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# 72

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## PELVIC MORPHO-TOPOGRAPHY AND PATHOGENESIS OF GENITAL PROLAPSE

**AIMS OF STUDY.** In order to study the pelvic bone system changes and their relation to genital prolapse pathogenesis, a pelvimetric study, followed by a biomechanical analysis of the obtained data, is carried out.

**METHODS.** The material encompasses 340 genital prolapses and 136 control cases (patients without genital prolapse, different age), subjected to colpocystography, from whose first position, the author performs the pelvimetric investigations. Except classic pelvimteric parameters, he introduces an original measure, called distance "X", characterizing the ventral pelvic part, directly exposed to the effects of intra-abdominal force "hammer". A biomechanical analysis tries to elucidate the negative effects of the pelvic bone changes on the pelvic suspensory and sustensory systems.

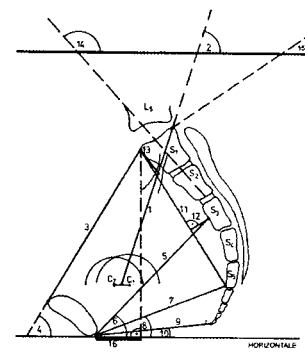


Fig 1. Scheme of measured pelvic parameters: 16-distance "X"

**RESULTS.** Computerized analysis of the data demonstrates that pelvic bone system in genital prolapses presents a progressive horizontalization and an infundibulary caudal enlargement. Namely, with total uterine prolapses, the middle pelvis is larger for 6,7%,pelvic outlet for 13,8% and the distance "X" for 56,7% in relation to control cases. The causes for these changes could be found in dorsal transposition of the inferior part of the sacrum and the antero-posterior rotation of the whole pelvis around a center located in the acetabulum. Aiming to determine the etiology of these changes, their relations to the patient age are investigated. Except, the identical character, the investigations demonstrate their progressivity, related to the aging process. Namely, the pelvis in the patient's group older than 61 years,is more horizontal (14,5°) and the distance "X" is larger for 91,4% than in controls - patients younger than 30 years.

At the other side, the study shows that the pelvis of control cases, without relation to their age, looks like the pelvis of the control patients and aged less than 30 years, and of that of nulliparous women, aged less than 35 years. Therefore, a simple conclusion is imposed by itself: the patients free of prolapse preserve their youthful pelvic morpho-topography!

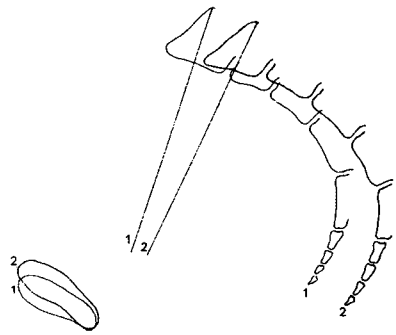

Fig 2. Scheme of pelvic bone shapes in controls (1) and total uterine prolapses (2).

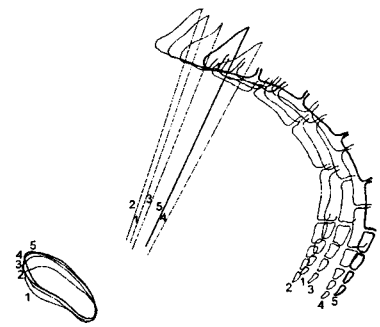

Fig 3. Schemes of pelvic bone shapes in patients' groups: controls (1), less than 30 (2), 41-50 (3), over 61 years old (4) and total uterine prolapses (5).

Biomechanical study of relations between the pelvic bone changes and the resistance of the suspensory and sustensory pelvic systems clearly demonstrates their negative effect to the pelvic statics. The enlargement of the pelvic outlet in total uterine prolapses decreases the resistance of their pelvic diaphragm three times more in comparison to the control cases. The augmentation of the distance "X" in the group of patients aged over 61 years, exposes the ventral part of their pelvis to a three times greater force than that calculated in the group of patients, aged less than 30 years.

**Conclusion.** Biomechanical approach in the study of the pelvic bone morpho-topography in genital prolapses puts a new light allowing better understanding of their complex pathogenesis and directing their surgical treatment.

# 73

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## RESPONSES TO CARBACHOL BUT NOT NEUROKININ A ARE ENHANCED IN DETRUSOR MUSCLE FROM CHILDREN WITH RECURRENT URINARY TRACT INFECTION

Aims of study

Neurokinin A (NKA) and substance P are neuropeptides found in primary afferent sensory fibres in bladder, although their role in the micturition reflex is unresolved. NKA is a potent contractile agent in isolated detrusor muscle taken from control adults, and from children with vesicoureteric reflux (VUR) [1]. One aim of this study was to investigate the distribution of NKA- and SP-immunoreactive nerves in child bladder using immunohistochemical teqniques.

Animal studies have shown that acute cystitis is associated with unstable detrusor contractions[2], but the responsiveness to agonists in humans with a history of recurrent bacterial cystitis has not been tested. In this study we have examined the contractility of human detrusor taken from children with a proven bacterial cystitis and vesicoureteric reflux (VUR), compared to children with previously sterile urine and VUR, who mainly came to attention via sibling tracing or antenatal detection. The agonists were carbachol and NKA.

Methods

*Patients:* Specimens were obtained from the bladder dome at the edge of the cystotomy incision of 57 patients (4 months to 12 years of age, 33 females) undergoing bilateral ureteric reimplantation to correct VUR. The microbiological details were recorded prospectively by the urologist, so as to characterize patients with recurrent proven bacterial cystitis.

*Immunohistochemical studies:* Streched specimen were fixed, washed, and stored in cryoprotectant. Slide-mounted sections (15 μm) were incubated in primary antibody (polyclonal mouse anti-NKA 1:4000 and rabbit anti-SP 1:8000) at room temperature overnight, washed and incubated in secondary antibody for 2 h. Sections were incubated in 0.025% 3,3'-diaminobenzidine with 0.2% nickel ammonium sulfate and 0.03% $H_2O_2$ for 20 min and washed. Slides were counterstained with haematoxylin and eosin.