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OVERVIEW

Surgery and radiotherapy for breast cancer can lead to lymphedema and is one of the most common causes of secondary lymphedema. There is no cure for lymphedema. However, physiologic microsurgical techniques such as lymphaticovenular anastomosis or vascularized lymph node transfer have been developed that may improve lymphatic circulation thereby decreasing symptoms and risk of infection.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

BlueCHiP for Medicare

Lymphatic physiologic microsurgery to treat lymphedema (including, but not limited to, lymphatico-lymphatic bypass, lymphovenous bypass, lymphaticovenous anastomosis, autologous lymph node transplantation, and vascularized lymph node transfer) in individuals who have been treated for breast cancer is not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Lymphatic physiologic microsurgery performed during nodal dissection or breast reconstruction to prevent lymphedema (including, but not limited to, the Lymphatic Microsurgical Preventing Healing Approach) in individuals who are being treated for breast cancer is not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Commercial Products

Lymphatic physiologic microsurgery to treat lymphedema (including, but not limited to, lymphatico-lymphatic bypass, lymphovenous bypass, lymphaticovenous anastomosis, autologous lymph node transplantation, and vascularized lymph node transfer) in individuals who have been treated for breast cancer is considered not medically necessary as the evidence is insufficient to determine the effects of the technology on health outcomes.

Lymphatic physiologic microsurgery performed during nodal dissection or breast reconstruction to prevent lymphedema (including, but not limited to, the Lymphatic Microsurgical Preventing Healing Approach) in individuals who are being treated for breast cancer is considered not medically necessary, as the evidence is insufficient to determine the effects of the technology on health outcomes.

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 surgery and not medically necessary/not covered benefits/coverage.

BACKGROUND

Lymphedema is an accumulation of fluid due to disruption of lymphatic drainage. Lymphedema can be caused by congenital or inherited abnormalities in the lymphatic system (primary lymphedema) but is most often caused by acquired damage to the lymphatic system (secondary lymphedema).

A diagnosis of secondary lymphedema is based on history (eg, cancer treatment, trauma) and physical examination (localized, progressive edema and asymmetric limb measurements) when other causes of edema can be excluded. Imaging, such as magnetic resonance imaging, computed tomography, ultrasound, or lymphoscintigraphy, may be used to differentiate lymphedema from others causes of edema in diagnostically challenging cases.

Breast cancer treatment is one of the most common causes of secondary lymphedema. Both the surgical removal of lymph nodes and radiotherapy are associated with development lymphedema in patients with breast cancer.

In a systematic review of 72 studies (N=29,612 women), DiSipio et al (2013) reported that approximately 1 in 5 women who survive breast cancer will develop arm lymphedema. Reviewers reported that risk factors for development of lymphedema that had a strong level of evidence were extensive surgery (ie, axillary-lymph-node dissection, greater number of lymph nodes dissected, mastectomy) and being overweight or obese.

Early and ongoing treatment of lymphedema is necessary. Conservative therapy may consist of several features depending on the severity of the lymphedema. Patients are educated on the importance of self-care including hygiene practices to prevent infection, maintaining ideal body weight through diet and exercise, and limb elevation. Compression therapy consists of repeatedly applying padding and bandages or compression garments. Manual lymphatic drainage is a light pressure massage performed by trained physical therapists or by patients designed to move fluid from obstructed areas into functioning lymph vessels and lymph nodes. Complete decongestive therapy is a multiphase treatment program involving all of the previously mentioned conservative treatment components at different intensities. Pneumatic compression pumps may also be considered as an adjunct to conservative therapy or as an alternative to self-manual lymphatic drainage in patients who have difficulty performing self-manual lymphatic drainage. In patients with more advanced lymphedema after fat deposition and tissue fibrosis has occurred, palliative surgery using reductive techniques such as liposuction may be performed.

For individuals who have breast cancer-related secondary lymphedema who receive physiologic microsurgery to treat lymphedema along with continued conservative therapy, the evidence includes an RCT, observational studies, and systematic reviews. Relevant outcomes are symptoms, morbid events, functional outcomes, health status measures, quality of life, resource utilization, and treatment-related morbidity. Several physiologic microsurgeries have been developed; examples include lymphaticovenular anastomosis and vascularized lymph node transfer. No RCTs of lymphaticovenular anastomosis or similar surgeries involving the venous system were identified. One RCT of vascularized lymph node transfer with 36 participants has been conducted. Systematic reviews have indicated that the preponderance of the available evidence comes from single-arm clinical series from individual institutions. Surgical technique, outcomes metrics, and follow-up time have varied across these studies. These types of studies might be used for preliminary estimates of the amount of volume reduction expected from surgery, the durability of the reduction in volume, and the rates of adverse events. However, these studies are not adequate for determining the comparative efficacy of physiologic microsurgery vs conservative treatment or decongestive therapy, or the comparative efficacy of different microsurgery techniques. RCTs are needed. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who are undergoing lymphadenectomy for breast cancer who receive physiologic microsurgery to prevent lymphedema, the evidence includes an RCT, observational studies, and systematic

reviews. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. Lymphatic Microsurgical Preventing Healing Approach is a preventive lymphaticovenular anastomosis performed during nodal dissection. One RCT including 46 patients has been conducted. The trial reported that lymphedema developed in 4% of women in the Lymphatic Microsurgical Preventing Healing Approach group and 30% in the control group by 18 months of follow-up. Longer follow-up is needed to observe incident lymphedema occurring after 18 months and assess the durability of the procedure. The trial methods of randomization and allocation concealment were not described and there was no sham procedure or blinding, potentially introducing bias. The remaining evidence consists of 2 controlled observational studies with inadequate description of control selection and uncontrolled studies. The evidence is insufficient to determine the effects of the technology on health outcomes. Therefore, these services are not covered for BlueCHiP for Medicare and not medically necessary for Commercial products.

CODING

BlueCHiP for Medicare and Commercial Products

There is no specific CPT code for this procedure; therefore providers should report this service with unlisted procedure code, 38999 (Unlisted procedure, hemic or lymphatic system)

RELATED POLICIES

None

PUBLISHED

Provider Update, July 2019

REFERENCES:

1. International Society of Lymphology Executive Committee. The Diagnosis and Treatment of Peripheral Lymphedema: 2016 Consensus Document of the International Society of Lymphology. 2016; <https://journals.uair.arizona.edu/index.php/lymph/article/view/20106>. Accessed May 23, 2018.
2. DiSipio T, Rye S, Newman B, et al. Incidence of unilateral arm lymphoedema after breast cancer: a systematic review and meta-analysis. *Lancet Oncol*. May 2013;14(6):500-515. PMID 23540561
3. Pusic AL, Cemal Y, Albornoz C, et al. Quality of life among breast cancer patients with lymphedema: a systematic review of patient-reported outcome instruments and outcomes. *J Cancer Surviv*. Mar 2013;7(1):83-92. PMID 23212603
4. Leung N, Furniss D, Giele H. Modern surgical management of breast cancer therapy related upper limb and breast lymphoedema. *Maturitas*. Apr 2015;80(4):384-390. PMID 25747119
5. Cornelissen AJM, Beugels J, Ewalds L, et al. The effect of lymphaticovenous anastomosis in breast cancer-related lymphedema: a review of the literature. *Lymphat Res Biol*. Jan 22 2018. PMID 29356596
6. Scaglioni MF, Fontein DBY, Arvanitakis M, et al. Systematic review of lymphovenous anastomosis (LVA) for the treatment of lymphedema. *Microsurgery*. Nov 2017;37(8):947-953. PMID 28972280
7. Carl HM, Walia G, Bello R, et al. Systematic review of the surgical treatment of extremity lymphedema. *J Reconstr Microsurg*. Jul 2017;33(6):412-425. PMID 28235214
8. Salgarello M, Mangialardi ML, Pino V, et al. A prospective evaluation of health-related quality of life following lymphaticovenular anastomosis for upper and lower extremities lymphedema. *J Reconstr Microsurg*. Apr 24 2018. PMID 29689576
9. Ozturk CN, Ozturk C, Glasgow M, et al. Free vascularized lymph node transfer for treatment of lymphedema: A systematic evidence based review. *J Plast Reconstr Aesthet Surg*. Sep 2016;69(9):1234-1247. PMID 27425000
10. Demiri E, Dionyssiou D, Tsimponis A, et al. Donor-site lymphedema following lymph node transfer for breast cancer-related lymphedema: a systematic review of the literature. *Lymphat Res Biol*. Feb 2018;16(1):2-8. PMID 29087763

11. Dionyssiou D, Demiri E, Tsimponis A, et al. A randomized control study of treating secondary stage II breast cancer-related lymphoedema with free lymph node transfer. *Breast Cancer Res Treat.* Feb 2016;156(1):73-79. PMID 26895326
12. Nguyen AT, Suami H, Hanasono MM, et al. Long-term outcomes of the minimally invasive free vascularized omental lymphatic flap for the treatment of lymphedema. *J Surg Oncol.* Jan 2017;115(1):84-89. PMID 27439587
13. Ciudad P, Agko M, Perez Coca JJ, et al. Comparison of long-term clinical outcomes among different vascularized lymph node transfers: 6-year experience of a single center's approach to the treatment of lymphedema. *J Surg Oncol.* Nov 2017;116(6):671-682. PMID 28695707
14. Gennaro P, Gabriele G, Salini C, et al. Our supramicrosurgical experience of lymphaticovenular anastomosis in lymphoedema patients to prevent cellulitis. *Eur Rev Med Pharmacol Sci.* Feb 2017;21(4):674-679. PMID 28272717
15. Cemal Y, Pusic A, Mehrara BJ. Preventative measures for lymphedema: separating fact from fiction. *J Am Coll Surg.* Oct 2011;213(4):543-551. PMID 21802319
16. Armer JM. The problem of post-breast cancer lymphedema: impact and measurement issues. *Cancer Invest.* Mar 2005;23(1):76-83. PMID 15779870
17. Armer JM, Stewart BR. A comparison of four diagnostic criteria for lymphedema in a post-breast cancer population. *Lymphat Res Biol.* Dec 2005;3(4):208-217. PMID 16379589
18. Petrek JA, Senie RT, Peters M, et al. Lymphedema in a cohort of breast carcinoma survivors 20 years after diagnosis. *Cancer.* Sep 15 2001;92(6):1368-1377. PMID 11745212
19. Jorgensen MG, Toyserkani NM, Sorensen JA. The effect of prophylactic lymphovenous anastomosis and shunts for preventing cancer-related lymphedema: a systematic review and meta-analysis. *Microsurgery.* Mar 28 2017. PMID 28370317
20. Boccardo FM, Casabona F, Friedman D, et al. Surgical prevention of arm lymphedema after breast cancer treatment. *Ann Surg Oncol.* Sep 2011;18(9):2500-2505. PMID 21369739
21. Hahamoff M, Gupta N, Munoz D, et al. A lymphedema surveillance program for breast cancer patients reveals the promise of surgical prevention. *J Surg Res.* Feb 1 2018. PMID 29397949
- [22] National Lymphedema Network Medical Advisory Committee. The Diagnosis and Treatment of Lymphedema. Position Statement of the National Lymphedema Network 2011; <https://www.lymphnet.org/pdfDocs/nlntreatment.pdf>. Accessed May 23, 2018.
- [23] Scaglioni MF, Arvanitakis M, Chen YC, et al. Comprehensive review of vascularized lymph node transfers for lymphedema: Outcomes and complications. *Microsurgery.* Feb 2018;38(2):222-229. PMID 27270748

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