Use of porcine intestinal submucosa (Surgisis) as treatment in Peyronie’s disease

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ABSTRACT

Objective: To present three cases of patients with severe Peyronie’s disease who were successfully treated with the application of porcine intestinal submucosa (Surgisis) as a surgical treatment option.

Clinical cases: Three cases of patients with Peyronie’s disease are presented who were initially managed conservatively with 300 mg vitamin E every twenty-four hours and 1 mg colchicine every twelve hours for a period of six to nine months with no clinical improvement. Surgical treatment was performed with H incision of the plaque and application of porcine intestinal submucosa for the correction of penile curvature. The three patients showed penile curvature correction by means of test with alprostadil three months after surgery.

Conclusions: The use of porcine intestinal submucosa as treatment for Peyronie’s disease has been shown to be an effective technique with low complication rate.

RESUMEN

Objetivo: Presentar tres casos de pacientes con enfermedad de Peyronie severa, tratados exitosamente con la aplicación de submucosa intestinal de porcino (surgisis), como una opción de tratamiento quirúrgico.

Casos clínicos: Se presentan tres casos de pacientes con enfermedad de Peyronie, tratados al inicio de forma conservadora con vitamina E, 300 mg cada 24 horas y Colchicina 1 mg cada 12 horas en un periodo de seis a nueve meses, sin presentar mejoría clínica. Se realizó tratamiento quirúrgico con incisión en ‘H’ de la placa y aplicación de submucosa intestinal de porcino, para corrección de curvatura peniana; los tres pacientes demostraron una corrección de la misma por medio de prueba con alprostadil tres meses posteriores a la cirugía.

Conclusiones: El uso de la submucosa intestinal porcina para el tratamiento de la enfermedad de Peyronie ha demostrado ser una técnica efectiva y con baja tasa de complicaciones, por lo que se le considera actualmente como...
currently making it the treatment of choice in severe cases of the disease.

**Keywords:** Peyronie’s disease, treatment, porcine intestinal sub mucosa

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## INTRODUCTION

Peyronie’s disease is characterized by the appearance of fibrous plaque in the tunica albuginea of the corpora cavernosa resulting in penile curvature.¹ Etiology has been associated with microtraumas produced when the penis is erect with subsequent scar formation that produces the appearance of hard plaques.² Incidence is approximately 1-9% and principally affects men between 45 and 60 years of age. An association with infectious processes and autoimmune diseases has been suggested and studies have reported association with Dupuytren disease in 20% of patients.³ The principal symptom is painful erection along with curvature of the erect penis. Forty per cent of patients present with erectile dysfunction.

The disease has two phases: an acute phase associated with painful erection and disease progression and a chronic phase in which pain diminishes and the disease stabilizes.⁴ Patient evaluation includes medical and sexual past history and symptom onset and duration. Physical examination with pharmacological stimulation test is done to determine curvature degree, plaque extension, and penile length. Doppler ultrasound imaging is used to measure vascular flow of the penile and collateral arteries.

Initial treatment of choice is conservative for patients presenting with acute phase. This includes a variety of drugs such as vitamin E (800-1000 units per day),⁵ colchicine (1-2 mg per day for 3 months),⁶ and intralesional application of verapamil.⁷ Surgical treatment should be carried out on patients in the stable phase in order to ensure long-term effectiveness and should be done on patients with curvature above 60° who present with significant shortening of the penis, and when the deformity impedes coitus.⁸

Many surgical techniques have been described for Peyronie’s disease correction, ranging from tunica albuginea application to graft placement with different materials combined with plaque incision or excision that have become standard treatment for curvature correction.

Porcine intestinal submucosa has been used with successful short-term results as tunica substitution in the surgical management of severe penile curvature secondary to Peyronie’s disease.⁹⁻¹¹

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## CASE PRESENTATIONS

**Clinical case 1:** Patient is a 53-year-old man with past history of diabetes mellitus and high blood pressure. Disease onset was 2 years prior and patient presented with erectile dysfunction and penile curvature (Image 1) with painful erections and plaque measuring 1 cm x 1.5 cm in the central dorsal region of the penis. Alprostadil test revealed 90° dorsal curvature that was managed with colchicine and vitamin E for six months with partial improvement (Image 2).

**Clinical case 2:** Patient is a 60-year-old man with disease onset one year prior, presenting with dorsal penile curvature (Image 3) and erectile dysfunction. During physical examination plaque was palpated in the dorsal region and there was non-painful ventral curvature. Alprostadil test showed 80° dorsal curvature and patient was treated with colchicine and vitamin E for 9 months with minimal improvement (Image 4).

**Clinical case 3:** Patient is a 60-year-old man with past medical history of discoid lupus erythematosus that was treated with chloroquine. Present disease began 9 years prior with painful, cephalically deviated penile curvature (Image 5). Physical examination corroborated presence of fibrous plaque in dorsal region and alprostadil test showed 80° dorsal deviation. Patient was treated with vitamin E and colchicine for 6 months with no improvement (Image 6).

All three patients underwent resection in ‘H’ and Surgisis application.
In the present authors’ experience with Surgisis application in the management of Peyronie’s disease, penile curvature correction in all three patients was achieved, demonstrating how the use of porcine intestinal mucosa xenograft for covering the defect after fibrous plaque incision has become the material that is closest to an ideal one for Peyronie’s disease correction. Despite the small number of patients, these results are correlated with those found in the bibliography. There were no complications in short-term patient follow-up, such as graft contraction or worsening of erectile dysfunction. This graft has been shown to have tissular repair as well as remodeling characteristics and it does not form fibrous tissue when placed in vivo.
CONCLUSIONS

Porcine intestinal submucosa grafts for covering tunica albuginea defects after ‘H’ incision of plaque in Peyronie’s disease produces satisfactory results. Its relatively easy placement and its lack of associated adverse effects or comorbidities make it an ideal anatomical and functional tunica substitute.

BIBLIOGRAPHY