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Originated Department	Medical Management

Treatment of Congenital Hemangiomas (Port Wine Stains)

Audience
Providers, Members, Brokers, MHC

Purpose

Medical policies provide general support for applying Mountain Health Co-Op member policy document coverage decisions, and the member-specific benefit plan document must be referenced. The terms of the member-specific Policy document may differ from the standard benefit plan based on this medical policy. If there is a conflict between a member-specific policy document and the Mountain Health Co-Op medical policy, the document supersedes this policy. Any person(s) applying this medical policy must identify member eligibility, the member-specific policy document, and related policies or guidelines before applying this medical policy, including the existence of any state or federal guidance. Mountain Health Co-Op medical policies are designed for informational purposes only and are not an authorization, explanation of benefits, or contract. Receipt of benefits is subject to the satisfaction of all terms and conditions of the member-specific policy document coverage. Mountain Health Co-Op reserves the sole discretionary right to modify all policies and guidelines at any time.

Definition

Port wine stain (PWS), a congenital malformation, begins as a pale pink flat area (macular lesion) in childhood. As the patient ages, the stain grows commensurately. The abnormal blood vessels within the PWS become progressively more dilated in size, which results in the lesion becoming dark purple and elevated in some instances. Nodules and hypertrophy may develop in the soft tissue underlying the PWS. Nodules may continue to grow and begin to bleed easily if traumatized.

Common areas where PWS appears are on the face over the regions of the first and second trigeminal nerves and the eyes or mouth. Also, it is not uncommon to see a PWS overlying an arteriovenous, arterial, or venous malformation. Port wine stains in these locations would require the physician to look beyond the skin for any underlying problem. Port wine stain has the distinction of persisting into adult life and is associated with systemic abnormalities such as glaucoma.

Treatment of a PWS in its macular stage will prevent the development of the hypertrophic component of the lesion. Laser treatment of a PWS diminishes the existing blood vessels, making them smaller and smaller in number. Therefore, the progression of these lesions to a more advanced size is less likely to occur.

Policy/Procedure

1. **Mountain Health Co-Op covers laser treatment of port wine stains when the treatment aims to resolve the lesion in a potentially functionally important area in limited circumstances.**
   - **1.1** Areas considered of functional importance by the plan are as follows when either A or B are present AND C:
     - **a)** The genitals.
     - **b)** The facial triangle is enclosed by the ears and the chin. AND
     - **c)** The port wine stain area is used to resolve a functional problem associated with pain, discomfort, or bleeding.
   - **1.2** **Mountain Health Co-Op does NOT cover laser treatment of port wine stains for cosmetic or psychological reasons.** Use for cosmetic or psychological reasons falls under the plan's cosmetic exclusion of coverage.

2. **Clinical Rationale**
   - **2.1** The pulsed dye laser delivers energy at a wavelength and duration that has been optimized for the selective treatment of vascular lesions. It has been used to treat warts, port wine stains, hemangiomas, hypertrophic scars, and telangiectasias. Pulsed dye lasers have also been used as an alternative to surgical excision or carbon dioxide lasers.
   - **2.2** The Food and Drug Administration (FDA) has cleared the pulsed-dye laser to treat warts, port-wine stains, hemangiomas, hypertrophic scars, and telangiectasias. The pulsed-dye laser effectively treats facial and neck glomangiomas, as surgical excision may not be practical in these cosmetically sensitive areas. The pulsed-dye laser has also been effective in removing pyogenic granulomas in cosmetically sensitive face and neck areas.
   - **2.3** A 2018 study (Zhu et al.) found that Port-wine stains (PWS) affect 0.3 to 0.5% of newborns, and pulsed dye laser (PDL) remains the treatment of choice. This study is designed to evaluate whether more frequent PDL treatments in infantile patients would achieve further lightening of erythema. We prospectively investigated 20 infants with PWS. Two adjacent sites were treated for a 12-week duration and randomly allocated to be treated for seven sessions at 2-week intervals or three sessions at 6-week intervals. The efficacy outcome 2 months after the final

treatment was determined by visual and chromameter evaluation. Sixteen patients completed the study with a total of 54 treatment sites. Similar results were observed in the two groups. The average blanching rates were 42.93% (SD = 27.92%) and 43.81% (SD = 32.80%) for PDL treatments with seven and three sessions, respectively ($p = 0.374$). Partial recovery from the laser treatment was more frequently observed, and side effects were significantly higher at 2-week follow-ups ($p < 0.001$), resulting in a total of 3-13 weeks for skin recovery. More frequent PDL treatments do not necessarily increase efficacy in infantile PWS patients. Considering the potential risks and added costs, this practice may not be of benefit.

2.4 In a randomized comparison study (Yu et al., 2018), the efficacy and safety of double-pass pulsed dye laser (DWL) and single-pass PDL (SWL) in treating virgin port wine stains (PWS) were compared. The increase in the extent of vascular damage attributed to using double-pass techniques for PWS remains inconclusive. Twenty-one patients (11 flat PWS, 10 hypertrophic PWS) with untreated PWS underwent 3 treatments at 2-month intervals. Each PWS was divided into three treatment sites:

2.5 SWL, DWL, and untreated control. Chronometric and visual evaluation of the efficacy and evaluation of side effects was conducted 3 months after the final treatment. Biopsies were taken at the treated sites immediately post-treatment. Chronometric and visual evaluation suggested that DWL sites showed no significant improvement compared with SWL ($p > 0.05$) in treating PWS. The mean depth of photothermal damage to the vessels was limited to a maximum of 0.36-0.41 mm in both SWL and DWL sides. Permanent side effects were not observed in any patients. In conclusion, Double-pass PDL does not enhance PWS clearance. To improve the clearance of PWS lesions, the depth of laser penetration should be increased, or more significant photothermal damage to vessels should be generated.

Applicable Coding

CPT Codes

17106 Destruction of cutaneous vascular proliferative lesions (eg, laser technique); less than 10 sq cm

17107 Destruction of cutaneous vascular proliferative lesions (eg, laser technique); 10.0 to 50.0 sq cm

17108 Destruciton of cutaneous vascular proliferative lesions (eg, laser technique); over 50.0 sq cm

HCPCS Codes

No applicable codes

Vendors

- **Personify**
- **HPS**

References

1. Ashinoff, R. and Geronemus, R.G., 1991. Flashlamp-pumped pulsed dye laser for port-wine stains in infancy: earlier versus later treatment. Journal of the American Academy of Dermatology, 24(3), pp.467-472.
2. Brauer, J.A. and Geronemus, R.G., 2013. Laser treatment in the management of infantile hemangiomas and capillary vascular malformations. Techniques in vascular and interventional radiology, 16(1), pp.51-54.
3. Brightman, L.A., Geronemus, R.G. and Reddy, K.K., 2015. Laser treatment of port-wine stains. Clinical, cosmetic and investigational dermatology, 8, p.27.
4. Chowdhury MM, Harris S, Lanigan SW. Potassium titanyl phosphate laser treatment of resistant port-wine stains. Br J Derm 2001;144:814-17
5. Cordoro, K.M. and Frieden, I.J., 2010. Pulsed dye laser for port wine stains. Journal of the American Academy of Dermatology, 62(6), pp.1065-1066.
6. Enjolras O. Vascular malformations. In: Bolognia JL, Jorizzo JL, Rapini RP, senior editors. Horn TD, Mascaro JM, Saurat JH, Mancini AJ, Salasche SJ, Stingl G, editors. Dermatology. London: Mosby; 2003. p. 1615-29.
7. Food and Drug Administration (FDA), 510(k) #K033461, Premarket Notification 'Candela VBeam Pulse Dye Laser System" 2004.
8. Gupta G, Bilsland D. A prospective study of the impact of laser treatment on vascular lesions. Br J Derm 2000;143:356-59
9. Hohenleutner S, Badur-Ganter E, Landthaler M, et al. Long-term results in the treatment of childhood hemangioma with the flashlamp-pumped pulsed dye laser: An evaluation of 617 cases. Lasers Surg Med. 2001;28(3):273-277
10. Izikson, L., Nelson, J.S. and Anderson, R.R., 2009. Treatment of hypertrophic and resistant port wine stains with a 755 nm laser: a case series of 20 patients. Lasers in Surgery and Medicine: The Official Journal of the American Society for Laser Medicine and Surgery, 41(6), pp.427-432.
11. Katugampola GA, Lanigan SW. Five years' experience of treating port wine stains with the flashlamp-pumped pulsed dye laser. Br J Dermatol. 1997;137(5):750-754.
12. McClean K, Hanke CW. The medical necessity for treatment of port-wine stains. Dermatol Surg. 1997;23(8):663-667.
13. Ortiz, A.E. and Nelson, J.S., 2012. Port-wine stain laser treatments and novel approaches. Facial plastic surgery: FPS, 28(6), pp.611-620.
14. Scherer K, Lorenz S, Wimmershoff M, et al. Both the flashlamp-pumped dye laser and the long-pulsed tunable dye laser can improve results in port-wine stain therapy. Br J Derm 2001;145:79-84
15. Shahriari, M., Makkar, H. and Finch, J., 2015. Laser therapy in dermatology: Kids are not just little people. Clinics in dermatology, 33(6), pp.681-686.
16. Stier, M.F., Glick, S.A. and Hirsch, R.J., 2008. Laser treatment of pediatric vascular lesions: Port wine stains and hemangiomas. Journal of the American Academy of Dermatology, 58(2), pp.261-285.
17. Updyke, K. M. and A. Khachemoune (2017). "Port-Wine Stains: A Focused Review on Their Management." J Drugs Dermatol 16(11): 1145-1151.

18. UpToDate® (2022) “Capillary malformations (port wine stains) and associated syndromes”. Literature current through: August 2022. Last topic update: March 24, 2022. Topic 13726.
Version 27.0. www.uptodate.com
19. UpToDate® (2022) “Infantile hemangiomas: Management”. Literature current through: August 2022. Last topic update: November 9, 2021. Topic 5792. Version 49.0. Accessed September 9, 2022. www.uptodate.com
20. Van Raath, M.I., Chohan, S., Wolkerstorfer, A., Van der Horst, C.M.A.M., Storm, G. and Heger, M., 2019. Port wine stain treatment outcomes have not improved over the past three decades. Journal of the European Academy of Dermatology and Venereology, 33(7), pp.1369-1377.
21. Yu, W., et al. (2018). "Double Pass 595 nm Pulsed Dye Laser Does Not Enhance the Efficacy of Port Wine Stains Compared with Single Pass: A Randomized Comparison with Histological Examination." Photomed Laser Surg.
22. Yu, W., Ma, G., Qiu, Y., Chen, H., Jin, Y., Yang, X., Chang, L., Wang, T., Hu, X., Li, W. and Lin, X., 2015. Prospective comparison treatment of 595-nm pulsed-dye lasers for virgin port-wine stain. British Journal of Dermatology, 172(3), pp.684-691.
23. Zhu, J., et al. (2018). "Less is more: similar efficacy in three sessions and seven sessions of pulsed dye laser treatment in infantile port-wine stain patients." Lasers Med Sci.

Review/Revision/Approval History	
Date	Description
06/01/2024	**New Policy**
3/16/2026	**Revised by Mountain Health CO-OP Policy Committee**

Disclaimer

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