The clinical and echographic manifestations of dilatation deferentopathia

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Aims and objectives

Dilatational deferentopathia (DD) is dilatation the vas deferens (VD), accompanied atrophy, sclerosis, and loss of muscle tone wall of the VD in the outcome of the disease. The DD may have different genesis (congenital or acquired) and nature (obstructive or nonobstructive). Congenital non-obstructive the DD observed very rarely, in particular, in cases partial agenesia VD and seminal vesicles [1]. An example of the well shown acquired DD is postvasectomy syndrome, occurred in approximately 70% of cases after ligation of the VD to a male contraceptive [2 - 7]. In everyday clinical practice significantly more likely to have to meet with an acquired DD, which develops with the full or partial obstruction of the VD in patients with benign prostatic hyperplasia (BPH) and chronic prostatitis (CP), who have the background of the age androgen insuficiencia and no a history of operations on the seminiferous ways. Some clinical value of this DD remain not quite clear. The special publications on this subject in radiology literature are rare. The purpose of this study was to investigate peculiarities of clinical and echographic manifestations the DD in adult patients, who haven't any operations on the seminiferous ways. Objectives of the study were the following:

1) to study the frequency of the DD in adult patients;

2) to explore clinical manifestations the DD;

3) to explore the echographic manifestations the DD;

4) to examine the clinical significance of the DD.
Methods and materials

Prospective examination, including traditional clinical and laboratory investigations and ultrasound high-resolution (6 - 16 MHz), performed in 116 patients with BPH, 106 patients with CP and of 102 men in the control group. Age of the patients varied from 15 to 93 years of age (the average age of 54.4 ± 4.3 years). Identified by ultrasound changes of the organs of the reproductive system in 222 patients with BPH and CP were compared with data of morphological researches of the material obtained during various operations and biopsies in 102 (46%). The results obtained are analyzed with the nonparametric statistical methods and are presented as the median (minimum - maximum).
Results

The DD was found in 16 (14%) patients with BPH (14%), in 6 (6%) patients with CP and in 2 (2%) patients in the control group. The average age of the patients with the DD amounted to 67.5 years (36 - 86 years). 85% of patients with the DD were older than 55 years. Among patients with BPH the DD was observed more often at major sizes BPH (over 50 cm³). In patients with CP and the DD most often met the obstructive calculous CP with calcification ostia of the ductuli ejaculatoria. The clinical course of the DD was latent in 82% of patients. Other patients with the DD have experienced various pain in the scrotum from discomfort expressed orchialgia. The physical examination are marked increase pain testicular part of VD in 35% of patients. In 2 (0.1%) patients with the DD, accompanied by marked pain syndrome, there was an urgent revision of the scrotum about the alleged acute epididymitis. The main echographic criteria the DD included:

1) bilateral nature of the defeat of VD in patients with BPH and unilateral character of patients with chronic prostatitis with the disease transferred nonspecific acute vasitis;

2) sharply twisted form of testicular part of the VD;

3) extension of the outer and inner diameters of the ampoule VD more than 8 mm (6.2 - 12 mm) and 2 mm (1.8 - 3.0 mm), outer and inner diameters of testicular part of the VD - more than 5 mm (4.4 - 6.5 mm) and 1.6 mm (1.4 - 2.8 mm), respectively;

4) the ratio of the diameter of testicular part of the VD and body epididymis equal to 1 : 1 (in the control group - 1 to 2);

5) the clarity of the external and internal contours VD;

6) the preservation of the normal three-layer of the wall structure VD when visually determined by the thinning of the wall VD;

7) normal vascularization VD (low vascular density VD - less than 1 signal on square VD, low shear and high resistance blood flow VD).

Most often subjected to dilatation scrotal part of the VD (87%) and ampoule of the VD (92%). The DD combined with the other expansion diseases of the reproductive system in 3/4 of the patients (such as cystic dilatation glands prostate and seminal vesicles, cysts and tubular ectasia of the epididymis, cystic dilatation network testicle) [Fig. 1 - 7].
Fig. 1: Fig. 1. Longitudinal ultrasound of the scrotum. Chronic prostatitis. Dilatational deferentopathia. 1 - dilatation and thinning of the wall vas deferens, 2 - testis

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Fig. 2: Longitudinal ultrasound of the scrotum. BPH. Dilatational deferentopathia. 1 - dilatation and sharply twisted form of the vas deferens, 2 - epididymis' tail, 3- testis

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Fig. 3: 3D transrectal ultrasound of the prostate. Coronal plane. Chronic prostatitis. Dilatational deferentopathia. 1 - dilatation ampoule of the vas deferens, 2 - prostate

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Fig. 4: Transrectal ultrasound of the prostate. Chronic prostatitis. Dilatational deferentopathia. 1. Cystic transformation of prostatic gland. 2. Calcification ostia of the ductuli ejaculatoria

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Fig. 5: Transrectal ultrasound. BPH. Cystic transformation of the seminal vesicles (1). Cystic expansion of ampoules (2) and distal part of the vas deferens (3)

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Fig. 6: Longitudinal ultrasound epididymis and vas deferens. BPH with chronic prostatitis. Dilatational deferentopathia and tubular ectasia of the epididymis. 1 - epididymis’ head, 2 - epididymis’ body, 3 - epididymis’ tail, 4 - epididymis’ sinus, 5 - dilatation seminiferous tubules of the epididymis, 6 - dilatation of the vas deferens

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Fig. 7: Transverse ultrasound scrotum. Chronic prostatitis. The combination the tubular ectasia of the epididymis (1), dilatational of the vas deferens (2) and cystic dilatation network testis (3), 4 - testis, 5 - wall of the scrotum

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Conclusion

The clinical significance of the DD in patients, who have no a history of operations on the seminiferous ways, requires clarification. This DD can be the cause of pain, discomfort, and even undue operation; a manifestation of the age androgen insuficiencia and is likely to support a variety of chronic inflammatory diseases of the urinary organs. In either case, the DD is an occasion for in-depth examination of the patient. Taking into account the combined character of the DD, radiology tests when the DD is not only limited to one VD encompass the organs of the reproductive system as a whole.
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