

Excision of Plaque followed by Autologous Tunica Vaginalis Graft in Peyronie's Disease : A Case Report

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ABSTRACT

Since the first description of Peyronie's disease by Francois Gigot in the year 1743, treatment modalities have been changed but outcome of Peyronie's disease remain unsatisfactory. Now both medical and surgical treatments are available. Surgical treatment is to be advised if initial conservative treatment fails. A middle aged man with Peyronie's disease was initially treated conservatively. But conservative treatment failed to satisfy the patient. After proper counseling, patient underwent surgical treatment by excision of plaque followed by autologous tunica vaginalis graft. Following excision of the plaque and tunica vaginalis graft, angulation of penis was corrected. He could penetrate vagina during intercourse and patient's psychological benefit was found enormous. He was followed up for two years. Proper counselling and patient's expectation following operation should be judged properly.

Key words: Peyronie's Disease (PD); Tunica vaginalis; Erectile dysfunction.

INTRODUCTION

Peyronie's Disease (PD) is a chronic inflammation of tunica albuginea of the corpora cavernosa that causes an inelastic plaque resulting in penis deformation. François Gigot de Peyronie was first to describe penile curvature due to peyronie's disease in the year 1743¹. Clinically, it presents as a palpable penile scar in the flaccid condition, which is associated with penile pain, angulation resulting erectile dysfunction¹. The condition is often associated with Erectile Dysfunction (ED) and therefore, impact on psychological well-being of the patient as well his sexual partner^{2,3}. Prevalence varies between 3.2% to 13%. It generally affects males around 50 years of age but recently a rise in frequency has been recorded in younger patients^{4,5}. Like Dupuytren's contracture, PD more frequently affects white men, more

rarely black and Asian men⁶. Although its etiology is not completely known, there is general consensus that PD is genetically transmitted and secondary to penile trauma^{7,8}. Repeated trauma induces Transforming Growth Factor (TGF)- β 1. TGF- β 1 has a pleiotropic effect on fibroblast activity, increasing collagen synthesis while inhibiting connective tissue breakdown via decreased collagenase expression. The ability of TGF- β 1, a potent profibrotic cytokine, to induce its own production is considered key to the development of excessive scarring and fibrosis⁹. Despite multiple treatment options, PD remains a therapeutic dilemma due to an incomplete understanding of its etiology, and the relative paucity of larger multi-institutional series and randomized, placebo-controlled trials¹⁰. Two types of treatment available for the treatment of peyronie's disease – non-surgical and surgical. Both carries advantages and disadvantages. The result of combined modalities of treatment is mixed.

CASE REPORT

Mr. "M" 48 years male came on 5th May 2016 presented with plaque and deformity of penis for about last 4years. Plaque was associated with pain and inability to penetrate during sexual intercourse. Patient was non-diabetic, normotensive. His vital parameters were found normal. He had no history of jaundice and no deformities in the limbs. He had no history of genital trauma or erectile dysfunction. He received 6 doses of intra-lesional verapamil injection. His

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Date of Submission : 23-07-2019

Date of Acceptance : 15-11-2019

pain reduced a bit after intra-lesional injection but size of the plaque and penile deformity remained same and so his inability to perform sexual intercourse. On examination, a plaque about 3cm ×2.5 cm in size found at the dorsolateral aspect of right side of penis. Penile ultrasound and Doppler study confirm the lesion with normal vascularity of the penis. On erect condition there was angulation of the penis > 60° at the right side. Patient did not want to continue the conservative treatment furthermore. So, decision was made for operative treatment- excision of plaque and tunica vaginalis graft on the defect after proper counselling.

During operation at first circumcoronal incision was made and dorsal neurovascular bundle was separated from the tunica albuginea (Fig-1). Whole plaque was identified and excised (Fig-2). A tunica vaginalis patch graft harvested from ipsi-lateral scrotum and was laid on the defect and sutured at the margins of tunica albuginea by 5/0 vicryl. After excision of plaque and application of patch graft over the defect the angulation of the penis corrected spontaneously revealed on artificial erection of the penis and 1 to 1.5 cm penile length was gained. Firm bandage applied over the penis and kept for 72 hours to prevent subcutaneous haematoma and oedema formation. Patient was catheterized earlier for continuous drainage of bladder. After 72 hours firm bandage was replaced by relatively loose bandage and catheter was removed. Patient was instructed to avoid sexual intercourse for 3 months. At the end of three months his penis was examined and found no plaque at the flaccid state and on erection his penis became more or less straight. At the end of six months, he was able to perform sexual intercourse without any difficulty. Data on sexual function before and after the operation was collected and compared using “The International Index of Erectile Function (IIEF-5)” questionnaire in every 6th month postoperatively for two years¹¹. The postoperative scores of erectile functions, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction improved significantly.



Figure 1 : Separation of neurovascular bundle.



Figure 2 : Excised plaque.

DISCUSSION

PD has 2 stages: Acute and chronic (Stable) phases. The acute phase is associated with pain and probable progression of penile curvature, during which no surgical treatment is advised. The chronic (Stable) phase usually starts 6-12 months later, which is characterized by stable penile curvature and absence of pain. Without any intervention, the natural history of PD has been best described by Mulhall et al¹². Of the 246 men of their study within 5 months of PD onset, the curvature had improved in 12%, remained stable in 40%, and worsened in 48% at a follow-up to 18 months. Erectile Dysfunction (ED) was present in 20 to 50% of men with PD.

The goal of the surgery is to achieve “functionally straight” penis (A curvature less than or equal to 20 degrees). Any patient who has a combined PD and refractory ED will need a penile prosthesis. Grafts are usually preferred when penile curvature is more than 60 degrees. There are personal differences among urologists about the timing of surgery, the EAU and American Urological Association (AUA) guidelines recommend that surgery be performed after 3 months of stable curvature or after 12 months from the onset of symptoms¹³. There is no ideal graft available. Hence, the selection of a particular graft depends on the local availability, cost and surgeon’s expertise with the graft¹⁴.

Among the grafts autologous graft are the best options. Allografts, xenografts and synthetic grafts have different types of side effects ranges from allergic reactions, rejections as well as the availability of the grafts¹⁵. On the other hand, autologous grafts are easily available and devoid of allergic reactions and rejection. One of the most important aspect of grafting is length gained by the penis. If there is no corporal fibrosis with the PD, chance of length gained by the graft is about 2 to 3cm. Silvani et al published long-term outcomes of 46 patients with saphenous vein graft, gain in penile length from 1.2-2.3 cm with complete correction of penile curvature in all the patients were noted, and 75% of patients reported “excellent” penetrative sexual intercourse¹⁶. Liu et al excised the fibrotic plaque sparing neurovascular bundle, harvested size-matching autologous tunica vaginalis of testis as the graft and patched to the defect in their series of 19 patients. All patients had satisfactory correction of penile appearance and postoperative intercourse satisfaction and overall satisfaction measured by IIEF-5 were improved significantly¹⁷. Our case showed similar outcome as Liu et al had shown in their study.

DISCLOSURE

All the authors declared no competing interest.

CONCLUSION

There is no single surgical procedure suitable for all cases of PD though autologous tunica vaginalis of testis as the graft showed promising results. A detailed counseling about the surgery and the possibility of additional intra-operative maneuvers has to be explained. Patient's realistic expectations are crucial for a successful postoperative outcome.

DISCLOSURE

All the authors declared no competing interest.

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