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Unsolved Legal Problems about Radiologic Characteristics of Traumatic Cuff Tears

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Several previous reports analyzed the traumatic cuff tears and stated that patients having a traumatic cuff tear showed better clinical functional scores, pain visual analogue scale, and postoperative range of motion than those having non-traumatic cuff tears.[1,2] Traumatic subscapularis tears were reported more than traumatic supraspinatus tears.[3,4] However, there are few reports assessing the radiological determination of traumatic rotator cuff tears.[5-7]

Nonetheless, opinions have often been demanded whether the rotator cuff tear was due to trauma or not. Some patients would have an insurance which reimburses the medical bills and payments only if the tear was due to traumatic insult.

On clinical aspects, clinicians need studies analyzing the differences of surgical techniques and outcomes in traumatic cuff tears.[8] However, in the medico-legal aspects, radiological findings are required more frequently. In this aspect, the study by Cho et al.[9] could suggest the radiological clue for the traumatic cuff tears. Unfortunately, a perfect study could not be designed to assess the traumatic cuff tears due to intrinsic factors (degenerative process). In that report, the patients under 59 years were included, and in other report,[1] cases under 49 years were included. However, we could not exclude the degenerative pathogenesis for the cases under 49 or 59 years.

The authors analyzed the preoperative magnetic resonance (MR) arthrography of 302 patients who underwent arthroscopic cuff repairs according to traumatic group (61 patients) or non-traumatic group (241 patients). Although the authors could not find an exclusive MR characteristic to define traumatic tear, they could conclude that oblique coronal MR arthrography showed a significantly strong tendency for traumatic tears to have abrupt and rough torn tendon edge (blunt edge).

However, allocation into the traumatic group depended on the patients' statements (medical records). This is prone to have selection bias affecting the results. For example, in workers' compensation, some patients would make a false statement to receive the economic advantage from insurance company. They would insist that injuries were associated with acute onset of pain and rotator cuff tear. To avoid this bias, enrolling only the patients who were not involved in compensation case might made this study better.

Statistically significant differences of the blunt and tapering edge were revealed between groups. However, only 72% had torn tendons with a blunt edge among the traumatic group. This means that the 21% of tears with blunt edge in MRI would be by non-traumatic causes.

The authors enrolled the patients under 60 years to exclude the degenerative tears. That was a good strategy. Excluding the cases having degenerative findings like acromial spur would make this study more conclusive.

Up to now, these results about the blunt edge in MR arthrography cannot be a single factor to define the traumatic tear. Other findings including age, spurs, arthroscopic appearance, should be considered to be applied in the clinical situations. Any multiple regression analysis including several factors might be helpful.

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