Rugby

The sport of rugby is growing in popularity for players at the high school and collegiate levels.

Rugby matches results in frequent impacts and leveraging forces to the shoulder region during the tackling, scrums, rucks and maul components of the game. Rugby players frequently sustain contusion and impact injuries to the shoulder region, including injuries to the sternoclavicular, acromioclavicular (AC), and glenohumeral (GH) joints. Players assessed during practices and matches should be screened for signs of fracture, cervical spine and brachial plexus injury.

Cervical spine injuries

The risk for sustaining cervical spine injury in rugby may be as high as 13/100 000 per year within certain countries. Although this figure falls within the 'tolerable risk' category (2–100/100 000 per year), mortality and morbidity associated with cervical spine injury exert a major impact on the individual who sustains the injury and on the broader society [1].

For example, in New Zealand, a country where rugby is arguably the premier sport, the lifetime cost for a 20-year-old individual who became quadriplegic was reported to be between $2 and 3 million in the late 1990s [2].

Multiple factors contribute to cervical spine injury in rugby and anatomical and biomechanical (structural) features are relevant. Data from case reports suggest that certain distinctive anatomical features of the cervical spine such as hypermobility of the facet joints, a proportionately small vertebral body size, as well as relatively weak muscle protection constitute an increased risk for injury [3] [4] [5].

Acute cervical spine injury have been extensively studied in high-level contact sports. However, the relation between the appearance of cervical disc disease and the exposure to repeated trauma in such sports as rugby is still unclear. Using clinical and MRI evaluation, Brauge et al. aimed to determine if former professional rugby players had more serious degenerative cervical spine symptoms than the general population.

Two groups, one composed of 101 former rugby players (all men, mean age 40.3 years, range 35-47 years, SD 2.3 years) and the other of 85 male volunteers serving as a control group (mean age 41.6 years, range 35-49 years, SD 4.5 years) were studied. The former rugby players were evaluated on average 5.8 years after retirement (range 1-16 years, SD 3.5 years). The groups were matched in terms of sex, age, job, current sports training, and smoking habits. Each participant received a complete neurological evaluation. Clinical symptoms were evaluated using the Japanese Orthopaedic Association Cervical Myelopathy Evaluation Questionnaire (JOA questionnaire), and chronic neck pain was specifically evaluated using a visual analog scale (VAS) and the Neck Disability Index (NDI). Overall, 25 MRI studies were performed in each group. MRI studies, including dynamic sequences, focused on degenerative lesions (Matsumoto score and canal diameter) and on muscular and medullary morphological analysis.

Significantly more former rugby players than controls complained of chronic neck pain (51 [50.50%] of 101 vs 27 [31.76%] of 85, p = 0.01). Rugby players also had significant reductions of neck mobility. Nevertheless, in those complaining of pain, there was no statistically significant difference between groups with respect to VAS and NDI scores (p = 0.57). On MRI, former rugby players had a narrower

vertebral canal (on average 0.88 ± 0.167 cm vs 0.99 ± 0.130 cm, p = 0.007) and more foraminal stenosis (p = 0.01). No significant difference in the Matsumoto score was found between the 2 groups with respect to other degenerative lesions. Former rugby players had more often undergone surgery for a degenerative condition than had members of the control group (10 cases vs 0 in the control group, p = 0.0021).

A few years after retirement, former professional rugby players seem to have more frequent cervical spine pain and MRI degenerative lesions, such as cervical foraminal stenosis and narrowing of the spinal canal, compared with controls who had not been professional rugby players. A longer evaluation is necessary to determine if these findings persist over time [6].

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