

Penile prosthesis implant with bi-triangular excision and graft for surgical therapy of Peyronie's disease: A case report

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Summary We present a case of a 65-year-old man, who presented with moderate erectile dysfunction and a dorsal penile deviation of 60° caused by Peyronie's disease. The patient underwent bi-triangular-shaped plaque excision, followed by grafting and implantation of inflatable penile prosthesis. Complete penile straightening, without mechanical or geometric abnormalities, was achieved using bi-triangular excision and grafting. Postoperatively, the patient reported high satisfaction with the results and could perform sexual intercourse naturally. This novel technique corrects any degree of penile curvature, permits malleable and semi-rigid penile prosthesis implantation, avoids penile length loss, and eliminates additional incisions. To our knowledge, this case is the first in the literature in which the bi-triangular technique was successfully used for penile prosthesis implantation secondary to Peyronie's disease. This new technique appears to be a good solution to correct penile curvature during penile prosthesis implantation for the treatment of Peyronie's disease associated with erectile dysfunction.

KEY WORDS: Peyronie's disease; Surgery; Graft; Penile prosthesis; Erectile dysfunction.

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INTRODUCTION

Peyronie's disease (PD) is a connective tissue disorder characterized by tunica albuginea fibrosis that can generate penile deformity with curvature, narrowing, and shortening and, in 41% of cases, is associated with erectile dysfunction (ED). PD is often associated with psychological disturbance and has a male population prevalence of 3-9%.

Penile prosthesis implantation (PPI) is a treatment for patients with PD and ED non-responsive to oral treatment. During the implantation, the surgeon may need to perform manual modeling, plaque incision if residual curvature after modeling is greater than 30°, and, if the defect created by the incision is greater than 2 cm, placement of a graft. Segal *et al.* reported that 53.6% of patients underwent PPI and modeling required plaque incision with or without a graft (1). The graft insertion

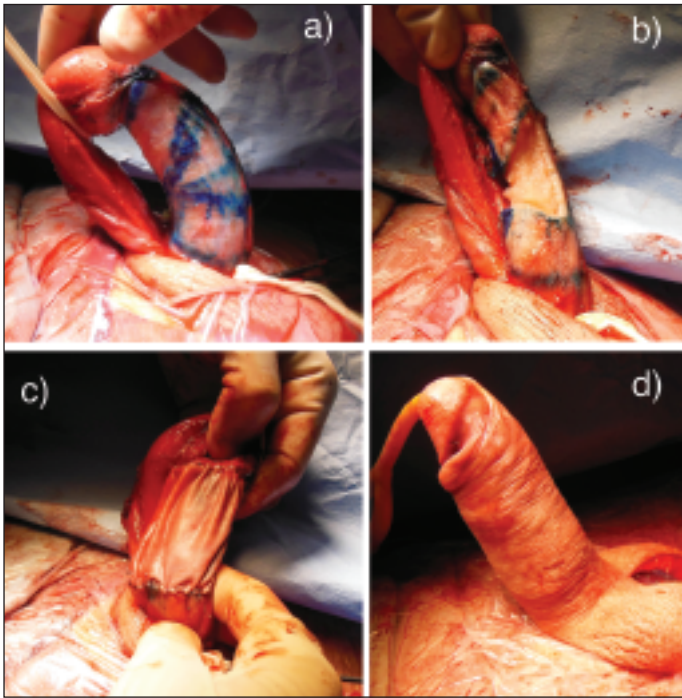
may represents a challenging procedure and in some cases require another incision to access distal defects. Herein we report the first case of PPI using the bi-triangular excision and graft (2).

CASE REPORT

Here we present a case of a 65-year-old man, without comorbidities, who presented with moderate ED and required a phosphodiesterase type 5 inhibitor to have sexual intercourse. He had a dorsal penile deviation of 60° caused by PD. The penile plaque had been stable for 1 year. Artificial erection was induced with 0.9% of NaCl solution injected into the corpora cavernosa, punctured with a 21G butterfly needle. The technique described by Austoni *et al.* was used to deglove the penis and isolate the neurovascular bundle (3). We marked two triangles on the patient's tunica albuginea. The bases of the triangles were equal to the disparity between the long and short sides of the curvature (w), and the sum of the triangles' heights was equal to $\frac{3}{4}$ of the corpora cavernosa circumference (L) (Figure 1A). The apexes of the triangles were located at the middle of the curvature on the concave side (Figure 1A). After the excision of the triangles and rectification of the penis, the corpora cavernosa defect acquired a rectangular shape, with longitudinal and transversal lengths equal to w and L , respectively (Figure 1B). The defect was closed by a bovine pericardium graft 4.5×8.25 cm in size (Figure 1C). Finally the Buck's fascia was closed, and the penis re-gloved (Figure 1D). Another 2-cm longitudinal incision was made on each cavernous body to perform the PPI. The fluid reservoir was inserted into the retropubic space through an inguinal ring using the scrotal incision made to deglove the penis. The pump was placed on the subcutaneous space of the scrotum. A 14-Fr Blake drain was inserted into the scrotum for 24 h.

The patient reassumed sexual intercourse 6 weeks after surgery. Complete penile straightening, without mechanical or geometric abnormalities, was achieved using bi-triangular excision and grafting. Postoperatively, the patient reported being highly satisfied with the results and could perform sexual intercourse naturally.

Figures 1a, b, c, d.
Surgical procedure.



A) Penile degloving with the two triangles marked.

B) Defect resulting after bi-triangular excision.

C) Penile rectification and tunica albuginea defect closed by bovine pericardium graft.

D) Inflatable penile prosthesis implantation after re-gloving.

CONCLUSIONS

To our knowledge, this case is the first in the literature in which the previously reported bi-triangular technique was successfully applied for PPI secondary to PD, validating our previous measures and findings. This new technique appears to be a good solution to correct penile curvature during penile prosthesis implantation for the treatment of PD associated with ED.

Discussion and Supplementary References are posted as Supplementary Materials on www.aiua.it

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