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The Snapping Tendon

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My point of reference or stimulus for a column is usually from the current literature. This month, I would like to present what is largely an opinion article based on my own personal experience with a relatively common complaint: snapping around a joint. Snapping will be herein differentiated from popping at a joint by the more common description of snapping as a superficially felt sensation. Snapping is generally caused by a tendon and/or bursa. The tendon or bursa may be inflamed, and if so, will often cause painful snapping. If the snapping is more of a nuisance, it is more likely that either an underlying joint looseness is present or some new biomechanical change has occurred causing the tendon to snap.

Common structures and locations include:

- peroneal tendons -- outer ankle
- semimembranosus tendon -- posteromedial knee
- medial plica -- anteromedial knee
- iliotibial band -- outer hip
- iliopsoas -- inner hip/thigh
- biceps femoris tendon -- posterior hip/buttocks
- extensor carpi ulnaris tendon -- outer wrist (forearm pronated)
- biceps tendon -- anterior shoulder
- infraspinatus/teres minor -- posterior shoulder
- levator scapulae -- superior-medial scapula

Most of the above sites include an interposing bursa. Snapping may occur over the bursa or over a bony prominence.

From a general diagnostic standpoint, it would seem important to distinguish between bursa versus tendon

as a cause, however, this is often difficult. Discrete tenderness deep to the tendon may be found if the bursa is inflamed. Distinguishing between a benign, biomechanical versus pathologic snapping is usually possible and helps convey to the patient and answer as to the seriousness of the snapping. Most causes of pathologic snapping are traumatic in origin. For example, constant snapping at the outer ankle subsequent to a major ankle sprain is a strong indicator of rupture of the retinaculum that binds the peroneal tendons down. The same would be true of a new, constant snapping at the ulnar styloid following a fall onto the wrist indicating a rupture of the retinaculum binding the extensor carpi ulnaris down.

When snapping occurs at the biceps tendon, it is often assumed that it is due to dislocation of the biceps tendon caused by tearing of the transverse ligament. It was also assumed that the transverse ligament is the primary restraint to biceps tendon dislocation. However, the primary restraint is the coracohumeral ligament and edges of the subscapularis and supraspinatus tendons.¹ It is rare for these to tear. The snapping is believed to be due primarily to an inflamed biceps tendon snapping over a supratubercular ridge or spur.

Most snapping seems to be movement specific. The movement specific patterns for each are:

- peroneal tendons -- passive or active circumduction of the ankle or resisted eversion
- semimembranosus tendon -- passive or active extension of the knee or resisted knee flexion with knee slightly flexed
- medial plica -- passive or active extension of the knee; most commonly 40 degrees of flexion to full extension
- iliotibial band -- passive or active hip abduction coupled with flexion or extension of the knee
- iliopsoas -- passive or active hip abduction or external rotation
- biceps femoris tendon -- passive or active hip flexion/extension
- extensor carpi ulnaris tendon -- passive or active wrist circumduction or simply ulnar deviation
- biceps tendon -- passive or active abduction of the shoulder with coupled internal and external rotation
- infraspinatus/teres minor -- passive or active internal and external rotation coupled with horizontal adduction (shoulder abducted to 90 degrees or higher)
- levator scapulae -- shrugging of the shoulders coupled with protraction of the scapula

Assuming there is no damage to the supporting structures that bind down tendons to bone, most snapping is due to looseness or tightness and can often be improved by strengthening or stretching the corresponding muscle or other stabilizers around the joint. In performing stretching or strengthening exercises for these

tendons, it is important to avoid the provocative maneuvers or positions.

In some cases, snapping will persist, yet in most cases is no more than a nuisance. Dancers, for example, commonly have iliopsoas snapping over the lesser trochanter or iliopectineal eminence. This is often a result of needed adductor flexibility coupled with repetitive movement. Strengthening of the adductors may reduce the snapping. Iliopsoas snapping is more commonly due to tightness and requires stretching. My personal choice is to use a myofascial release technique. Snapping at the medial/posterior knee is most commonly the semimembranosus tendon and appears to respond more to strengthening and/or biomechanical correction/support through rotational adjusting of the knee and the use of a medial heel wedge. Additionally, I have patients avoid hyperextension maneuvers or postures for several days. If there is an associated bursitis, the snapping may be painful. Treatment of the bursa also includes the above-mentioned biomechanical approaches plus physical therapy to reduce swelling.

When tendon snapping follows major trauma, tearing of support retinacular structures may have occurred and warrants an orthopedic consult if the snapping is either painful or limits function.

References

1. Burkhead WC. The biceps tendon. In: Rockwood CA, Matsen FA (eds.) The Shoulder. WB Saunders, Philadelphia, PA, 1990

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