Medical Coverage Policy | Thermal Capsulorrhaphy as a Treatment of Joint Instability

EFFECTIVE DATE: 02|03|2015
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OVERVIEW
Thermal capsulorrhaphy uses thermal energy to restructure collagen in the capsule or ligaments to reduce the capsule size. This procedure has primarily been evaluated for shoulder joint instability but may also be proposed to treat capsular laxity in other joints.

MEDICAL CRITERIA
Not applicable

PRIOR AUTHORIZATION
Not applicable

POLICY STATEMENT
Medicare Advantage Plans
Thermal capsulorrhaphy is not covered as a treatment of joint instability, including, but not limited to the shoulder, knee, and elbow as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Commercial Products
Thermal capsulorrhaphy is considered not medically necessary as a treatment of joint instability, including, but not limited to the shoulder, knee, and elbow as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

COVERAGE
Benefits may vary between groups and contracts. Please refer to the appropriate section of the Benefit Booklet, Evidence of Coverage, or Subscriber Agreement for applicable not medically necessary/not covered benefits/coverage.

BACKGROUND
Shoulder instability is a relatively common occurrence, reported in between 2% and 8% of the population. The condition may arise from a single traumatic event (i.e., subluxation or dislocation), repeated micro-trauma, or constitutional ligament laxity, resulting in deformity and/or damage to the glenohumeral capsule and ligaments. Shoulder instability may be categorized according to the movement of the humeral head (ie, either anterior, posterior, inferior, or multidirectional instability). Multidirectional instability most frequently consists of anterior and inferior subluxation or dislocation. Inferior movement is also classified as multidirectional.

Initial treatment of shoulder subluxation or dislocation is conservative in nature followed by range of motion and strengthening exercises. However, if instability persists, either activity modifications or surgical treatment may be considered. Activity modification may be appropriate for patients who can identify a single motion that aggravates instability, such as overhead throwing motions. Surgical treatment may be considered in those who are unwilling to give up specific activities (ie, related to sports) or when instability occurs frequently or during daily activities.

Surgery consists of inspection of the shoulder joint with repair, reattachment, or tightening of the labrum, ligaments, or capsule, performed either with sutures or sutures attached to absorbable tacks or anchors. While arthroscopic approaches have been investigated over the past decade, their degree of success has been

controversial due to a higher rate of recurrent instability compared with open techniques, thought to be related in part to the lack of restoration of capsular tension. Recent reports of arthroscopic techniques have described various suturing techniques for tightening the capsule, which require mastery of technically difficult arthroscopic intra-articular knot-tying.

Thermal capsulorrhaphy has been proposed as a technically simpler arthroscopic technique for tightening the capsule and ligaments. The technique is based on the observation that the use of nonablative levels of radiofrequency thermal energy can alter the collagen in the glenohumeral ligaments and/or capsule, resulting in their shrinkage and a decrease in capsular volume, both thought to restore capsular tension. Thermal capsulorrhaphy may be used in conjunction with arthroscopic repair of torn ligaments or other structures (i.e., repair of Bankart or superior labrum anterior and posterior lesion). In addition, thermal capsulorrhaphy has been investigated as an arthroscopic treatment of glenohumeral laxity, a common injury among overhead athletes, such as baseball players, resulting in internal impingement of the posterior rotator cuff against the glenoid labrum. Internal impingement is often accompanied by posterior rotator cuff tearing and labral injury. Thermal capsulorrhaphy has also been proposed as a sole arthroscopic treatment. For example, the technique may be considered in patients with chronic shoulder pain without recognized instability, based on the theory that the pain may be related to occult or microinstability. This diagnosis may be considered when a diagnostic arthroscopy reveals only lax ligaments and is commonly seen among baseball players. Finally, thermal capsulorrhaphy may be considered in patients with congenital ligamentous laxity, such as Ehlers-Danlos or Marfan syndrome.

While thermal capsulorrhaphy was initially investigated using laser energy, the use of radiofrequency probes is now more commonly employed. Devices include Oratec® ORA-50 Monopolar RF Generator (Oratec Interventions, Menlo Park, CA) and ArthroCare® (ArthroCare, Sunnyvale, CA).

The literature does not support use of thermal capsulorrhaphy. The few available comparative studies do not support that this procedure is an efficacious treatment for shoulder instability. The case series report a high rate of unsatisfactory results and complications, raising the potential for a net harm. Because of the lack of efficacy and potential for harm, this procedure is considered not medically necessary.

CODING

Medicare Advantage Plans and Commercial Products

As there is no specific CPT code(s) available for the use of thermal capsulorrhaphy in the ankles, knees, hip, wrist, or elbow, the following unlisted code should be used:

29999 Unlisted procedure, arthroscopy

The following HCPCS code is not covered for Medicare Advantage Plans and not medically necessary for Commercial Products:

S2300 Arthroscopy, shoulder, surgical; with thermally-induced capsulorrhaphy

RELATED POLICIES

Unlisted Procedures

PUBLISHED

Provider Update, March 2026
Provider Update, April 2025
Provider Update, April 2024
Provider Update, April 2023
Provider Update, July 2022

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