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STUDY OF BUCCAL EPITHELIUM AS A METHOD OF DIAGNOSIS OF UTERINE MYOMA

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Uterine myoma is one of the reasons that lead to infertility and a number of serious complications during pregnancy. Relevant is to find methods for early diagnosis of this disease. At the same time research buccal epithelium has several advantages because of its painless and informative, and is characterized by ease of collection of material for research. Below you will see the results of the study nuclei of buccal epithelium in patients with uterine cancer compared with the control group. For a group of patients diagnosed with uterine fibroids detected buccal epithelium following characteristics: shape core - spindle and uncertain; membrane nucleus - split evenly thick, sealed, reinforced sides and loosened; color core - dark, dark to a mirror, with grain sizes.

Key words: uterine fibroids, buccal epithelium, the nuclei of cells; morphostructural changes.

Introduction

Reproductive health problems according to WHO is a global medical and social problem [1]. The development of new ways to prevent and treat infertility is one of the primary tasks of medicine. One of the reasons leading to infertility is myoma of the uterus [2]. But also at the onset of pregnancy patients with this diagnosis constitute a high-risk group because of a significant number of miscarriages; complications during childbirth and in the postpartum period. The high incidence of tumor necrosis during pregnancy and after childbirth has been proven [3, 4]. Also, the revealed tendency to "rejuvenate" this diagnosis - the detection of uterine fibroids in women up to 20-25 years old, that did not realize the reproductive function [5] is also critical. Consequently it is important to search for the optimal method for diagnosing uterine fibroids in the early stages.

Objective: to study buccal epithelium as one of the methods of early diagnosis of pathological conditions, which has a number of advantages due to its non-invasiveness, painlessness and informative-

ness, and also the convenience of sampling the material for the study [6, 7].

Contingents

The study was conducted in 50 women with a confirmed diagnosis of uterine myoma. The control group consisted of 50 healthy women of the same age group.

Objects. Fence and study of buccal epithelium passed

Methods

The cytomorphobiophysical of the cells of the buccal epithelium was carried out as follows:

Biomaterial sampling was taken in the morning, on an empty stomach, before taking the carbohydrates, not less than 1-1.5 hours after brushing the teeth, possible intake of hot fluid (following these rules the likelihood of mechanical interference, that can lead to temporary cell changes Buccal epithelium, significantly reduces).

A sample of buccal epithelium was taken from the inner surface of the cheek (middle layer) was dissolved with a drop of phosphate buffer (pH = 7), and then a spatula was placed between the two coverslips.

The buffer residues were then gathered by filter paper. Then the sample was placed under a microscope. The analysis was carried out at a zoom from 100 to 400 times.

Evaluation of cytomorphological parameters of the buccal epithelium sample was carried out by determining the percentage of the shape of the nuclei, the state of their membranes, inclusions in the cytoplasm of cells and other cytomorphological indices, on the basis of which it is possible to diagnose pathological processes.

Priority for the diagnosis of myomas are the changes in the parameters of the nucleus of buccal epithelium cells and their percentage ratio (nuclear shape, color and core density, the quality of the buccal epithelium cell membrane core), the percentage of parameters of that cell (in particular, the cytoplasm, cell membrane and cell shape changes).

To carry out diagnostics of the characteristic features for the investigated pathology the entire sample was considered, counting specific accumulations of buccal epithelial cells and varieties of such specific clusters. The analysis of one sample took approximately 15-20 minutes. The numerical (percentage) data obtained from the analysis of morphological structure changes in the buccal epithelium (analyzed for 100 cells of each participant in the study) was evaluated using statistical methods: descriptive statistics methods (arithmetic mean and standard deviation), Student's test for independent samples with unequal variance, and the evaluation of confidence intervals and differences in the percentage of features using the criterion

“Angle Fisher Transformation.”

Results

The main groups of indicators of buccal epithelium in patients with myoma in comparison with the control group were investigated. This article presents the results of the study of changes in a number of parameters of buccal epithelium nuclei. For each swab of each participant in the study, 100 cells of buccal epithelium were analyzed. The values given in the tables represent the percentage of cells with corresponding morphostructural parameters.

The tables provide descriptive statistics for each of the indicators (mean, standard deviation) for the comparison and control groups, the absolute difference in the mean values of the indicators in the comparison group relative to the control, and the percentage difference: thus, if in the comparison group the averages are larger than the control group, then the differences are positive, if on the contrary - then negative. The values of Student's t-criterion for two independent samples are also presented and the corresponding significance level of the differences. Differences were considered reliable if the level of significance was $p < 0.05$.

Table 1

Analysis of data and differences in the values of the shape of the buccal epithelium nucleus in samples of patients with uterine myomas and the control group of healthy women

	Mean: control	Mean: buccal epithelium with myomas	The absolute difference between the means	Difference in percentage in groups of myomas concerning to control, %	The values of Student's t-criterion	p	Standard deviation - control	Standard deviation - buccal epithelium in myomas
Rounded shape of the nucleus	41,44839	35,48055	-5,96784	-14,3982	5,9091	0	2,483795	6,695546
Oval core shape	28,65339	24,02055	-4,63284	-16,1686	6,2867	0	2,471369	4,587582
Elongated shape of the nucleus	19,95292	13,58966	-6,36326	-31,8914	8,7942	0	1,817305	4,782807
Fusiform shape core	2,52948	4,66411	2,13463	84,39007	-4,4624	0,000022	1,212236	3,157825
Undefined core form	7,41581	22,24514	14,82933	199,9691	-20,766	0	4,760859	1,682946

As for the shape of the cell nucleus, statistical significant differences with a high significance level $p < 10^{-4}$ are observed in all indicators. At the same time, the control

is much more often rounded, oval, elongated, and in the comparison group - fusiform and indefinite.

Differences in the characteristics of

Table 2

Analysis of data and differences in the values of the membrane parameters of the buccal epithelium nucleus in samples of patients with uterine myomas and a control group of healthy women

	Mean: control	Mean: buccal epithelium with myomas	The absolute difference between the means	Difference in percentage in groups of myomas concerning to control, %	The values of Student's t-criterion	p	Standard deviation - control	Standard deviation - buccal epithelium in myomas
Stratified nucleus membrane	31,4918	54,78131	23,28949	73,9541	-8,2454	0	2,194215	19,85162
Compacted nucleus membrane	28,0236	34,7469	6,72342	23,9921	-5,7223	0	1,258695	8,21228
Core membrane without characteristic bulges	28,9098	20,91508	-7,9947	-27,654	5,1819	0,000001	4,55995	9,91056
Thickened core membrane	30,4887	54,63703	24,14831	79,2041	-14,6781	0	2,790011	11,29376
Core membrane thickened at the sides	31,2776	47,51374	16,23613	51,9098	-10,277	0	2,34936	10,92144
Membrane of the core fluffy	37,2174	55,9849	18,7675	50,4267	-11,0544	0	4,410451	11,16533

Table 3

Analysis of the data and their effect on the color indices of the buccal epithelium nucleus in samples of patients with uterine myomas and control group of healthy women

	Mean: control	Mean: buccal epithelium with myomas	The absolute difference between the means	Difference in percentage in groups of myomas concerning to control, %	The values of Student's t-criterion	p	Standard deviation - control	Standard deviation - buccal epithelium in myomas
light color of the core	51,9733	39,1247	-12,848	-24,721	12,3432	0	6,7925	2,83520
dark color of the core	17,2642	25,0582	7,7941	45,1467	-5,4507	0	8,7249	5,11022
color of the nucleus is dark to specular	1,3083	3,8458	2,53751	193,950	-6,3918	0	1,1664	2,55336
core color granularity	38,8543	54,1282	15,2738	39,3104	-8,0362	0	13,0002	3,40743
core color is gray heterogenous with dark gray inclusions	29,4546	31,9714	2,5168	8,54471	-2,1441	0,03450	7,56402	3,41794

the core membrane are also highly significant. In this case, the group with fibroids is more often observed stratified, compacted, thickened on the sides and fluffy, and in the control - membranes without characteristic thickening.

In terms of the color of the nucleus, there are highly significant differences, except for the color of the gray heterogeneous core with dark gray inclusions, which differences are also significant, although there are more such nuclei in the group with myomas. Also in the myom group, there are more nuclei with a dark, dark to specular color, with a granularity, although there are more light-colored nuclei in the control.

Conclusion:

the research showed high information content of the study of buccal epithelium in the diagnosis of uterine myomas in women. Statistically and in most cases clinically significant differ-

ences in the morphostructure of the cells of patients with uterine myoma in contrast to the control group were detected. For the group with the established diagnosis, the following features of the buccal epithelial cells most common in the group were characteristic: the shape of the nucleus is fusiform and undefined; The membrane of the nucleus is stratified, compacted, thickened at the sides, and fluffed; Color of the nucleus - dark, dark to specular, and with granularity; The shape of the cell is undefined; Cell membrane - stratified, compacted, partially destroyed with ruptures, and also fluffy; Color of cytoplasm - transparent and like a parchment; Characterized by the presence of stuck together cells, lined in characteristic patterns and paths. With further processing the method can be recommended for early diagnosis of uterine myomas, as a screening method.

Summary: uterine myoma is one of the reasons that lead to infertility and a number of serious complications during pregnancy. Relevant is to find methods for early diagnosis of this disease. At the same time research buccal epithelium has several advantages because of its painless and informative, and is characterized by ease of collection of material for research. Below you will see the results of the study nuclei of buccal epithelium in patients with uterine cancer compared with the control group. For a group of patients diagnosed with uterine fibroids detected buccal epithelium following characteristics: shape core - spindle and uncertain; membrane nucleus - split evenly thick, sealed, reinforced sides and loosened; color core - dark, dark to a mirror, with grain sizes.

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Резюме

ИССЛЕДОВАНИЕ БУККАЛЬНОГО ЭПИТЕЛИЯ КАК МЕТОД ДИАГНОСТИКИ МИОМЫ МАТКИ

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Миома матки является одной из причин, приводящих к бесплодию и ряду серьезных осложнений во время беременности. Необходимо найти

методы ранней диагностики этого заболевания. В то же время исследование буккального эпителия имеет ряд преимуществ из-за его безболезненности, информативности и простоты сбора материала для исследования. В статье приведены результаты изучения ядер буккального эпителия у пациентов с раком матки по сравнению с контрольной группой. У пациентов с миомой матки были выявлены морфо-структурные изменения ядер клеток буккального эпителия по сравнению с контрольной группой.

Ключевые слова: миома матки, буккальный эпителий, ядра клеток; Морфоструктурные изменения.

Резюме

ДОСЛІДЖЕННЯ БУККАЛЬНОГО ЕПІТЕЛІЮ ЯК МЕТОД ДІАГНОСТИКИ МІОМИ МАТКИ

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Міома матки є однією з причин, що призводять до безпліддя і ряду серйозних ускладнень під час вагітності.

Необхідно знайти методи ранньої діагностики цього захворювання. У той же час дослідження буккального епітелію має ряд переваг через його безболісність, інформативність та простоту збору матеріалу для дослідження. У статті наведені результати вивчення ядер буккального епітелію у пацієнтів з раком матки в порівнянні з контрольною групою. У пацієнтів з міомою матки були виявлені морфоструктурні зміни ядер клітин буккального епітелію в порівнянні з контрольною групою.

Ключові слова: міома матки, буккальний епітелій, ядра клітин; Морфоструктурні зміни.

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УРОВЕНЬ С-РЕАКТИВНОГО БЕЛКА ПОСЛЕ КАТЕТЕРНОЙ АБЛЯЦИИ ФИБРИЛЛЯЦИИ ПРЕДСЕРДИЙ И ЕГО СВЯЗЬ С РЕЦИДИВОМ

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Цели: В данной работе исследовалась связь вЧЦРБ с рецидивированием фибрилляции предсердий после процедуры катетерной радиочастотной абляции.

Методы: В исследование вошло 46 пациентов с персистирующей формой фибрилляции предсердий. У всех пациентов за 6 месяцев до и 12 месяцев после катетерной радиочастотной абляции измерялся уровень вЧЦРБ и оценивалась его связь с рецидивом аритмии в конце послеоперационного периода.

Результаты: Период наблюдения составил $12,3 \pm 6,4$ месяца, у 16 (34,7 %) пациентов наблюдался рецидив аритмии после процедуры катетерной радиочастот-