

Pathomorphology of Fibrous Polyps of the Female Urethra

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Abstract This article studied histotopography and specific morphological changes in fibrous urethral polyps in women. As a material, 32 biopsy materials obtained from patients treated in 2018-2021 were histologically examined. in the department of urology of the clinic of Andijan State Medical Institute. With a fibrous polyp, the presence of many fibrous structures in the connective tissue in the area directly under the integumentary epithelium is determined, they are characterized by a small number of blood vessels. In the deep parts of the stroma, connective tissue cells and fibrous structures are rarely located due to the presence of swelling in the interstitium, they contain blood vessels. An analysis of the etiology of the urethral polyp showed that if we take into account the causes and pathogenesis of the polyp, then the development of the polyp tissue is accompanied by inflammatory, degenerative and dysregenerative processes, and it was found that the changes characteristic of these processes persist in the stroma, which is the basis of the polyp.

Keywords Urethra, Polyp, Fibrosis, Morphology, Histotopography, Inflammation, Dystrophy, Destruction

1. Introduction

Female urethral polyps are usually located in the area of the external outlet, clinically they cause pain, stinging during urination, pollaturia, stranguria, urethrorrhagia and wetness of urine [1,2,3]. The causes of urethral polyps are poorly understood and remain unclear. According to the majority of scientific studies, polyps of the urethra in most cases are not considered safe tumors, but are hyperplastic processes characterized by focal proliferation of the epithelium due to the violation of the relationship between the mesenchymal tissues and the epithelium in the urethra wall for unknown reasons [4,5,6]. In appearance, urethral polyps are tumor-like structures in the area of the back lip of the external outlet opening, the size of which is from 2 mm to 1-2 cm, and the outgrowth often consists of a wide leg, the surface is smooth, sometimes hemorrhages and erosions are detected. There are 2 types of polyp tissue structure: fibrotic and adenomatous. Fibrous polyp often occurs alone on the basis of infectious and inflammatory processes. Fibromatous polyp grows slowly and rarely spreads to surrounding tissues. In some cases, elastic fibers have grown a lot, blood vessels have proliferated, and angiomatous tissue may have appeared [2,4,6]. This type of polyp is called urethral caruncle. Urethral caruncle was first identified by Fere in 1926 as a structure rich in blood vessels the size of a raspberry, located in most cases on the back wall of the urethra, strongly hyperemic in appearance, and bleeding when touched. In

addition, in the fibromatous type of urethral polyp, the reasons for the growth of coarse fibrous connective tissue in the stroma, the relatively low development of blood vessels and the development of myxomatous process changes in the interstitial substance, the main reason why this type of polyp is relatively common, have not been fully studied.

2. Material and Methods

As material, 32 biopsy materials obtained from patients who underwent inpatient treatment in 2018-2021 at the urology department of the Andijan State Medical Institute clinic were studied histologically. After drying in 10% formalin solution for 48 hours, the biopsy pieces were dehydrated in increasing concentration of alcohols and embedded in paraffin, and sections were prepared. Histological sections of 4-5 μm were prepared from paraffin blocks, stained with hematoxylin-eosin, van Gieson stains, and observed under a light microscope, and the calcareous areas were photographed.

3. Research Results and Discussion

A polyp is a tumor-like process that develops in almost all organs and tissues covered with epithelium and macroscopically manifests itself in the form of a nodule-like structure. In our material, it was observed that the polyp was located on the back wall of the urethra, close to the blood, in most cases of women undergoing observation and examination. The histological study of the fibrous polyp of

the urethra showed that although they are similar in structure and composition, it was found that they differ in the composition of the fibrous tissue, the abundance and location of cellular and fibrous structures in it. It is determined that the epithelium covering the surface of the polyp consists of multi-layered epithelium that varies histotopographically, but in some places it is metaplasia to multi-layered non-coagulated flat epithelium, and there are nodules of cells of the basal layer that have grown into acanthose fibrous tissue of various degrees. It is determined that epithelial cells are densely located in the areas of metaplasia to flat epithelium, most of them are hyperchromic in appearance. It is found that in the areas that have preserved the appearance of multi-layered changing epithelium, the epithelial cells have a round and cubical structure and have maintained a row-by-row arrangement relative to each other.

In fact, the growth process of any polyp tumor starts from the private plate of the mucous membrane with connective tissue, and the reason for this is the excessive tissue formation due to chronic inflammation in the connective tissue, excessive hyperplasia of cells and tissue structures, and it protrudes on the surface of the mucous membrane. The fibromatous stroma of the polyps that we studied in this study had a unique structure in each polyp. The histotopographic condition characteristic of all of them is that in the stroma of the polyp there is a predominance of the amount of coarse connective tissue that has grown in the form of fibromatosis. In the area immediately below the covering epithelium, it is determined that the connective tissue contains a large number of fibrous structures and that they are located parallel to the epithelium, and consists of fibromatous tissue, characterized by a small number of blood vessels (Fig. 1). In the deeper areas of the tissue, it is determined that the cells and fibrous structures of the connective tissue are sparsely located due to the presence of swelling in the interstitium, and blood vessels are located in them. It is determined that most of the blood vessels consist of arterioles with a thick wall, and there is an inflammatory infiltrate around them.

In some cases, it is determined that the stroma of a fibrous polyp of the urethra consists of a dense and roughened rough connective tissue. In this case, it is observed that the covering epithelium has desquamated and migrated in some areas, and the basement membrane and special connective tissue under it have been exposed. As we mentioned above, it is observed that the connective tissue directly under the covering epithelium has turned into a whole homogenized rough fibrous tissue with a small number of cells. There are almost no blood vessels in these areas. In the connective tissue in the deep areas of this type of polyp stroma, the number of fibrous structures is increased and their irregular arrangement is determined (Fig. 2). Blood vessels are also observed to consist of very few, small, thick-walled arterioles. In order to study the histotopography of fibrous structures in the fibromatous tissue of the stroma of the polyp, we stained it with a special histochemical dye, picrofuchsin, using the van Gieson method. In this case, it is observed that the collagen

fibers in the fibromatous tissue in the polyp stroma are stained in a dark red-purple color, and the homogenized fibers are light red, and in some areas, they are stained in the form of brown granules. As can be seen in this micrograph, it is determined that the bundles of collagen fibers are twisted, twisted (Fig. 3), fragmented and homogenized in some places, and coarse protein granules appear.

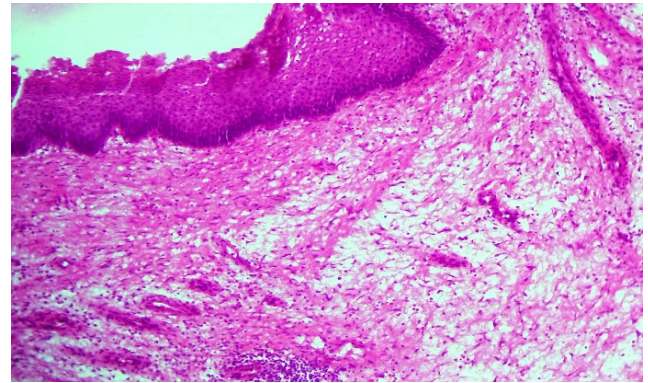


Figure 1. 42-year-old female urethral fibromatous polyp, covering epithelial metaplasia, fibrous stroma in some areas dense, other areas sparse. Paint: G-E. Magnified: 10x40

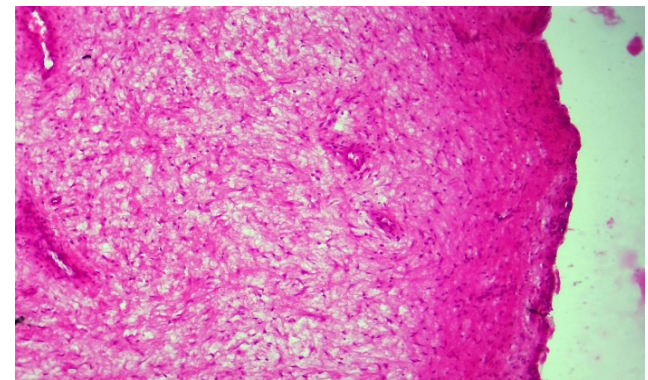


Figure 2. A 52-year-old woman presented with a fibromatous polyp of the urethra, consisting of fibromatous tissue with desquamated covering epithelium and a dense and irregular stroma. Paint: G-E. Magnified: 10x40

Analyzing the etiology of the urethral polyp has shown that if we take into account the causes and pathogenesis of the polyp, the development of the polyp tissue along with inflammatory, dystrophic and dysregenerative processes is determined by the development of these processes in the stroma, which is the basis of the polyp. In most cases, the presence of an inflammatory process and its chronic, immunopathological forms are observed. As we can see in this photomicrograph, in the stroma of the fibromatous polyp, it is determined that there is a diffuse lymphoid infiltration in the structure of the basement membrane under the covering epithelium and the layer of the private plate (Fig. 4). As a result, it is determined that the tissue of this area is also thinned due to swelling, the fibers of the connective tissue are shriveled and irregularly located, and inflamed blood vessels have appeared in the tissue of this area. As a result of this chronic inflammatory process, the covering epithelium undergoes dystrophic and destructive changes. It is determined that there are signs of inflammation in the

connective tissue in the deep areas of the stroma of the polyp where such an inflammatory process has developed.

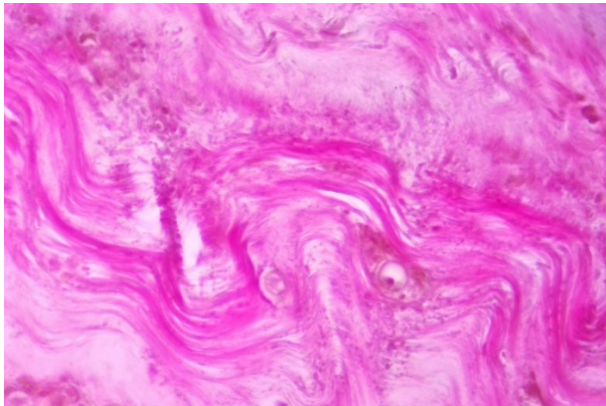


Figure 3. A 52-year-old woman shows a fibromatous polyp of the urethra, where the collagen fibers are crooked, thickened, and homogenized. Paint: van Gieson. Magnified: 10x40

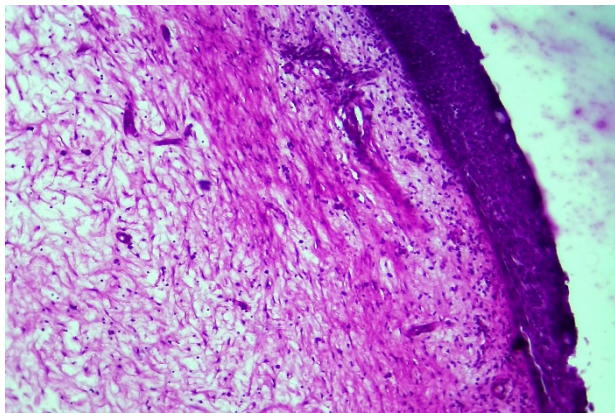


Figure 4. A 47-year-old woman was diagnosed with a fibrotic polyp of the urethra, signs of inflammation in the stroma, dystrophy and destruction of the covering epithelium. Paint: G-E. Magnified: 10x40

4. Conclusions

Fibrous polyps of the urethra are similar in structure and composition when studied histologically, but it was found

that they differ in the composition of the fibrous tissue, the abundance and location of cellular and fibrous structures in it.

In fibrotic polyp, it is determined that there are many fibrous structures in the connective tissue in the area immediately below the covering epithelium, and they are characterized by a small number of blood vessels. In the deep areas of the stroma, the connective tissue cells and fibrous structures are sparsely located due to the presence of swelling in the interstitium, and blood vessels are located in them.

Analyzing the etiology of the urethral polyp showed that if the causes and pathogenesis of the polyp are taken into account, the development of the polyp tissue is accompanied by inflammatory, dystrophic and dysregenerative processes.

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