Shoulder Function Not Fully Restored After Surgery

Shoulder motion after rotator cuff surgery remains significantly different when compared to the patient's opposite shoulder, according to Henry Ford Hospital researchers. In the study, researchers used X-rays providing a 3D view of motion of the arm bone in relation to the shoulder blade, compared to motion in the shoulders of 14 patients who had arthroscopic surgical repair of tendon tears and no symptoms in their other shoulders.

Researchers analyzed the motion of both shoulders at three, 12 and 24 months after surgery, looking at changes in shoulder motion and shoulder strength. “Although patient satisfaction is generally very high after surgical repair of a torn rotator cuff, the data suggest that long-term shoulder function – in particular, shoulder strength and dynamic joint stability – may not be fully restored in every patient,” says Michael Bey, Ph.D., director of the Herrick Davis Motion Analysis Lab at Henry Ford Hospital.

“We found that the motion pattern of the repaired shoulder is significantly different than the patient's opposite shoulder,” says Dr. Bey. “These differences in shoulder motion seem to persist over time in some patients.”

According to the American Academy of Orthopedic Surgeons, rotator cuff tears are a common cause of pain and disability among adults, especially among those over age 40. The rotator cuff can be torn from a single injury but most tears result from overuse of the muscles and tendons over years.

Dr. Bey explains that the study findings suggest that restoring normal joint mechanics may not be necessary in order to achieve a satisfactory clinical outcome. “Our study suggests that surgery may restore normal shoulder strength but doesn't necessarily restore normal shoulder motion,” says Dr. Bey. “It could be, however, because the shoulder pain goes away, there is value in surgery.”

The study was done using a high-speed biplane X-ray system, one of only three in the country, which allows researchers to measure the position of bones and joints in the body during motion to within half a millimeter. Next steps for Henry Ford researchers include looking at physical therapy vs. surgery, and investigating improved or different techniques for treating rotator cuff tears.

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