**Abstract**

**Study objective:** To assess nerve fibers density and hormone receptors expression in bowel endometriosis.

**Design:** Cross-sectional study.

**Setting:** Private Hospital.

**Patients:** Women with endometriosis undergoing laparoscopic segmental bowel resection (n=54) INTERVENTIONS: Tissue samples were obtained from patients with surgically treated rectosigmoid endometriosis.

**Measurements and main results:** The rectosigmoid specimen containing the endometriosis nodule was manually sectioned and divided into 3 areas: (C) core of the nodule, (M) margin of the nodule, and (H) healthy bowel tissue. The intensity of expression of estrogen (ER) and progesterone (RP) receptors was evaluated by immunohistochemistry and measured according to the Allred score. Nerve fibers were stained by immunohistochemistry using PGP 9.5 and the density of nerve fillets was counted and expressed in number/mm². All glandular and stromal cells stained for ER; however, glandular cells stained strongly than stromal cells (61.1% vs. 35.2%; p=0.01). Most of glandular and stromal cells stained strongly for progesterone receptors (90.7% vs. 98.1%; p = 0.2). The density of nerve fibers was very high in area M (172.22/mm²), moderate in area H (111.48/mm²) and very low in area C (7.31/mm²); p=0.01.

**Conclusion:** Both glandular and stromal cells within the rectosigmoid endometriosis nodule express estrogen and progesterone receptors. Higher intensity of expression of estrogen receptors occurs in glandular cells. The density of nerve fibers is extremely high at the nodule margin and very low in the center of the nodule.