

## First-time traumatic anterior shoulder dislocations in young patients

**T**raumatic anterior shoulder dislocations are a relatively common injury, with an incidence rate near 24 per 100 000 person-years.<sup>1</sup> The injury is 2 to 5 times more common in males, with almost half occurring before the age of 30. Between 1990 and 2015, Work-SafeBC saw nearly 6000 shoulder dislocations, with 27.8% occurring in patients age 25 or younger. Surgery has often been reserved for cases of recurrence, but the literature suggests that young patients may benefit from primary surgical stabilization sooner rather than later.

The primary concern with shoulder dislocations in young patients—after acute management—is recurrence. Recurrence rates for young patients range from 54% to 100%.<sup>2-14</sup> The upper limit of what constitutes a “young patient” varies slightly from paper to paper, but it is usually considered to be between the ages of 20 and 25. Recurrence rates decrease as the patient ages; the older the patient, the lower the risk of recurrence—to the point where the recurrence rate is around 6% in patients over 40 years old.<sup>4</sup>

The concern with recurrence is twofold: increased risk of arthropathy, and bony loss necessitating a more invasive surgical stabilization procedure. Radiographic evaluation for degenerative changes at 25 years following initial injury found a prevalence rate of 56%, as compared to approximately 20% in the general population.<sup>15</sup> Shoulders with no recurrence were found to have less arthropathy than those that became stable

over time or were persistently unstable. Patients whose shoulders were surgically stabilized had no difference in terms of moderate or severe degenerative changes compared to solitary dislocators.<sup>15</sup> The second recurrence concern, bony loss, involves both the glenoid and humeral head. Hill-Sach’s lesions—a compression fracture of the posterosuperolateral humeral head—are estimated to occur in 40% to 90% of all primary dislocations and near 100% of recurrent dislocations.<sup>16,17</sup> Sufficient glenoid wear can necessitate a more invasive and complex bony procedure (such as a Latarjet), or can lead to failure of a soft-tissue procedure (such as a Bankart repair) if not recognized. Glenoid insufficiency has been reported in up to 40% of primary dislocations and up to 90% of patients with recurrent shoulder instability.<sup>16,18,19</sup> A quantitative study on glenoid bone loss found an exponential relationship between the degree of anterior glenoid flattening and the number of dislocations.<sup>18</sup>

Because of the high incidence of recurrence in young, first-time traumatic shoulder dislocators, as well as the detrimental effects of recurrence, there is a movement toward primary surgical stabilization. Studies have shown a marked reduction in the recurrence rate when this group of patients is treated with a primary repair compared to conservative management using immobilization techniques.<sup>20-23</sup> There is also evidence for surgically stabilized shoulders having a lower rate of arthropathy, as compared to shoulders with recurrent instability.<sup>15,24</sup> In fact, as mentioned earlier, a 25-year prospective study found stabilized shoulders to have no significant difference from solitary dislocations in terms of moderate/

severe arthropathy, but had appreciably less than shoulders with recurrent instability.<sup>15</sup>

Historically primary traumatic anterior shoulder dislocations have been treated conservatively, and surgical stabilization has often been reserved for cases of recurrence. The data suggest that the cohort of young patients with high-demand activities or occupations may be better served with primary surgical stabilization. As such, patients under age 25 with a first-time traumatic shoulder dislocation should be referred to an orthopaedic shoulder specialist for a discussion regarding the risks and options. Patients under age 20 are the most likely to benefit from primary stabilization.

### For further information or assistance

If you have questions or require assistance with a worker patient, especially one who is less than 25 years of age, with a traumatic anterior shoulder dislocation, please contact a medical advisor in your nearest WorkSafeBC office.

—Derek Smith, MD, FRCS(C)  
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