



## High Resolution Dynamic Echo-Doppler Ultrasound (HRDEU) is Essential for Accurate Diagnosis and Treatment in Peyronie's Disease (P.D) Patients

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### Abstract

Advanced/Severe cases of Peyronie's disease (PD) sometimes mislead to challenging surgical procedures which increase the risk of complications. Accurate diagnosis tools are needed for treatment selection. Protocolized high-resolution dynamic echo-Doppler ultrasound is essential. This group of patients seeks regaining anatomical normality of their phallus, recovering erectile function and being able to re-engage in sexual activity.

**Keywords:** Peyronie's disease; High-resolution dynamic echo Doppler ultrasound; Diagnosis; Treatment

### Objective

To present a difficult PD case which was solved in a simple and resolute way, prior having had a correct diagnosis and counseling [1-3] of patient and partner and performing a minimally invasive surgery which minimized risk factors [4] for developing complications.

### Methods

A 48-year-old male whom, after a penile traumatism during sexual intercourse experienced ventral deviation of his phallus, pain upon erection and moderate loss of erectile function 3 months after the traumatic episode. He was offered shock wave therapy [5] elsewhere, and went through a first and second session which he described as "painful". Three days after the second one, he reported an increase in the deviation of his phallus reaching 45°. After contacting our clinic he was proposed by our team to undergo our diagnostic protocol:

- **Physical evaluation:** Consistent through palpation of dorsal plaque  $\pm$  2 cm
- **Psychological Evaluation:** STAI, BECK scores High patient distress
- **IEEF:** Loss of erectile function.
- **HRDEU:** Multiple calcifications in the dorsal mid area of the shaft with most prominent measuring 2.2 cm long, 1.8 cm wide, 6 mm deep, loss of interphase. The Doppler results revealed after injection of 20 mgs Caverjet low penile blood flow below 30 cm/s in both cavernosal arteries. Inconsistent erection and positive elastography results for hardness upon plaque location and surrounding boundaries with increase of these pathologic findings in less than 5 month follow up (Figure 1, 2).
- Kelami [6] technique photographs revealed over 125° angle dorsal curvature Figure 3.

After seeing these results, patient was counseled [7] and proposed for Inflatable Penile Implant (IPP), but he refused and searched other treatments. Five months later he returned to our practice, convinced this was in fact the best option. He underwent implant surgery when his curvature had reached an angle of 135° after having tried other types of treatments that rendered no satisfactory results. The HRDEU performed prior to the surgery revealed that the PD had progressed and that the formation of a consistent plaque of fibrosis had increased during the 5-month delay, both in size and overall shaft presence of fibrotic points together with a lower blood flow.

### Results

Patient underwent infra-pubic penile prosthesis implant. Photos were taken before and after,

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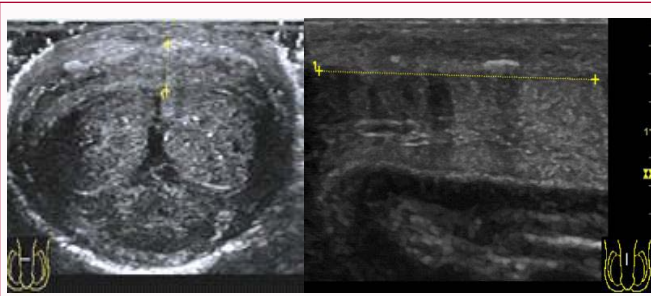


Figure 1: Increased albuginea 1<sup>ST</sup> HRDEU and plaque.

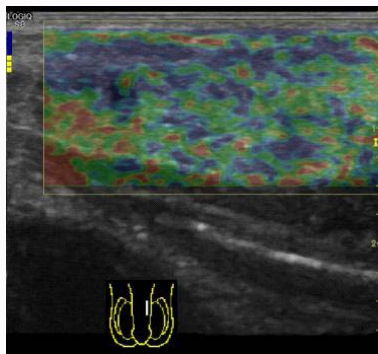


Figure 2: Pathologic elastography 5-month evolution.



Figure 3: Before and immediate post-op.

graft was not needed and fibrosis was removed with the aid of the Rosselló Cavertotomes [8]. The pre-surgical HRDEU revealed severe extension of the fibrosis both in tunica albuginea and cavernosal tissue in comparison with those performed 5 months before.

### Discussion

In the era of the “grafts” for PE we must ask ourselves if so, much surgery is that beneficial to our patients. This patient was proposed by other centers for different treatments which gave no result and in the meanwhile the disease progressed and only with the HRDEU we were able to proof that there was a progress in the fibrosis and that the blood flow was decreasing. Therefore, no graft procedure would have obtained good erectile function and implant was mandatory. Length

was lost in this case due to the delay in performing surgery and extension of the fibrosis and although surgical technique (relaxing incisions together with the use of the Cavertotome, was mandatory in this severe case, the patient was counseled accordingly to understand that with the implant he would not recover maximum penile length prior to the disease.

When PD is accurately diagnosed and extension of the fibrosis taken into consideration, sole grafting procedures will lead to unhappy patients due to the appearance in the short term of erectile dysfunction, which will require a 2<sup>nd</sup> surgery. Penile implant + Grafting increase risk of complications [9]. The accurate use of the cavertotome in these cases demonstrates that fibrosis may be removed and IPP inserted easily, thus increasing patients and surgeon satisfaction. Ultimately the HRDEU together with an experienced sonographer is the key tool in our opinion to be able to diagnose these patients in time and offer best technique for each case.

### Conclusion

These patients need a very accurate diagnosis to be able to be proposed for an optimum treatment strategy at the correct point of the evolution of their disease. With these diagnostic tools and especially with the aid of HRDEU and experienced sonographer, treatment decision has more probability of being successful and recovering patient sexual function is achievable.

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