Target Audience: Clinicians, Radiologists

Outcome/Objectives: To highlight examples of where mistakes can be made while interpreting spinal MRI. To emphasize why we need to speak the same language.

Purpose: I have noticed certain types of disc hernias that are "missed" or "misinterpreted" by radiologists. The purpose of this presentation is to provide the learner with an overview of the classification of degenerative disc disease using MRI.

Methods: I conducted a series of interviews with my referring clinicians to ask them their opinions on radiologists' reports with respect to spinal MRIs

Results and Discussion:

This talk may be impossible for the following reasons:

1. There is no clear consensus on what degenerative disc disease actually is or how it can be differentiated from physiologic processes.
2. There is no clear consensus on current MRI classification systems of degenerative disc disease.
3. With spinal MRI interpretation there are problems with intra and inter-observer variability.

Intervertebral discs are pads of fibrocartilage that resist compression while allowing limited movements. Degenerative disc disease is a common process. This process increases with age and is most common in the lower lumbar spine. The highest risk factor appears to be genetic. Other issues such as environmental risk factors and cigarette smoking are also associated with degenerative disc disease. Right now, worldwide, radiologists are reporting on changes of degenerative disc disease on MRI.

My approach is primarily from the clinical perspective. I am a clinical radiologist and reporting spinal MRIs comprises a significant portion of my working day. I have tried to think about what I would have like to have been told when I was starting out on a lifetime of spinal MRI reporting. Issues about language and semantics will be discussed. Pet peeves in MRI reporting will also be discussed. As I perform a large volume of spinal procedures these opinions shall be offered with a certain amount of procedural bias.

In an attempt not to make this topic boring I will divide this half hour talk into three sections as follows:

1. Classification and pet peeves – what is not boring
2. What not to miss – lessons from clinical practice
3. Future

1. In this section I will discuss the various classification systems currently used for the assessment of degenerative disc disease. The Pfirrmann and Modic classification systems will be discussed with an emphasis on clinical relevance and application. An emphasis will be placed on what to include in the report and what the clinician needs to know. The implications of recent studies with relation to disc disease and infection will also be discussed. Pet peeves such as “mild to moderate approaching moderate to severe” and “broad based disc bulges” will be discussed.
2. Humbling lessons from clinical practice will be presented. These include examples of what not to miss on MRI spine reports. A particular emphasis will be placed on what will particularly annoy your referring clinicians. Examples of what “not to miss” shall be presented. I shall discuss common mistakes made while imaging discs on MRI. Examples of unusual disc hernias shall be presented. Examples of why you should speak to your referring surgeons and clinicians will be demonstrated. I shall detail why I feel a weekly imaging review session for your referring surgeons is mandatory for safe clinical practice. A brief discussion of contrast enhanced imaging of the disc is included in this section.
3. In this section I will discuss the future of MRI in the assessment of degenerative disc disease.

Conclusion: In this presentation examples of frequently overlooked and missed disc pathologies are discussed. Special attention is given to missed fragments, foraminal and isointense disc hernias. Several examples of unusual disc hernias are presented. An emphasis is placed on direct communication with the referring clinician.