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Andrea Ledda (Ed.)

Vascular Andrology

Erectile Dysfunction, Priapism and Varicocele

With 25 Figures and 12 Tables



Springer

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Preface

Erectile dysfunction is a complex syndrome associated with and determined by several separate, vascular and nonvascular factors. In recent years the evolution of noninvasive vascular technology for investigating the macro- and microcirculation in vascular disorders has produced a large amount of information and has increased our knowledge of vascular pathophysiology.

In the specific field of vasculogenic erectile dysfunction two major problems have been defined using ultrasound based methods (duplex and color duplex scanning): the first is theoretically caused by decreased arterial inflow and the second by increased venous outflow. Erection is the result of the fine balance and timing between blood inflow and outflow, and these problems often overlap, as both vascular alterations are present in patients with vasculogenic erectile dysfunction.

Recently the role of the microcirculation has been studied using laser Doppler flowmetry and other methods. Preliminary results indicate that microcirculatory alterations may cause vasculogenic impotence even in the presence of a normal (arterial or venous) macrocirculation. In some smokers the presence of diffuse, chronic vasospasm may be a factor in causing erectile dysfunction, which may persist for weeks after smoking has been stopped.

The presence of localized (fibrotic or calcified plaques) or diffuse fibrosis in the corpora cavernosa has recently also been shown using high-resolution B-mode ultrasound. The altered compliance of fibrotic corpora cavernosa may be both an important consequence of an altered perfusion and a significant cause of perfusion alterations.

The role of venous leak has also been investigated, and possibly overstated. It is theoretically and clinically correct to suppose that complex biological and biochemical alterations such as erectile dysfunctions are not caused by a single problem but by a number of factors.

The role of pharmacology and its new interesting developments has also been recently evaluated. The efficacy of new drugs and new formulations or therapeutic solutions can be now quantitatively assessed measuring micro- and macrocirculatory parameters.

In the field of infertility it is now possible to evaluate reliably the presence of asymptomatic varicocele using color duplex. The test is fast and completely noninvasive, and it has been observed that different types of reflux of the pampiniform plexus (e.g., limited proximal reflux, reflux in the whole spermatic cord, diffuse reflux involving the testis) may be associated with different fertility parameters.

A very important recent achievement in this context is presented in this volume, namely, the description of the completely original development of the concept of vascular andrology. As most problems in andrology are related to vascular alterations, the evaluation and – where possible – quantification of these vascular abnormalities has produced a new branch of medical knowledge.

The integrated contributions of important, internationally known clinical research groups has produced a very interesting book, which demonstrates new trends in andrology and underlines the importance of vascular disorders. This volume will be very useful to andrologists, urologists, vascular surgeons, angiologists and to all specialists interested in the diagnostic evaluation of erectile disorders.

GIANNI BELCARO
ANDREA LEDDA



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