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The Cellular Elements of the Lamina Propria of the Bladder Mucosa in Experimental Models of Interstitial Cystitis (Bladder Pain Syndrome)

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An important component of the mucous membrane of the bladder is its own plate, but its role in the function of the bladder has not been fully established. The purpose of the study was to analyze the electron microscopic structure of the lamina propria of bladder mucosa in experimental models of interstitial cystitis / bladder pain syndrome. The experimental model was created on 22 white New Zealand female rabbits weighing 1500–2000 g ($n = 15$), which were introduced into the bladder wall urine taken from the animal's bladder; control animals ($n = 7$) that were injected with a 0.9% NaCl solution into the bladder wall. On the 7th day, a cystectomy and histological analysis of the bladder wall were performed. Manufactured ultrathin sections were stained with subsequent electron microscopy. Loosening of varying degrees, individual multidirectional collagen fibers surrounded by fine-grained precipitates of plasma proteins, a complex of pathomorphological changes in the structural elements of the lamina propria and the epithelium of the bladder mucosa, perivascular infiltration by cells of the inflammation, and pronounced edema of the lamina propria were found in samples of animals of the experimental group. As a part of the latter, macrophages, lymphocytes, neutrophils and individual eosinophils, many plasma cells were observed. In the experimental group, an acute inflammatory process developed with morphological signs of both innate and acquired immunity, which lasts for 7 days.

Keywords: interstitial cystitis/bladder pain syndrome, lamina propria of the bladder mucosa, urothelium, experimental model, electron microscopy