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HISTOLOGICAL FEATURES OF PROSTATE CANCER

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Annotation
The article is devoted to the morphological characteristic of the prostate cancer. It has been revealed that morphological diagnosis of prostate cancer is difficult because signs of malignancy can be hardly noticeable, which increases the probability of false-negative result. At the same time there are many benign processes that mimic a malignant tumor, which can lead to misdiagnosis. In recent years, the use of immunohistological markers has been recommended, which can be used to determine their level, which is elevated in prostate cancer.

Keywords: Prostate cancer, morphology, characteristics.

Relevance
In recent years, due to the widespread introduction of prostate specific antigen detection, the frequency of diagnosing localized and locally advanced stages of prostate cancer has increased significantly. In Europe and the United States, nonpalpable stages of prostate cancer account for 75% of detected cases. Based on initial research results, it can be said that screening based on antigen testing reduces prostate cancer mortality by about 20%, but leads to the risk of detecting a clinically insignificant mass. It has been noted that a differentiated approach to newly diagnosed cases of pathology is necessary, assessing the individual risks of the patient [2,7].
At the same time prostate cancer remains the most frequent solid tumor in the developed countries. According to preliminary calculations about 250,000 new cases of this pathology are registered every year in the United States, and about 30,000 men die from this disease [1,10].

Purpose of the Study:
Establish morphological characteristics of prostate cancer.

Material and Methods of Research

Living patients with prostate cancer who were hospitalized in Samarkand regional branch of the Republican Specialized Scientific-Practical Medical Center of Oncology and Radiology (20) were studied as objects, their medical documents (case records) as well as results of clinical and laboratory tests, data of morphological studies (hematoxylin and eosin staining of micro preparations) were analyzed.

Results and Discussion

In 70% of cases, carcinoma of the prostate is localized in its peripheral area (usually in the posterior part of the gland, which allows the tumor to be propalpated by rectal finger examination). It is characteristic that on the section of the gland the tumor tissue is granular and dense. If the tumor is located in the prostate tissue, it is poorly visualized, but easier to detect by palpation. Local spreading usually affects the periprostatic tissue, the seminal vesicles, and the base of the bladder, which can lead to urethral obstruction in advanced forms of the disease. Metastases first spread through the lymphatic vessels to the level of the hilar lymph nodes and reach the para-aortic lymph nodes. Hematogenous dissemination occurs mainly in bone, especially in the bones of the axial skeleton, but in some cases there is massive dissemination to internal organs (the exception rather than the rule). Bone metastases are usually osteoblasts and, if found in men, clearly indicate the presence of prostate cancer. The most frequently affected area is the lumbar spine, followed (in descending order of frequency) by the proximal femur, pelvic bones, thoracic spine, and ribs.

Histologically, most prostatic tumors are adenocarcinomas, which are characterized by well-defined, easily defined glandular structures. Tumor glands are usually smaller in size and lined by a single layer of cubic cells or by low cylindrical epithelial cells. Tumor glands are located closer to each other and, characteristically, lack branching or papillary invaginations. Tumor glands lack external basal layer typical for glands of normal organ. The cytoplasm of tumor cells varies from dull-light, typical for cells of unchanged glands, to distinctly amphophilic. The nuclei are large and often contain one or more large nuclei. Some differences in the size of nuclei and their shape are observed, but, in general, pleomorphism is not very pronounced. The patterns of mitosis are uncharacteristic. The problem with cancer diagnosis is not only the insufficient amount of tissue obtained during needle biopsy for histological examination, but also the fact that often the biopsy specimens contain only a few tumor glands among many normal ones (Figure 1). Morphological diagnosis of prostate cancer is also difficult, because signs of malignancy may be subtle, which increases the probability of a false negative result. There are also many benign

processes that mimic a malignant tumor, which can also lead to misdiagnosis. Although there are several histological features specific to prostate cancer, such as perineural invasion, the diagnosis is made when a combination of tissue, cellular, and some additional features are present. As noted earlier, the main hallmark of a benign prostate process is the presence of basal layer cells, whereas their absence is indicative of prostate cancer (Fig. 1) [4]. Pathologists use this feature by using immunohistological markers to detect cells of the basal layer. Immunohistochemical testing can be used to determine the level of AMACR, which is elevated in prostate cancer. Most malignant prostate tumors are AMACR-positive. The sensitivity of this method varies from 82 to 100%. The use of these markers to improve the accuracy of prostate cancer diagnosis has its limitations because of the possibility of false-positive and false-negative results, so it is also necessary to perform routine hematoxylin and eosin staining.

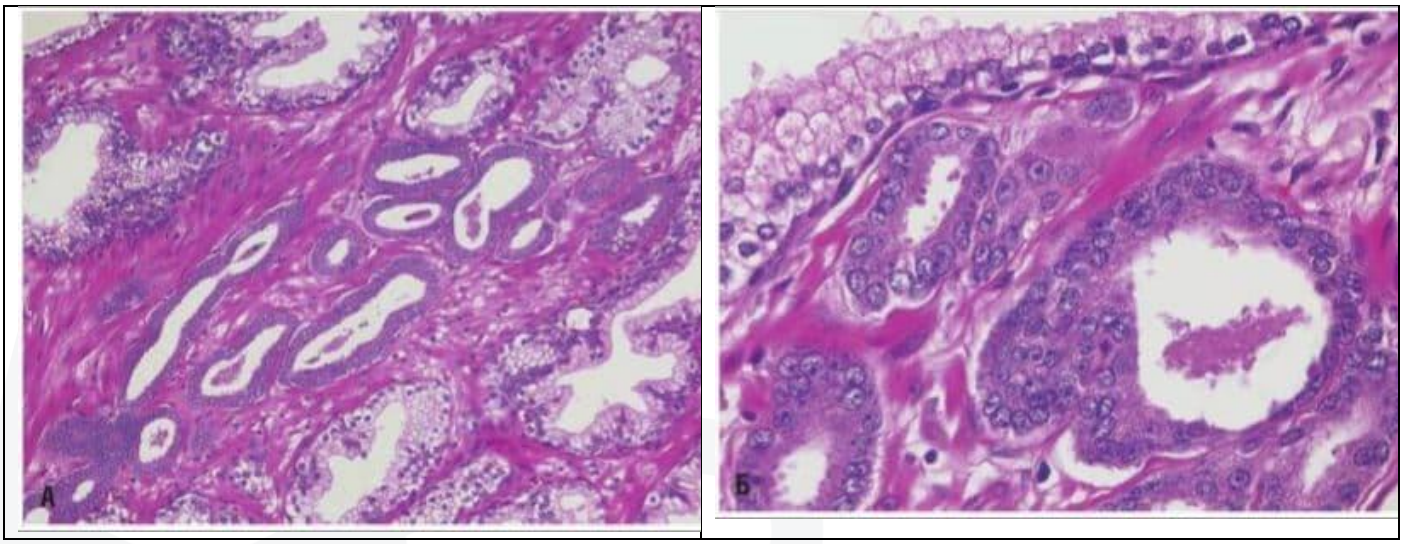

Fig. 1. (A) Adenocarcinoma of the prostate characterized by small tumor glands arranged in groups between larger normal glands. (B) Several small tumor glands characterized by enlarged nuclei, prominent nuclei, and dark cytoplasm are seen under high magnification [top].

It has been noted that PSA detection by immunohistochemical examination in prostate tissue samples can also help a pathologist to establish the presence of a metastatic tumor in the prostate [6]. Hormone therapy in patients with stage No has not been shown to improve surgical outcomes [8]. Hormone therapy in patients with locally advanced disease (T3) did not reduce the risk of tumor cells along the incision margin [3,9].

Conclusions

Thus, the results of the studies obtained testify to the fact that histological criteria of prostate cancer are incompletely developed. At the same time the morphological diagnosis of prostate cancer is difficult, because the signs of malignancy can be hardly visible, which increases the probability of a false negative result. At the present time, the use of immunohistological markers is necessary, and their level is increased in prostate cancer.

LITERATURE

1. Bhojani N., Salomon L., Capitanio U., et al. External validation of updated Partin tables in a cohort of French and Italian men // Int. J. Radiat. Oncol. Biol. Phys. 2009. Vol.73 - P.347-52.
2. Dervish I.H., Kupelian P.A. Continuing trends in the migration of pathological stages in radical prostatectomy specimens. //Urol. Oncol. - 2004. - Jul-Aug; 22(4): - P. 300-6.
3.Eckersberger E., Finkelstein J., Sadri H., Margreiter M., Djavan B. et al Screening for Prostate Cancer: A Review of the ERSPC and PLCO Trials. //Reviews in Urology. - Vol. 11 № 3. - 2009. - P. 127-133
4. Eble J.N. et al: Pathology and genetics: Tumors of the urinary system and male genitalia. WHO classification of tumors. World Health Organization, Geneva, - 2004. - 299 p.
5. Epstein J.I., Netto G.J.. Biopsy Interpretation of the Prostate. Philadelphia, JB Lippincott Williams & Wilkins, 2008. ISBN9781469887517- 440 p.
6. Gretzer M.B., Partin A.W.. PSA markers in the detection of prostate cancer. //Urol. Clin. North. Am. - 30, 2003. - 30 (4): - P. 677-86. doi: 10.1016/s0094-0143(03)00057-0.
7.Islamov Sh.E. Subjectivity in defects in rendering medical aid // European science review, Vienna, 2018. - №11-12. – P. 95-97.
8. Ilkhomovna, K. M., Eriyigitovich, I. S., & Kadyrovich, K. N. (2020). Morphological Features Of Microvascular Tissue Of The Brain At Hemorrhagic Stroke. The American Journal of Medical Sciences and Pharmaceutical Research, 2(10), 53-59. https://doi.org/10.37547/TAJMSPR/Volume02Issue10-08
9. Ilkhomovna, K. M., Kadyrovich, K. N., & Eriyigitovich, I. S. (2020). Clinical and demographicquality of life for patients with ischemic stroke in Uzbekistan. ACADEMICIA: An International Multidisciplinary Research Journal, 10(10), 883-889.
10. Van de Kwast T. et al Single Prostatic Cancer Foci on Prostate Biopsy.// Eur Urol supp 7. 2008. – P. 549-556.