large gap patients has been already undergone an expensive investigation in the form of an MRI and also informed about the report which was made by radiologist .Hence for the very first consultation the spine surgeon force to see the MRI and not to be evaluated as per the standard protocol and go forward accordingly for the patient profile, this also creates misunderstanding between the GP and Spine Specialist in Indian Scenario. Treating any canal stenosis patient is the work of "BHIM" from "MAHABHARATA" rather than "ARJUNA" who sees a tunnel vision rather than a broad spectrum view.

As Matter of fact, MR imaging cannot currently replace the clinical assessment and vice versa but, notably, interpretation of MRI reports by non-expert clinicians may contribute to false reassurances and variable care. To prevent confusion for non-expert clinicians, descriptive terminology could be removed from reporting and replaced by statements of consistency (or non-consistency) with canal stenosis but further investigation is needed to confirm the value of such an approach. There are, of course, limitations to the conclusions with a lack of data from various centers, and patterns of language likely differ across individual centers, different cities, and countries. Nowadays endoscopy spine is the new sunrise in the world of spine surgery which gives different stories and different tale in a different part of the world, some research article shows that patient underwent endoscopy spine surgery goes for a follow-up MRI after a year shows no signs of surgery, I don't know how things are going to turn in the future.

Conclusion

That disagreements in MRI interpretation between orthopedic spine surgeons and radiologists occur often. The discrepancies were often with some fold, with spine surgeons rating pathology as more severe. why do I hypothesize that? This is due to the spine surgeons also having clinical data, physical examination, and its interpretation and differentials in their mind while interpreting imaging studies. Insurance companies should not only rely on MR imaging and radiologist interpretation but should also be given equal importance to clinicians and clinical findings. I do agree and pushing a thought that doing better research for this problem by doing collaboration of spine surgeon and radiologist, so we can have better reporting of MRI and radiologist can also took in some clinical inputs from surgeons respectively with their expertise.

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Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the Journal. The patient understands that his/her name and initials will not be published, and due efforts will be made to conceal his/her identity, but anonymity cannot be guaranteed.

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