

PRP and Correction of Penile Curvature (Peyronie's Disease)

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Abstract

Many men with Peyronie's disease are embarrassed and choose to suffer in silence rather than get help. Peyronie's disease can be a physically and psychologically devastating. This case report presents a successful correction of penile curvature using platelet rich plasma (PRP) treatment in an office setting.

Keywords

Peyronie's disease, PRP treatment, penile curvature

A 54-year-old man presented to the office with a question: Will it be possible to straighten his curved penis? (Figure 1). He noticed the curvature some years ago but did not pay attention to it because he never had functional problems. However, his new girlfriend mentioned it and since then, he feels uncomfortable with his penis appearance. Patient's medical and surgical history were unremarkable. He denies allergies and is not a smoker. He is quite active, loves biking, and he is in good health. He said that he cannot recall any traumatic event that could explain the curvature presence.

After extensive counseling, including using of PRP as an off-label modality of treating a penile curvature, and no promises were made regarding the outcome, patient signed the informed consent. The PRP was prepared by collecting venous blood in a sterile test-tube that subsequently was placed in centrifuge for 5 minutes. The plasma was transferred in a second sterile test-tube and spanned again for another 5 minutes. Next, using a sterile technique 1 cc of PRP was injected at the maximum curvature point on the left side (see Figure 1) starting superficial in the tunica and then continuing deep in the corpora. Next, the patient was instructed on how to use a penile pump: twice a day, for 10 minutes each time, for the next 6 weeks. Following the procedure, intercourse was not restricted and beside mild penile bruising at the injection site there were no complications. The patient came to the office for follow-up 4 weeks later. There was improvement and therefore, a second PRP treatment was done following the same protocol as described. Four weeks after the second treatment, the patient came for his follow-up. He was pleased with the result (Figure 2).

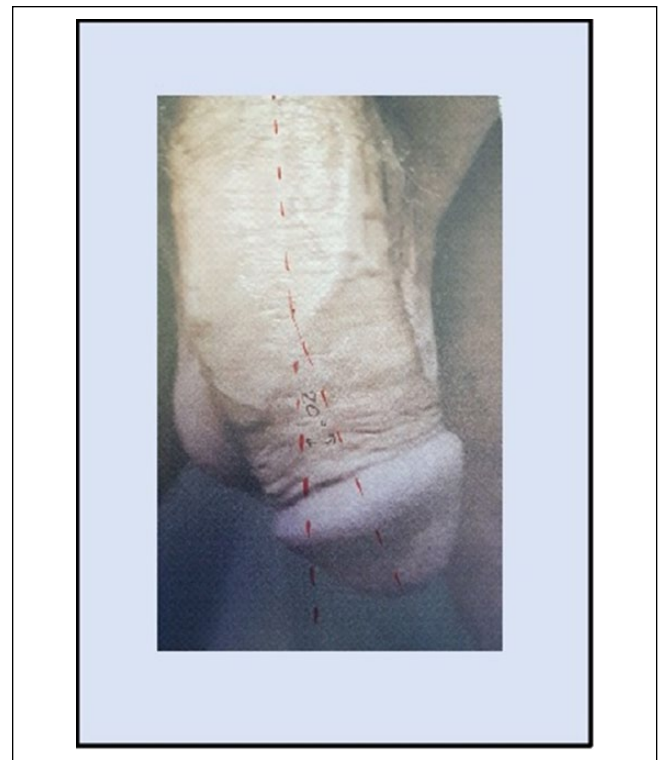


Figure 1. 20° left side penile deviation.

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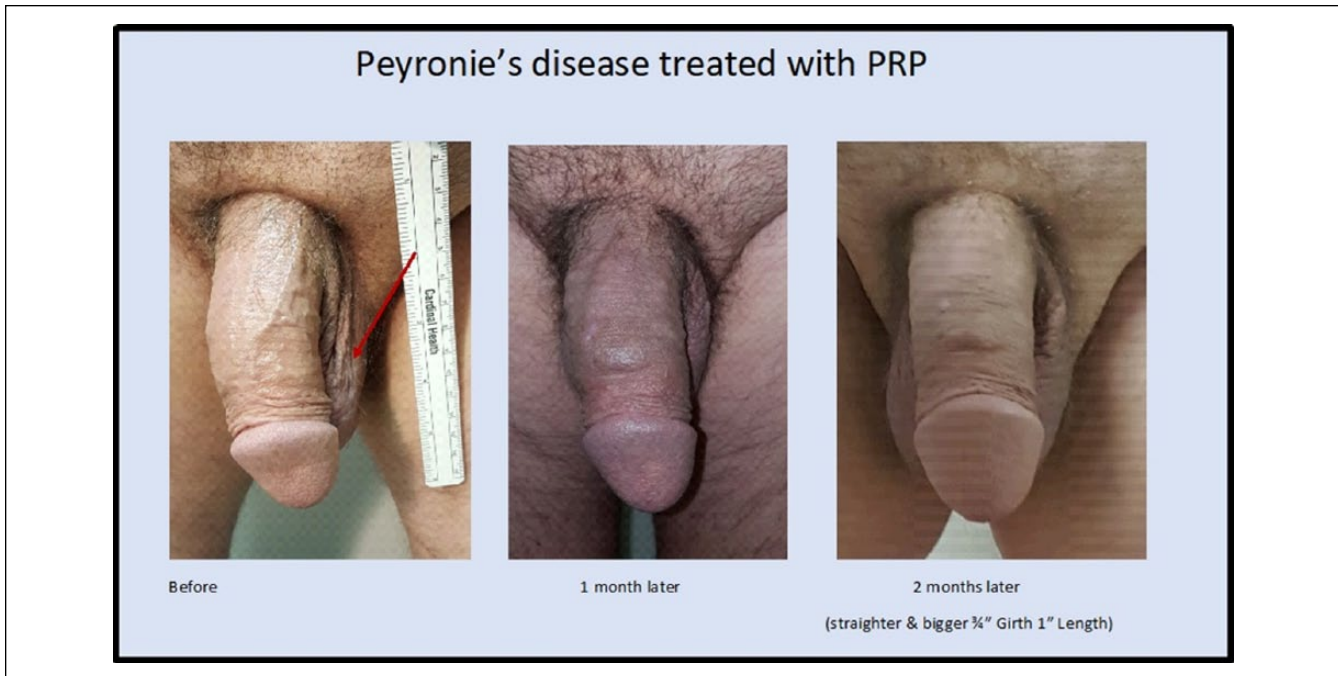


Figure 2. Progressive improvement of curvature after two treatments with PRP, each 4 weeks apart.
Note. PRP = platelet rich plasma.

Discussion

What Is Peyronie's Disease?

Peyronie's disease is defined in the American Urological Association's 2015 guideline as an "acquired penile abnormality characterized by fibrosis of the tunica albuginea, which may be accompanied by pain, deformity, erectile dysfunction, and/or distress." It is a condition thought to be the result of localized inflammation of tunica albuginea followed by formation of a scar, called a plaque, in the penis. The plaque builds up inside the tunica albuginea and eventually, the penis will curve, and in extreme cases it can cause painful erections and can make intercourse difficult or even impossible. Most of the time the plaques form on the top of the penis making it to bend upward during the erection. When plaques form on the bottom or side of the penis, the bend will be downward or sideways. Sometimes plaques form all the way around the penis. These plaques most often do not cause curving but may cause the shaft of the penis to narrow like the neck of a bottle. Men may also notice that their penis became thinner and/or shorter.

Peyronie's Disease develops slowly during an acute phase lasting 12 to 18 months. At this time, the plaques form in the penis, the bending/curving of the penis gets worse, and on occasion pain will be present during erection. In the chronic phase, the plaque stops growing and the penis does not bend any further. It is estimated to affect less than 10% of men. The condition becomes more common within 40 to 70 old

age group.¹ It is rare in young men but has been seen in men in their 30s.

It seems that 10% to 15% of the patients will have spontaneous recovery, about 50% will get worse and the rest will be relatively stable.

Etiology. The underlying cause of Peyronie's disease is not well understood but trauma to the tunica albuginea is thought to be the main cause.² The injury is followed by the plaque formation. It seems to be related to vigorous sexual activity with buckling of the penis, sports, or other accidents. An increased incidence in genetically related males suggests a genetic component.³ Some men with connective tissue disorders such as Dupuytren's contracture of the hand have an increased incidence of Peyronie's disease.

Treatment of Peyronie's disease. Before starting any treatment one must remember that the consensus is for the first 12 months after diagnosis is to treat conservatively.

- a. **Counseling.** Peyronie's disease affects quality of life in about 75% of men. Many men with Peyronie's disease are embarrassed and choose to suffer in silence rather than get help. Peyronie's disease can be a physically and psychologically devastating disease. It is not uncommon for men afflicted with Peyronie's disease to exhibit depression or withdrawal from their sexual partners.⁴

- b. *Physical therapy and devices.* There is moderate evidence regarding the efficacy of penile traction therapy, a well-tolerated, minimally invasive treatment. However, there is uncertainty about the optimal duration of stretching per day and how long the treatment should last. Some suggest to be used up to 6 months.⁵
- c. *Drug therapy.* Many treatments have been studied, and the results so far have been mixed.⁶

Vitamin E supplementation has been studied for decades, and some success has been reported in older trials, but those successes have not been reliably repeated in larger, newer studies.⁷

A combination of Vitamin E and colchicine has shown some promise in delaying progression of the condition.⁸

Some newer agents targeting the basic mechanisms of inflammation have been studied in larger clinical trials. These include potassium para-aminobenzoate (Potaba),⁹ helps reduce plaque size, but not the curve. *Pentoxifylline* (acting through *transforming growth factor* β 1 [TGF β 1] inhibition),¹⁰ and *Coenzyme Q10*.¹¹

The efficacy of interferon alfa-2b in the early stages of the disease has been reported in recent publications, (It has been shown to help control scarring, perhaps by slowing down the rate that scar tissue builds and by making an enzyme that breaks down the scar tissue) but, it was found to be less effective in cases where calcification of the plaque had occurred in common with many treatments.¹²

Collagenase clostridium histolyticum (CCH) is marketed as Xiaflex, a drug originally approved by the FDA (U.S. Food & Drug) to treat *Dupuytren's contracture*, is now an FDA-approved injectable drug for treatment of Peyronie's disease. The drug is reported to work by breaking down the excess collagen in the penis that causes Peyronie's disease.¹³ This drug (Xiaflex®) is now approved in the United States for treatment of men with penises curving more than 30 degrees.

- d. *Surgical therapies* are beyond the scope of this discussion.

Why using PRP in this patient?

Platelet-rich plasma (PRP) is a concentrate of autologous blood growth factors which has been used for decades to improve angiogenesis and wound healing. PRP treatments are used in dentistry, orthopedics, dermatology, ophthalmology, and other disciplines often with great results. Platelets store various growth factor proteins, such as platelet-derived growth factor (PDGF), epidermal growth factor, vascular endothelial growth factor, transforming growth factor beta (TGF- β), and others. These growth factors are needed to promote the inflammatory and proliferative phases

of wound healing. PDGF initiates the movement to the wound of inflammatory cells such as neutrophils and macrophages and through phagocytosis process they engulf bacteria and damaged tissue. PDGF and TGF also stimulate other reparative cells such as fibroblasts and endothelial cells.¹⁴

An online search of the NIH (National Institutes of Health) U.S. National Library of Medicine, PubMed, and Cochrane Library databases for terms such as Peyronie's disease and Platelet Rich Plasma (PRP) produced no citations. Therefore, it is possible that this case report might be one of a few to mention the successful PRP treatment in a Peyronie's disease case. If the results of this report will be confirmed by other studies then a relatively new and minimal invasion procedure will be available to treat Peyronie's disease.

Declaration of Conflicting Interests

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Author Biography

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