

LIES, DAMN LIES, AND X-RAYS

Orthopedics was not always a surgical specialty. Two hundred years ago the practice of orthopedics treated hip pain with what was called 'mechanics', or the use of alignment, stretching, bracing, casting, convalescence, hot baths, and medication.

Of course there were always surgeons. When a limb had to be amputated, or a dead fetus extracted, the surgeon was called in. And who was the town surgeon? The butcher, of course. The butcher knew more about dissecting bodies than anyone else and therefore was allowed to perform his skills on the living. He was not a physician, however, and thus could not be called "Doctor." Instead, he was called "Mister."

Surgeons eventually became physicians, but still they were not orthopedists. That title belonged to the highly educated professionals who treated musculoskeletal diseases biomechanically. In fact, orthopedists fought ardently throughout the 19th century to keep orthopedics a non-operative practice. "To mingle surgery and mechanics is to endanger both", argued Newton W. Shaffer in 1887.

By the turn of the 20th century, however, the surgeons had prevailed and the first issue of the American Journal of Orthopedic Surgery was published in 1903. Not coincidentally, during this time the age-old degenerative disease known as 'coxalgia' was renamed 'osteoarthritis of the hip', and the focus of treatment shifted from soft-tissue to bones.

Fueling this unnatural transition was the development of the radiograph. Suddenly, doctors could 'see' bones through x-rays whereas previously they had palpated, percussed, auscultated and carefully manipulated soft tissue to gain tremendous insight into the workings of the hip, as well as restore their patients to health.

Consciously or not, the practice of orthopedic surgery slowly forgot what was once known about degenerative hip disease. In place of that lost knowledge was an increasing reliance on imaging studies. Unfortunately, those images helped to fortify a false view of pelvic anatomy.

As soon as radiographs became widely available, patients with hip pain were placed on their back with their legs internally rotated. The x-ray beam is focused

in a very specific way so the resulting image shows the pubic bones fully visible in front, and sit bones that appear to hang down in the back.

These ‘anterior-posterior’ x-rays are then interpreted as if the patient is standing upright. There is no accounting for the fact that in the standing position lumbar curvature causes the pubic bones to rotate underneath the body like straps of a saddle. Nor that the arched roof of the acetabulum, the socket of the hip joint, rotates forward to cover the head of the femur symmetrically from front to back.

A bizarre set of parameters were drawn from two-dimensional landmarks that have no basis in anatomic reality. From a foundation of faulty imaging studies, highly damaging surgeries were developed, which in turn were based on anatomic misconception.

The digital age provided a way to program the existing erroneous anatomic framework into software systems that produce “3D” images of the hip joint. This technology has recently been carried a step further to create “standing” images of the spine, pelvis, and lower limb. Unlike misinterpreted supine x-rays, however, these new standing “3D” radiographs are fraudulently re-constructed to produce images of the pelvis that reflect an archaic, grossly inaccurate view of pelvic anatomy.

Hundreds of thousands of hip surgeries are performed every year in the United States, all of which are based on a view of the pelvis and hip joint that does not exist in nature. Orthopedic surgery’s misunderstanding of human pelvic anatomy is possibly the most egregious mistake ever perpetuated in the history of medicine.