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**EFFECTS OF CASTRATION ON BLOOD FLOW AND PERMIABILITY OF FEMALE
RABBIT BLADDER**

Aims of Study Many of the functional bladder diseases, including interstitial cystitis and detrusor instability, predominately occur in women. We believe that female sex hormones play a role in moderating the pathology in this disease. In the current experiments we studied the changes in urothelial permeability and vascularity due to lack of estrogen.

Methods 16 rabbits were divided in to two groups of eight. Overectomy was performed in-group one. Four to six weeks' later bladder permeability was performed by instilling 50% solution of DMSO followed by 1% solution of tryptan blue in to the bladder of anesthetized animals and monitored histologiclly for penetration of the dye in to the urothelium. Changes in blood flow were determined using fluorescent micro-bead assay.

Results 1. Overectomy resulted in significant increase in bladder permeability. Bladder permeability increased significantly after exposure to DMSO in overectomized group, 2. Overectomy resulted in significant decrease in blood flow to bladder mucosa and muscle, and uterus. Overectomy resulted in decrease of 50% blood flow to bladder mucosa, 70% decrease in blood flow to bladder muscle and 42% decrease in blood flow to the uterus. Overectomy didn't cause any change in blood flow to the kidney. Interestingly the base line blood flow to normal female bladder muscle were identical to the normal male bladder muscle, but the blood flow to bladder mucosa in females was 150% greater compared to males. After Overectomy the blood flow to the bladder mucosa was almost identical in males and females but the blood flow to the bladder muscle in females was 60% less then males.

Conclusion Our data suggest significant decrease in blood flow to bladder mucosa and muscle and increase in bladder permeability due to lack of female hormones. These results suggest the significant role played by the female hormones in maintaining the bladder physiology. Lack of these hormones may directly or indirectly play a vital role in variety of bladder pathology. More experiments are underway to evaluate the reversibility of these changes with replacement hormones.