

MRI Pathology May Be Misleading

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How often does a patient come in with an MRI showing a herniated or extruded disc who has been told they need surgery? Examination may show minimal weakness or even diminished reflexes. The problem is that often, the patient did not receive a functional examination to determine other possible causations or treatments that might help repair the area without surgery.

Structural changes are immediately assumed to be causative from a torn meniscus to a disc herniation to facet degeneration, etc. A significant portion of the population have torn menisci, rotator-cuff and disc lesions, especially as they age. Frequently, rather than the spine being the causative factor, passive and resistive testing of the hip reduplicate the patient's pain.

There is no doubt that MRI is a wonderful diagnostic instrument, but doctors must make sure they provide a clinical examination that emphasizes soft-tissue examination and function before a final decision is made based on structure alone. Regrettably, the rush to surgery based on an MRI occurs too often.

Most sport injuries relating to torn muscles, tendons or narrow cracks in bones do not require an MRI. Most of the time, a careful medical history, examination and simple X-ray is all that is necessary.¹ Dr. James Andrews, a well-known sports orthopedist, recently scanned the shoulders of 31 healthy professional baseball pitchers who were not injured and asymptomatic. MRIs found abnormal shoulder cartilage in 90 percent and abnormal rotator-cuff tendons in 87 percent. Said Dr. Andrews: "If you want an excuse to operate on a pitcher's throwing shoulder, just get an MRI."¹

It is rare to receive a perfectly normal MRI; even if the primary area is normal, the interpreter often seems to find other abnormalities in secondary areas. Scans are often very sensitive, but not specific, so some abnormality is almost always found. Many doctors believe imaging is vastly overused. One of the problems is that scans are very profitable and patients often demand that their doctor take a scan. Increasingly worried about malpractice, doctors may have an MRI scan taken, even though they don't expect to find anything.

In one study,² MRIs were performed on asymptomatic athletes including volleyball players, swimmers, and gymnasts, finding moderate to severe changes in the shoulder labrum, and tendon and cartilage problems at the wrist including carpal tunnel syndrome. A follow-up questionnaire was administered 3-4 years later to determine the clinical significance of the asymptomatic findings. At follow-up interview, only one swimmer and one volleyball player reported experiencing shoulder problems during the study period; one gymnast reported suffering a wrist injury during their career.

Another study (one of many) suggests that MRIs reveal a high prevalence of tears of the rotator cuff in asymptomatic individuals, and that tears are increasingly frequent with advancing age and compatible with normal, painless functional activity. The results of this study emphasize the potential hazards of the use of magnetic resonance imaging scans alone as a basis for the determination of operative intervention in the absence of associated clinical findings.³

Another study suggests overuse of bone scan imaging, abdominal [ultrasound](#) and MRI with regards to diagnosing men with low-risk prostate cancer, resulting in unnecessary patient anxiety and significant economic waste. There was also significant geographic variation in the use of imaging to stage low-risk prostate cancer.

MRI is more sensitive in detecting cancers than mammograms, but it is more likely to find something that turns out not to be cancer (false positive). These false-positive findings have to be checked out to ensure that cancer isn't present, which means coming back for further tests and/or biopsies. This is why MRI is not recommended as a screening test for women at average risk of breast cancer, as it would result in unneeded biopsies and other tests in a large percentage of these women.

While we must appreciate the benefits of new technical methods of examination, it remains true that a complete history / examination, including an adequate clinical functional examination, is the ultimate decision-maker before we recommend more sophisticated testing.

References

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