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## THE REVIEW

of the Thesis Board member on the thesis of Kubin Nikita Dmitrievich on the topic:  
“Personalized approach to the treatment of patients with stress urinary incontinence and pelvic organ prolapse” submitted for the degree of Doctor of Medical Sciences with specialization 14.01.23. in Urology

The work of Kubin addresses two main problems which affect an ageing population, stress urinary incontinence and pelvic organ prolapse. For both, this thesis presents original contributions to pelvic floor surgical science.

The platform for these innovations is a very extensive literature review. In essence, the conclusions from the review are that traditional techniques which involve excision of the vagina and “native tissue repair” are ineffective. Kubin correctly concludes that at least as regards uterine or apical prolapse, the problem lies in weak supporting ligaments, which need to be repaired.

The “Hybrid” technique consists of an improvement in the previously reported infracoccygeal sacropexy (“posterior IVS”). The “Hybrid” method uses a perineal approach to penetrate the sacrospinous ligament identical to the infracoccygeal sacropexy. The improvement lies in placing the tape on the anterior surface of the cervix. This is an excellent innovation as it also addresses the main cause of cystocele, the so-called “transverse defect”, dislocation of the pubocervical fascia and cardinal ligament from the cervical ring. The tape “glues on” these structures to the tape which effectively creates a “neocervix”. The distal herniation which is known as a “central” and/or “lateral” defect occurs in about 20% of women in addition to the transverse defect. It is repaired by approximation of the suburethral fascia. What makes this distal repair effective is that the tape is a strong structural component and it holds the distal tissues in place while they heal.

This Hybrid method has a sound anatomical and biomechanical basis and this is reflected in the high anatomical and symptomatic cure rates reported plus very low de novo cystocele occurrence, which was up to 16- 20% in the original posterior IVS .

The adjustable midurethral sling shows similar ingenuity. Two suture threads placed through the vaginal tissues allow the surgeon to adjust the tension of the sling post-operatively, to both

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tighten the sling and to loosen it. The mechanism of continence is by the 3 directional muscles closing the urethral tube so the urethral resistance within the tube is sufficiently greater than that in the bladder so as to prevent urine flow to the outside. The problem is that intraurethral resistance to flow is exponentially determined, inversely to the 4<sup>th</sup> power of the urethral radius (Poiseuille's Law). This exponential relationship makes it virtually impossible to achieve the correct tension using a conventional sling. Herein lies the innovative beauty of the post-operatively adjustable sling.

In summary. This is an impressive and comprehensive thesis with high academic value. The operations for prolapse and SUI repair are innovative. They address important defects in the original techniques which I myself developed. I consider these new methods a significant improvement on my original work. I recommend both techniques highly.

The thesis of Kubin Nikita Dmitrievich on the topic: "Personalized approach to the treatment of patients with stress urinary incontinence and pelvic organ prolapse" meets the main requirements stated by the Order № 6821/1 dated September 01, 2016 "About the conferring of degrees in Saint-Petersburg State University". The doctoral candidate Kubin Nikita Dmitrievich is recognized to confer the degree of Doctor of Medical Sciences with specialization 14.01.23. in Urology. Article 11 of the mentioned Order is not violated by the defender of thesis.

Thesis Board member



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