Argus Orthopaedic Zone

Understanding Orthopaedic Imaging Techniques

By Thomas J. Haverbush, M.D.
Orthopaedic Surgeon

Transforming patient information into patient understanding.

There have been recent articles in the print media and commentary on television and radio about CT scans. Rather than writing only about CT I feel I need to help you understand Imaging in general at least as far as it pertains to Orthopaedic Surgery. I am using all of these entities constantly in my work in treating patients. What I am telling you is from my personal experience.

I told you before I want you to be as smart as a tree full of owls – so here we go.

Imaging Techniques in Orthopaedics

- X-rays sometimes called radiographs
- Computed Axial Tomography or CAT Scan (CT scan)
- Magnetic Resonance Imaging or MRI
  Everyone raise your hand if you knew what MRI stands for. Not too many hands raised as I suspected!
- Arthrography
- Bone Scan
- PET Scan

X-rays

An x-ray or radiograph is the most common imaging method I use in my practice as an Orthopaedic Surgeon. Wilhelm Konrad Rontgen, a German physicist discovered the rays in 1895. He won the Nobel prize in Physics in 1901. You can amaze your friends!

It can show fractures, joint problems such as arthritis, tumors, metal in soft tissues and sometimes fluid in the tissues.

The small amount of radiation used to expose the x-ray film is not harmful to you. (Tell the technician if you are pregnant!) X-ray is the least expensive and fastest imaging technique and can easily be done in our office only taking a few seconds.

The x-rays in our office are done by digital technique so there are no more “films” as such. All images are on a computer monitor.

While the technology has changed greatly the basic x-ray study still has a primary role in diagnosis and treatment.

Key Point: Patients I see often think plain x-rays are outdated. They think an MRI or CT scans have taken the place of regular x-rays and are puzzled to learn I want “regular x-rays” to be done. In my work regular x-rays are almost always needed before any further studies. Further studies are often not needed in many cases. I like to make the decision about what other studies, if any are needed.

CAT Scan

Dogs are envious that cats have had a major x-ray technique named after them. Sorry Rover. A CT scan takes fraction of a second x-rays that pass through a body part at different angles and can be combined in a computer image to provide a cross section view.

It helps me to view complex fractures in bones or joints and other conditions where I need really good bone detail. Soft tissues are visible, but they don’t show up like bones.

You lie on a table that moves into the opening in a large donut structure where the x-ray tube rotates around your body.

CT scans have come under more scrutiny because they do produce more radiation exposure to patients. The use of CT scans has more than tripled since the early 1990s. A recent journal study projected that it increases a person’s risk of getting cancer in future years. It gets somewhat more complicated because doses of radiation vary widely depending on the study and the settings required to get an adequate study.

Despite these concerns I feel CT scans provide great medical benefit and are justified if they are ordered properly. The benefit then far outweighs the risks.

Time is up for this week, but we have a lot more to cover. Please come back to learn more about all the imaging studies I use in trying to help you.

Website and Archive

The new improved office website www.orthopodsurgeon.com has a ton of great information about all the things I treat in the office and hospital.

It also contains the Archive of all Argus Orthopaedic Zone articles I have written for you to date.

Our goal is simple – To help people return to more pain free, functional lives. I specialize in you.

Good health. Good life. All the best to you.

Be well.

Dr. Haverbush