

# Patch bulging after plaque incision and grafting procedure for Peyronie's disease. Surgical repair with a collagen fleece

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## DISCUSSION

The incision/excision and grafting techniques (PIG) in PD have gained popularity in recent years. The use of grafting materials is associated with complications in addition to general event as erectile dysfunction (ED), surgical site infection, penile hematoma, penile narrowing or indentation, phimosis or sensory abnormalities. Additional complications include persistent pain (which may be due to neurological injury), graft infection, graft contracture leading to penile shortening or recurrent curvature and graft bulging (4).

The characteristics of the material used as graft influences the type of complication. The ideal graft should be packaged and readily available in various sizes. It should be pliable and compliant, but not so compliant that aneurismal dilatation is possible. It should be easily handled and sutured. An ideal graft should lower patient morbidity and operative time. The graft should be well accepted at the recipient site with minimal inflammatory response. There should be low antigenicity risk and a low risk of viral or prion transmission. Despite significant compliance, the graft should have tensile strength which is adequate to prevent bulging or aneurismal dilatation. Finally, an ideal graft should be affordable (2). If the patient notices a bulging of the graft, which can occur two to three months postoperatively as in our described case, a duplex ultrasound should be performed. If a hematoma is identified, an aspiration procedure should be performed. If no hematoma is identified, observation is continued. Reoperation may be required if the bulge is chronic and clinically significant (4).

The grafts used in PIG procedures can be divided into three groups: autologous, synthetic, and non-autologous. Autologous grafts include dermis, vein, tunica vaginalis, temporalis fascia and buccal mucosa. They have the advantage of causing only an inflammatory reaction and lower potential for wound infection as compared with synthetic non-autologous grafts.

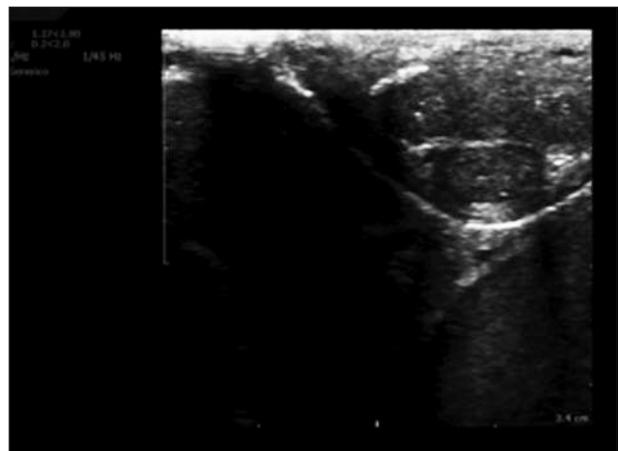
Unfortunately, autologous grafts are associated with higher surgical morbidity and increased surgical time, because a separate incision has to be made and the graft tissue harvested. This can lead to infection and pain at the graft site. Synthetic grafts are no longer recommended because of increased risk of infection, allergic reaction, enhanced inflammation causing fibrosis, and higher rates of contracture. Non-autologous grafts include

pericardium, dermis, fascia lata, dura mater, and porcine dermis. These are divided into two groups: allografts and xenografts. Currently, the two most popular non-autologous xenografts are bovine pericardium and porcine small intestinal submucosa (SIS) grafts. These two grafts have the advantage of reducing morbidity associated with harvesting of an autologous graft and decreased hypothetical risk of transferring prions and other infectious processes associated with allografts (5, 6).

In this clinical case, patient underwent a surgical procedure with Paulo Egydio technique using an acellular collagen material (*Xenform*<sup>®</sup>). In scientific literature there are no reports about the possible complications related to the use of this graft in andrological surgical procedures. The only experiences reported was limited to the pelvic surgery (7) and to a very small andrological patient's population. *Caraceni et al.* (8) presented 15 cases treated by this technique and graft without major intraoperative complications, shortening or signs of inflammation and with a good postoperative sexual activity in most of patients. In the case described the bulging could be due to an intraoperative bleeding resulting in patch dilation or could be intended as an

## Figure 5.

Transversal view of basal ultrasound postoperative evaluation after 24 months. Cystic lesion was substituted by an hyperechoic linear image without posterior shadow.



**Figure 6a.**

Ultrasound longitudinal view after ICI.



**Figure 6b.**

Ultrasound transversal view after ICI.



irregular wound edge that we can observe during PIG using the most common techniques as recently suggested by *Miranda and Sampaio* (9). In addition, we must consider that the current techniques designed to correct penile deviations using PIG with non-autologous graft present geometric and mechanical imperfections with potential consequences for the postoperative success rate as reported in current recent literature (10). Ultimately, histological examination of excised patch showed only an initial fibrous reaction. The short time interval between the corporoplasty and the new procedure makes

it impossible to determine if the acellular collagen material used as graft may induce a new fibrotic reaction as suggested by *Rolle et al.* in case of PIG with SIS (11). Our choice to repair the defect with *Tachosil®* was made on the basis of the evidence sourced (12) and recently confirmed in literature (13) regarding the use of this material in andrological surgery. *Tachosil®* application is quick, simple and does not require the use of stitches between the graft and the surrounding structures. Clinical and imaging long term follow up demonstrate the good mechanical resistance and tolerability of the collagen fleece in particular in the case of penile re intervention.

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