**Pearly Penile Papules**

**Effective Therapy With Pulsed Dye Laser**

Priya Sapra; Sheetal Sapra, MD, FRCPC; Amanda Singh, RPN

**Importance:** Pearly penile papules (PPPs) are benign, dome-shaped lesions found around the corona of the penis. Treatments have varied in the past; however, to our knowledge, the use of the pulsed dye laser (PDL) for this condition has never been reported in the literature. Such papules are histologically analogous to angiofibromas; thus, we report PDL is an appropriate, effective, and nonablative method of treatment.

**Observations:** Four patients diagnosed with PPPs were treated with PDL. Each patient reported little to no discomfort during the procedure. Minimal bruising was found in all 4 patients, which diminished over time. One patient stated slight discomfort after the procedure; this however, resolved in a weeks’ time. Complete clearance of the papules was noted after 2 to 3 treatments in 2 patients and a reduction of the papules in 2 patients.

**Conclusions and Relevance:** These 4 case reports illustrate the advantages of using PDL when treating PPP. In each patient, the appearance of the papules was either completely diminished or significantly reduced after the procedure. This result was achieved with only minimal discomfort felt by the patients. The use of PDL offers dermatologists a new treatment modality for PPPs that is safe, easily performed, and produces excellent aesthetic results.

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**Pearly Penile Papules (PPPs)** are benign lesions analogous to angiofibromas located on the male genitalia. Clinically, PPPs may appear as pink, white, yellow, or almost translucent lesions, 1 to 2 mm in width and 1 to 4 mm in length. The PPPs are benign and cause no physiological discomfort to the individual. Clinicians examine and diagnose this condition on a regular basis; the condition is reported to have an occurrence of approximately 15% in postpubertal males. In addition, many treatments have been used to reduce the appearance of or abolish PPPs. To our knowledge, treatment with a pulsed dye laser (PDL) has never been reported in the literature. Herein, we report the successful treatment of PPPs with PDL. In all 4 cases, a PDL (Mini V Pulse-Dye [595-nm] laser; Cynosure) was used with the immediate expectation of purpura after treatment.

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**REPORT OF A CASE**

Four healthy patients with a history of PPPs ranging from 3 to 20 years presented themselves in an office visit. All patients reported no complaints of physical discomfort in the affected area; however, they did state that the appearance of the lesions affected them emotionally. After being advised about treatment options, the decision was made to treat the areas with PDL. Photographs were taken prior to treatment, and the area was cleansed with a normal sterile saline solution (Figure 1 and Figure 2). A topical anesthetic (a combination of lidocaine/tetracaine in liothepen, 23%/7%) was applied to the corona of the penis and occluded with a wrap for approximately 1 hour until the area was adequately anesthetized. All treatments were performed using a PDL, 5-mm spot size and 0.50-ms pulse duration, with fluence ranging from 6 J/cm² to 10 J/cm². Minimal to no discomfort was reported during the treatments, and minimal purpura or bruising immediately after the procedure was observed. Patients were asked to use an over-the-counter topical antibiotic cream for 5 days after treatment. A total of 1 to 3 treatments were performed, with results ranging from a significant reduction to complete clearance. All patients reported being satisfied with the treatment results. For details regarding individual treatment, refer to the Table.

With patient 1, a biopsy was performed and a diagnosis of PPPs was made.
Patients 2 through 4 were not biopsied as a diagnosis of PPPs was either previously made or the biopsy was unnecessary for diagnosis.

Patient 3 received only 1 treatment in the area, and a significant reduction was noted in the appearance of the papules. This patient returned to the clinic 2 months after the procedure and was informed that additional treatments could be performed; however, he was pleased with the results, so no further treatments were given.

**DISCUSSION**

Lesions analogous to PPPs have been studied and examined since the 1700s. Treatment of PPPs is unnecessary because the lesions are entirely benign. However, certain patients report that the lesions affect them psychologically and still seek treatment due to aesthetic concerns. As a result, a variety of remedies for the condition have been used to eliminate the appearance of PPPs among patients. Over time, such therapies have included curettage and cryotherapy with liquid nitrogen and carbon dioxide laser. Reports commenting on these methods have had varying results. First, certain patients treated with curettage and cryotherapy with liquid nitrogen, have experienced scarring in the affected area after the procedure. The use of the carbon dioxide laser has been successful in producing aesthetically appealing results; however, despite the commendation for the carbon dioxide laser, its use should be limited for 2 reasons. First, there is an increased risk of infection due to the exposure of raw skin after the procedure. Second, an extensive home-care regime exists, including changing dressings and performing soaks as a way to improve healing; thus, making postoperative care discommoding for the patient. As mentioned previously, the PPPs are structurally similar to angiofibromas, exhibiting orthokeratosis and hypergranulosis in the epidermal layer, as well as a dense collagen layer under the epidermis. A prominent vascular network also exists within this collagen layer. Such characteristics make the lesion eligible for treatment by PDL. Herein we report the successful treatment of PPPs with PDL in 4 postpubertal males. All patients reported little to no discomfort during the course of the procedure. No infections, complications, or scarring were noted in any of these patients. Each patient experienced a minimal amount of bruising, but this diminished over time.

**CONCLUSIONS**

The case reports described earlier illustrate the superiority of the PDL in treating PPPs, because there is only minimal discomfort for the patients, unlike other cur-

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**Table. History and Treatment of Patients**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
<th>Patient 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>31</td>
<td>18</td>
<td>43</td>
<td>21</td>
</tr>
<tr>
<td>Location</td>
<td>Corona of penis</td>
<td>Corona of penis</td>
<td>Corona of penis</td>
<td>Corona of penis</td>
</tr>
<tr>
<td>Type of treatment</td>
<td>PDL</td>
<td>PDL</td>
<td>PDL</td>
<td>PDL</td>
</tr>
<tr>
<td>No. of treatments</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>No. of pulses × fluence, J/cm²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment 1</td>
<td>161 × 7</td>
<td>85 × 9.5</td>
<td>67 × 10</td>
<td>35 × 10</td>
</tr>
<tr>
<td>Treatment 2</td>
<td>149 × 6</td>
<td>130 × 10</td>
<td>NA</td>
<td>37 × 9</td>
</tr>
<tr>
<td>Treatment 3</td>
<td>20 × 7</td>
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<td>Spot size, mm</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Pulse duration, ms</td>
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<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Response</td>
<td>Complete clearance</td>
<td>Complete clearance</td>
<td>Significant reduction to patient’s satisfaction</td>
<td>Complete clearance</td>
</tr>
</tbody>
</table>

Abbreviations: NA, not available; PDL, pulsed dye laser.
rent treatments available. In addition, the absence of post-procedural scarring and infection in conjunction with the accessible nature of the PDL offer dermatologists an efficient treatment for the PPPs. Moreover, the home-care regimen is simple, requiring only the application of an over-the-counter topical antibiotic cream, and does not involve arduous tasks that have been noted with other modalities. Not only are the PPPs reduced or abolished entirely by PDL treatment, but an excellent cosmetic result is also achieved through a low number of successive treatments. These experiences have led us to believe that the PDL encompasses all characteristics that a therapeutic method should possess: effectiveness, safety, and exceptional aesthetic results.

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REFERENCES