KAISER PERMANENTE®

Kaiser Foundation Health Plan of Washington

Clinical Review Criteria
Ultrasound Guided Percutaneous Needle Release of Carpal Tunnel

Criteria

For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	None
Local Coverage Article	None
Kaiser Permanente Policy	Due to the absence of a NCD, LCD, or other coverage guidance, Kaiser Permanente has chosen to use their own Clinical Review Criteria, “Ultrasound Guided Percutaneous Needle Release of Carpal Tunnel” for medical necessity determinations. Use the Non-Medicare criteria below.

For Non-Medicare Members

There is insufficient evidence in the published medical literature to show that this service/therapy is as safe as standard services/therapies (and/or) provides better long-term outcomes than current standard services/therapies.

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background

Carpal tunnel syndrome (CTS) is a neuromuscular clinical condition caused by compression or irritation of the median nerve where it passes under the transverse carpal ligament in the wrist. Thickening of tendon sheaths or encroachment by other structures lead to a sustained rise in pressure within the canal. The pressure is further increased by flexion or extension of the wrist. The incidence of CTS in the United States has been estimated at 1-3 cases per 1,000 subjects per year, with a prevalence of 50 cases per 1,000 per year. CTS is more common in individuals 45-65 years of age and among females. The etiology of the syndrome is not well known and continues to be debated. It is believed that it may have a hereditary component and that physical occupational activity such as repeated and forceful movement of the hand and wrist or the use of handheld powered vibratory tools can predispose to the condition. Other predisposing causes included rheumatoid arthritis, pregnancy, obesity, and hypothyroidism (Nathan 2005, Verdugo 2008, Bickel 2010, Palmer 2011, Page 2013).

The most common symptoms of carpal tunnel syndrome are pain, tingling, and numbness within the median nerve distribution of the hand (thumb, index and middle, and radial half of the ring finger). Pain may radiate to the arm and is often worse at night and when gripping an object for a long duration of time. In advanced stages, thenar muscle weakness can occur. Based on symptoms alone, the British Society for Surgery of the Hand has classified carpal tunnel syndrome into mild, moderate and severe. In mild carpal tunnel syndrome, there is intermittent paresthesia which may be nocturnal or associated with certain hand positions or conditions such as pregnancy or

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hypothyroidism. In moderate carpal tunnel syndrome, there is constant paresthesia which interferes with activities of daily living and wakes the patients from sleep. It is associated with reversible numbness and/or pain. Severe cases have constant numbness or pain associated with weakness and/or wasting of the thenar muscles, but with small risk of damage to the nerve (McCartan 2012, Page 2013).

Carpal tunnel syndrome may be treated by surgical or non-surgical approaches. Non-surgical treatments are usually offered to patients with intermittent symptoms of mild to moderate CTS. These include the use of wrist splints, local steroid injections, oral steroid therapy, activity modification, ergonomic modification, or therapeutic ultrasound. The more severe or refractory cases may require surgical decompression of the median nerve. Surgery involves complete division of the flexor retinaculum to release the median nerve and can be performed through a number of different techniques as the standard open carpal tunnel release, the mini-open release, and the endoscopic carpal tunnel decompression. Each technique has its advantages and drawbacks (McCartan 2012, Figaro 2012, Page 2013).

The standard open carpal tunnel release (O-CTR), the oldest and most commonly used technique, involves releasing the flexor retinaculum under direct vision to ensure a complete release. The procedure is safe and simple, but is associated with painful and sensitive scars, decrease in grip strength, and long healing time. A less aggressive mini-open release (mini-OCTR) involves division of the retinaculum with limited access through a 1-1.5 cm incision at the distal wrist crease and the use of specially developed instruments. Carpal tunnel release can also be performed endoscopically (E-CTR) using single or double portal techniques to visualize the under surface of the flexor retinaculum and guide the surgeon's knife. The mini-open or endoscopic techniques cause less tissue trauma, have a smaller scar, less postoperative pain, faster recovery, and conserves the grip strength. However, these techniques with their limited approaches are associated with decreased visualization of the median nerve and its terminal branches (thenar muscular branch and palmar branch, vascular structures, and anatomic variations, all of which may increase the risk of neurovascular injury during the procedure. In addition, these techniques may carry the risk of incomplete release of the flexor retinaculum as a result of poor visualization, leading to persistent symptoms. (McCartan 2012, Nakamichi 2010, de la Fuente 2012).

Mini-open carpal tunnel release (Mini-OCTR) and percutaneous carpal tunnel release using ultrasonographic guidance are recently developed surgical techniques that allow combining the advantages of both the O-CTR and mini-OCTR i.e. the direct visualization of all the key anatomic structures including the variants together with the small incision. The size of the incision with percutaneous carpal tunnel release is 0.4-0.6 cm compared to 1-2 cm for the mini, and >4cm for the classic carpal tunnel release. These newly developed techniques may potentially lead to the same neurological and functional outcomes as O-CTR but with less scar sensitivity and pain, and better grip strength. The sonographically guided percutaneous needle technique is office-based and performed under local anesthetic. However, not all patients are legible for the procedure, and the results of hand surgeries performed under ultrasonography depend on the surgeon's experience with ultrasound, which is known to be examiner dependent, and involves a learning curve and interobserver variation in interpretation. In addition, there are many unanswered questions as regards the contraindications to the percutaneous procedure, the release extent at the deepest layer portions, best approach, best location, and best advancing direction of the instrument (Nakamichi 2010, de la Fuente 2012, McShane 2012, Rojo –Manuaute 2013).

Medical Technology Assessment Committee (MTAC)

Ultrasound Guided Percutaneous Needle Release of Carpal Tunnel

08/19/2013: MTAC REVIEW

Evidence Conclusion: There is a lack of published literature on ultrasound-guided percutaneous release of the carpal tunnel for individuals with carpal tunnel syndrome. The larger of two published studies to date, was a small non-randomized observational study that compared the outcomes of percutaneous carpal tunnel release vs. mini-open surgical release performed under ultrasonographic guidance. The technique was not compared to the standard open surgery, and the patients were not randomized to the procedures but were assigned to one versus the other according to the orthopedist's discretion based primarily on the safe zone that varied between the study participants and also on the patient's preference. In conclusion, there is insufficient published evidence to determine the efficacy and safety ultrasound-guided percutaneous release of the carpal tunnel for individuals with carpal tunnel syndrome.

Articles: The published literature on ultrasound-guided percutaneous release of the carpal tunnel is very limited. The search revealed only one nonrandomized study that compared the technique with mini-OCTR both performed under ultrasonographic guidance, and a very small retrospective case series with 17 patients. The following study was selected for critical appraisal: Nakamichi K, Tachibana S, Yamamoto S, et al. Percutaneous carpal tunnel

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release compared with mini-open release using ultrasonographic guidance for both techniques. *J Hand Surg Am*. 2010; 35:437-445. See Evidence Table

Ultrasound Guided Percutaneous Needle Release of Carpal Tunnel did not pass the *Kaiser Permanente Medical Technology Assessment Criteria*.

Applicable Codes

Considered Not Medically Necessary:

CPT® or HCPC Codes	Description
76942	Ultrasonic guidance for needle placement (e.g., biopsy, aspiration, injection, localization device), imaging supervision and interpretation
With Diagnosis Codes	
G56.00	Carpal tunnel syndrome, unspecified upper limb
G56.01	Carpal tunnel syndrome, right upper limb
G56.02	Carpal tunnel syndrome, left upper limb
G56.03	Carpal tunnel syndrome, bilateral upper limbs

***Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

****To verify authorization requirements for a specific code by plan type, please use the **Pre-authorization Code Check**.

Date Created	Dates Reviewed	Date Last Revised
10/01/2013	10/01/2013[MPC], 08/05/2014[MPC],06/02/2015[MPC], 04/05/2016[MPC], 02/07/2017[MPC], 12/05/2017[MPC], 11/06/2018[MPC], 11/05/2019[MPC], 11/03/2020[MPC], 11/02/2021[MPC], 11/01/2022[MPC], 11/07/2023[MPC]	11/06/2018

[MPC] Medical Policy Committee

Revision History	Description
09/08/2015	Revised LCD L35008
11/06/2018	Added language to use Kaiser Permanente criteria for Medicare members.

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