HEALTH PLANS
UNIVERSITY OF UTAH

Medical Policy

Treatment of Congenital Hemangiomas (Port Wine Stains)

Policy MP-014

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Disclaimer:

1. Policies are subject to change in accordance with State and Federal notice requirements.
2. Policies outline coverage determinations for U of U Health Plans Commercial, and Healthy U (Medicaid) plans. Refer to the "Policy" section for more information.

Description:

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 for PWS to appear are on the face over the areas 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 fewer in numbers. Therefore, the progression of these lesions to a more advanced size is less likely to occur.

Policy Statement and Criteria

1. Commercial Plans

U of U Health Plans covers laser treatment of port wine stains when the purpose of the treatment is to resolve the lesion in a potentially functionally important area *in limited circumstances*.

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Areas considered of functional importance by the plan are as follows:

A. The genitals.

B. The facial triangle enclosed by the ears and the chin.

C. Any port wine stain area to resolve a functional problem associated with pain, discomfort or bleeding.

U of U Health Plans 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. **Medicaid Plans**
   Coverage is determined by the State of Utah Medicaid program; if Utah State Medicaid has no published coverage position and InterQual criteria are not available, the U of U Health Plans Commercial criteria will apply. For the most up-to-date Medicaid policies and coverage, please visit their website at http://health.utah.gov/medicaid/manuals/directory.php or the Utah Medicaid code Look-Up tool

3. **Medicare Plans**
   Coverage is determined by the Centers for Medicare and Medicaid Services (CMS); if a coverage determination has not been adopted by CMS and InterQual criteria are not available, the U of U Health Plans Commercial criteria will apply. For the most up-to-date Medicare policies and coverage, please visit their search website at: http://www.cms.gov/medicare-coverage-database/overview-and-quick-search.aspx?from2=search1.asp& or the manual website

Clinical Rationale

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 in the treatment of warts, port wine stains, hemangiomas, hypertrophic scars, and telangiectasias. Pulsed dye lasers have been used as an alternative to surgical excision or carbon dioxide lasers.

The Food and Drug Administration (FDA) has cleared the pulsed-dye laser for use in treatment of warts, port-wine stains, hemangiomas, hypertrophic scars, and telangiectasias. The pulsed-dye laser has been shown to be effective in treating glomangiomas in the face and neck, as surgical excision may not be practical in these cosmetically sensitive areas. The pulsed-dye laser has also shown to be effective in removing pyogenic granulomas in cosmetically sensitive areas of the face and neck.

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 both 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.

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 stain (PWS) were compared. The increase in the extent of vascular damage attributed to the use of 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: SWL, DWL, and untreated control. Chromametric and visual evaluation of the efficacy and evaluation of side effects were conducted 3 months after final treatment. Biopsies were taken at the treated sites immediately post treatment. Chromametric 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, either the depth of laser penetration should be increased or greater 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	Destruction of cutaneous vascular proliferative lesions (eg, laser technique); over 50.0 sq cm

HCPCS Codes

No applicable codes

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