Treatment of Peyronie Disease (PD) by Extracorporeal Shock Waves (ESW)

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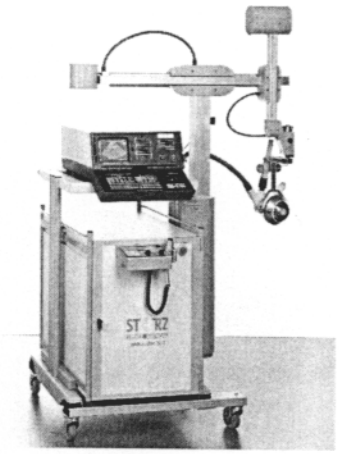

Introduction:

Etiology of the formation of fibrous plaques within the tunica albuginea of penis is unknown. The plaques often result in painful angulation of the erected penis. So far the disease can be cured neither by conservative nor by operative methods. The therapeutic aim is the destruction of the fibrous plaques and the improvement of the elasticity of the fibrous tissue. Theoretically, such effects could be achieved by application of extracorporeal shock waves (ESW). Basing on a new miniaturized shock wave device, we initiated ESW therapy (ESWT) in patients with Peyronie disease (PD).

Material and Methods:

15 patients with a mean age of 52 years (25 - 74 years) with severe angulation and painful erection of the penis entered the study. Shock waves were applied by a miniaturized lithotripter (MINILITH SL1, Storz Medical AG). The plaques were identified by an inline ultrasound scanner (7,5 MHz). Focussing of the plaques was improved by intra-cavernous injection of prostaglandin E1 (erection grade 2-3). Treatment was performed without anaesthesia and analgesia. The Number of shock waves was limited to 800 per area with a maximum dose of 3.500 shock waves per application.

Results:

In 12 patients the disease has been significantly improved, 4 had satisfactory results and failures occured in 3 patients (Fig. 1). In all patients with calcified plaques excellent results were achieved (Fig. 2). The nonresponders had been pretreated by either X-ray or operations. 8 patients of the responders had been pretreated by drugs (Fig. 3). The subjective criteria of success are summarized in Fig. 4. 10 patients were completely free of pain, for all 12 patients intercourse was possible after the therapy. Objective criteria are indicated in Fig. 5. In 3 patients small plaques disappeared, in 9 patients the size of the plaque was reduced. Curvature of the penis was abolished in 5 patients and improved in 7 patients. There is a positive correlation between the size (volume) of the plaque and the frequency of ESWT. As to side effects, minimal urethral bleeding was observed immediately after ESWT in 3 patients.

Conclusion:

Shock waves seem to alter the structure and elasticity of the fibrous plaques resulting in a disappearance or improvement of curvature of the penis. Best results have been achieved in calcified plaques. In case of failure of ESWT problems of precise detection of the plaques by ultrasound were envolved. The success rate of ESWT seems to be superior to other methods of treatment. ESWT is a non-invasive method which can be repeated several times. So far serious complications or side effects have not been observed. For final evaluation of the success of ESWT in PD a larger number of patients and a longer follow up-period are required.

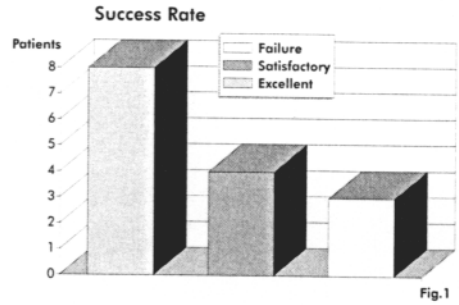

Fig.1

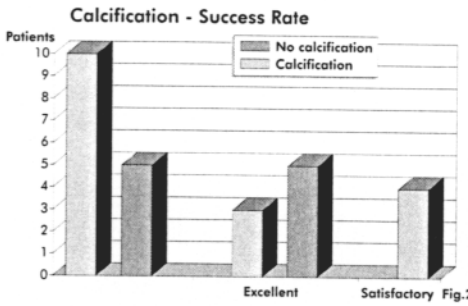

Fig.2

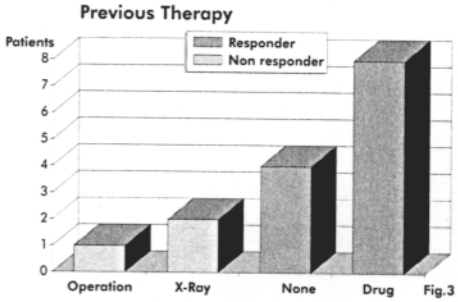

Fig.3

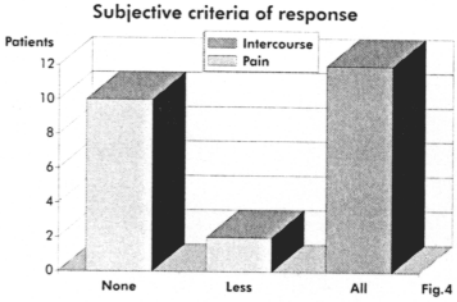

Fig.4

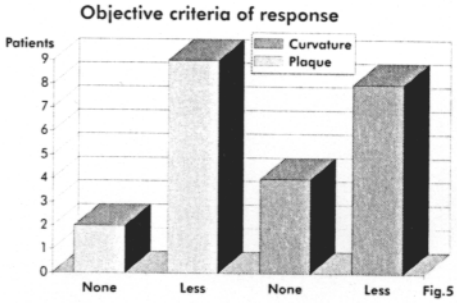

Fig.5

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