

R.M.Banakhevych  
P.O.Grytsenko

State institution  
“Dnipropetrovsk  
medical academy of  
the Ministry of Health  
of Ukraine”

**Key words:** genital prolapse, recurrence, histology, vaginal mucosa, ligament of the uterus.

Received: 20.02.2014  
Accepted: 22.03.2014

UDC 618.131/.138-007.43/.44-036.87-092-07-089-036.83

## HISTOLOGICAL INVESTIGATION OF BIOPSY SPECIMENS OF THE VAGINAL MUCOSA AND UTERINE LIGAMENTS AMONG THE WOMEN WITH THE GENITAL PROLAPSE RECURRENCE

*The study was performed as the part of research work “Developing new approaches to diagnosis, treatment and rehabilitation of medical assistance in gynecological pathology with the use of new and minimally invasive medical technologies” (state registration number 0112U002831).*

**ABSTRACT. Background.** In most cases disorganization of connective tissue structures can be observed in the ligament apparatus of the uterus and cause a high risk of genital prolapse formation after a hysterectomy or prolapse recurrence after post-plastic surgery. These results are to be clarified while defining the relationship between the level of connective tissue structures disorganization and changes in the vaginal mucosa. **Objective.** To identify the peculiarities of the microscopic structure of fascial-ligamental genital apparatus and vaginal mucosa among the patients with genital prolapse recurrence. **Methods.** In the course of surgery, parts (fragments) of the vaginal mucosa and cardinal ligaments tissues from 60 patients with the genital prolapse recurrence (group R) and 30 patients without evidence of prolapse (group K) were taken for morphological studies. Collection of anatomical material - parts of the vaginal mucosa and ligaments - was conducted within the areas of medical intervention in gynecology during the surgery with the removal of uterus and vagina. **Results.** Analysis of histological structure of cardinal ligament showed that among the total number of patients 49 people (81,7%) demonstrated signs of edema and a destruction of connective tissue components of the ligament. In all women together with the violation in vaginal mucosa the abnormalities in the ligaments structure were observed. Identified changes were mostly prominent in the vascular component of the uterine ligaments. Thinning of the epithelial layer of vaginal mucosa among the women with genital prolapse recurrence has been defined as well as a significant reduction in the total number of vessels in the uterine ligaments. **Conclusion.** It has been revealed that the signs of atrophy of the epithelial layer of a vaginal mucosa are observed in 68,3%, while the edema of stromal component – in 80,0% of total cases with genital prolapse recurrence. The signs of connective tissue disorganization were revealed in 81,7% of uterine ligaments investigation. These histological peculiarities justify the usage of synthetic implants in cases with genital prolapse recurrence.

© R.M.Banakhevych, P.O.Grytsenko, 2014  
✉ banahevich@yandex.ua

### Citation:

Banakhevych RM, Grytsenko PO. [Histological investigation of biopsy specimens of the vaginal mucosa and uterine ligaments among the women with the genital prolapse recurrence]. Morphologia. 2014;8(1):16-20. Ukrainian.

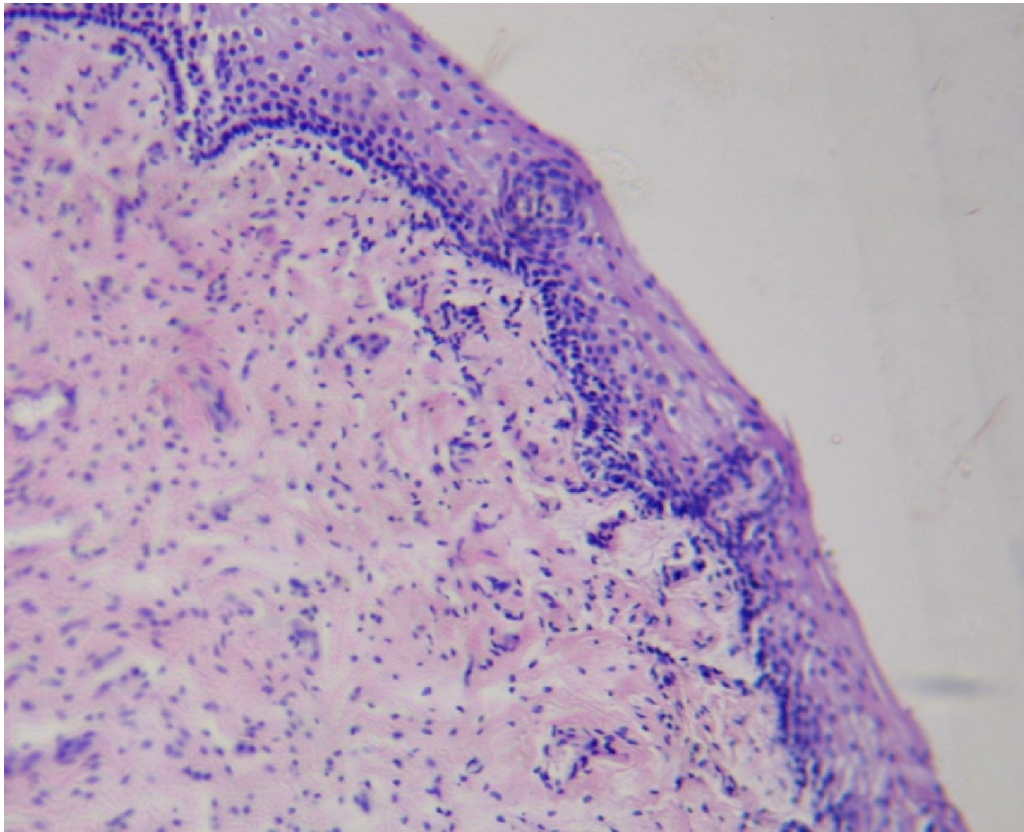


Fig.1. Histological structure of vaginal mucosa in patient with genital prolapse recurrence. Van Gieson's staining.  $\times 100$ .

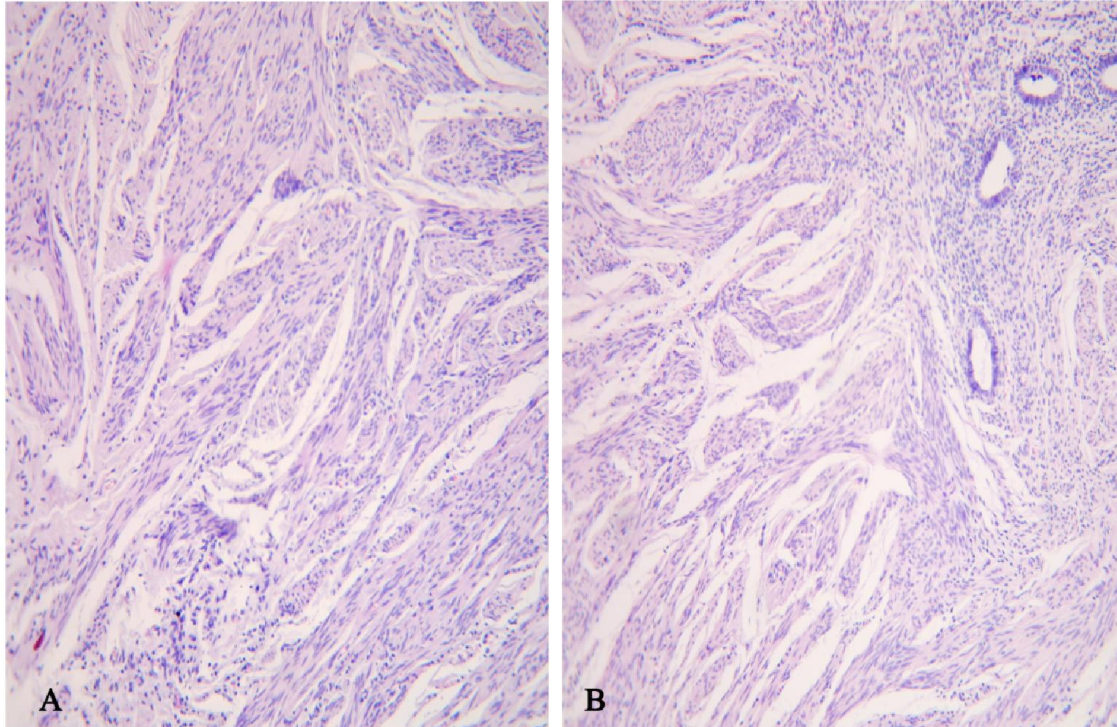


Fig.2. Histological structure of cardinal ligament. A – group K patient. B – group R patient. Van Gieson's staining.  $\times 100$ .

## References:

1. Blandon RE, Bharucha AE, Melton LJ 3rd, Schleck CD, Babalola EO, Zinsmeister AR, Gebhart JB. Incidence of pelvic floor repair after hysterectomy: A population-based cohort study. *Am J Obstet Gynecol.* 2007 Dec;197(6):664.e1-7. Cited in: PubMed; PMID: 18060973; PMCID: PMC2562278.
2. Abbas SM, Bissett IP, Neill ME, Macmillan AK, Milne D, Parry BR. Long-term results of the anterior Délorme's operation in the management of symptomatic rectocele. *Dis Colon Rectum.* 2005 Feb;48(2):317-22. Cited in: PubMed; PMID: 15812584.
3. Crafoord K, Sydsjö A, Nilsson K, Kjølhede P. Primary surgery of genital prolapse: a shift in treatment tradition. *Acta Obstet Gynecol Scand.* 2006;85(9):1104-8. Cited in: PubMed; PMID: 16929416.
4. Suhih GT, Danilov AY, Botasheva DA. [Search for etiological factors of genital prolapse]. *Rossiyskiy vestnik akushera-ginekologa.* 2010;10(5):28-32. Russian.
5. Diez-Itza I, Aizpitarte I, Becerro A. Risk factors for the recurrence of pelvic organ prolapse after vaginal surgery: a review at 5 years after surgery. *Int Urogynecol J Pelvic Floor Dysfunct.* 2007 Nov;18(11):1317-24. Epub 2007 Feb 28. Cited in: PubMed; PMID: 17333439.
6. Jeon MJ, Chung SM, Jung HJ, Kim SK, Bai SW. Risk factors for the recurrence of pelvic organ prolapse. *Gynecol Obstet Invest.* 2008;66(4):268-73. doi: 10.1159/000149851. Epub 2008 Aug 6. Cited in: PubMed; PMID: 18685255.
7. Medina CA, Candiotti K, Takacs P. Wide genital hiatus is a risk factor for recurrence following anterior vaginal repair. *Int J Gynaecol Obstet.* 2008 May;101(2):184-7. doi: 10.1016/j.ijgo.2007.11.008. Cited in: PubMed; PMID: 18215663.
8. Semenuk AA, Bitukov NN, Pospelov IV. [Treatment of patients with urogenital prolapse and urinary incontinence]. *Urologiia.* 2006;1:61-4. Russian.
9. Popov AA, Mananikova TN, Shaginyan GG. [Application of littleinvasion technologies is in treatment of the complicated forms of prolapsa of genitalia]. *Akusherstvo i ginekologiia.* 2004;(3):32-4. Russian.
10. Smirnov AB, Khvorov VV. [Comparative estimation of methods of surgical correction of rectocele]. *Khirurgiia.* 2006;10:22-26. Russian.
11. Popov AA. [The modern approach to the correction of rectocele in gynecological patients with genital prolapse]. *Rossiyskiy vestnik akushera-ginekologa.* 2006;6(2):38-40. Russian.
12. Fialkow MF, Newton KM, Weiss NS. Incidence of recurrent pelvic organ prolapse 10 years following primary surgical management: a retrospective cohort study. *Int Urogynecol J Pelvic Floor Dysfunct.* 2008 Nov;19(11):1483-7. doi: 10.1007/s00192-008-0678-8. Cited in: PubMed; PMID: 18682876.

13. Digesu GA, Chaliha C, Salvatore S, Hutchings A, Khullar V. The relationship of vaginal prolapse severity to symptoms and quality of life. *BJOG*. 2005 Jul;112(7):971-6. Cited in: PubMed; PMID: 15958002.
14. Bujanova SN. [Role of connective tissue dysplasia in the pathogenesis of prolapse and urine incontinence]. *Rossiyskiy vestnik akushera-ginekologa*. 2005;(5):19-23. Russian.
15. Zaporozhan VN, Procepko AA, Drachevskaya MN. [Prevention of prolapse during transabdominal hysterectomy - a new approach]. *Reproduktivnoie zdorovie zhenschiny*. 2004;(1): 82-6. Ukrainian.
16. Bachaev VV, Gorin VE, Gunter VE. [Functional violations at manifestation of genital prolapse]. *Zhurnal akusherstva i zhenskikh bolezney*. 2009;58(5):M17–M18. Russian.
17. De Lancey JO. [The hidden epidemic of pelvic floor dysfunction: achievable goals for improved prevention and treatment]. *Am J Obstet Gynecol*. 2005 May;192(5):1488-95. Cited in: PubMed; PMID: 15902147.
18. Gasparyan SA, Afanasova EP, Starichenko LV. [Connective tissue dysplasia (CTD) as a cause of genital prolapse]. *Zhurnal akusherstva i zhenskikh bolezney*. 2009;58(5):M29-M30. Russian.
19. Kadurina TI, Gorbunova VN, editors. *Displasiya soedinitelnoy tkani [Connective tissue dysplasia]*. Saint Petersburg: Elbi; 2009. 714 p. Russian.
20. Whiteside JL, Weber AM, Meyn LA, Walters MD. Risk factors for prolapse recurrence after vaginal repair. *Am J Obstet Gynecol*. 2004 Nov;191(5):1533-8. Cited in: PubMed; PMID: 15547521.