

EXPRESSION OF HEPARANASE IN UTEROSACRAL LIGAMENTS OF WOMEN WITH OR WITHOUT UTERINE PROLAPSE

Hypothesis / aims of study

Pelvic organ prolapse (POP) is a global health problem for which the pathophysiological mechanism remains to be elucidated. The loss of extracellular matrix proteins is considered to be important in the molecular basis of this pathology. Heparanase is a heparin sulfate degrading endoglycosidase that has important roles in various biological processes, including proteoglycan degradation, and is a key component of the extracellular matrix. The aim of this study was to compare expression of Heparanase in connective tissue of uterosacral ligaments in women with or without uterine prolapse.

Study design, materials and methods

Thirty-nine women who underwent hysterectomy for benign reasons enrolled in this study. Twenty-three women underwent vaginal hysterectomy (VH) for uterine prolapse (stage ≥ 3) and sixteen women underwent total abdominal hysterectomy (TAH) for fibroid uterus without uterine prolapse (stage < 2). Uterosacral ligaments biopsies were obtained from all uterine specimens near its origin. All tissue samples were analyzed by immunohistochemistry with regard to presence of heparanase using antiheparanase antibody 733.

Results

Women characteristics were presented in table 1. Heparanase positive staining was more common in the connective tissue of uterosacral ligaments in women with uterine prolapse. Positive staining was seen in 17/23 (73.9%) women with uterine prolapse compared to 4/16 (25.0%) without uterine prolapse ($p = 0.007$). On multivariate logistic regression analysis, positive staining was independently associated with VH, after controlling for women's age. In women with uterine heparanase immunostaining was noted as brown gargle (arrow) in the cytoplasmatic portion of the fibroblasts in the uterosacral ligaments prolapse (Figure 1 A,B). In women without prolapse absence of such delicate sign was more common (Figure 1 C,D).

Interpretation of results

Heparanase expression is more common in the connective tissue of uterosacral ligaments in women with uterine prolapse compared to normal

Concluding message

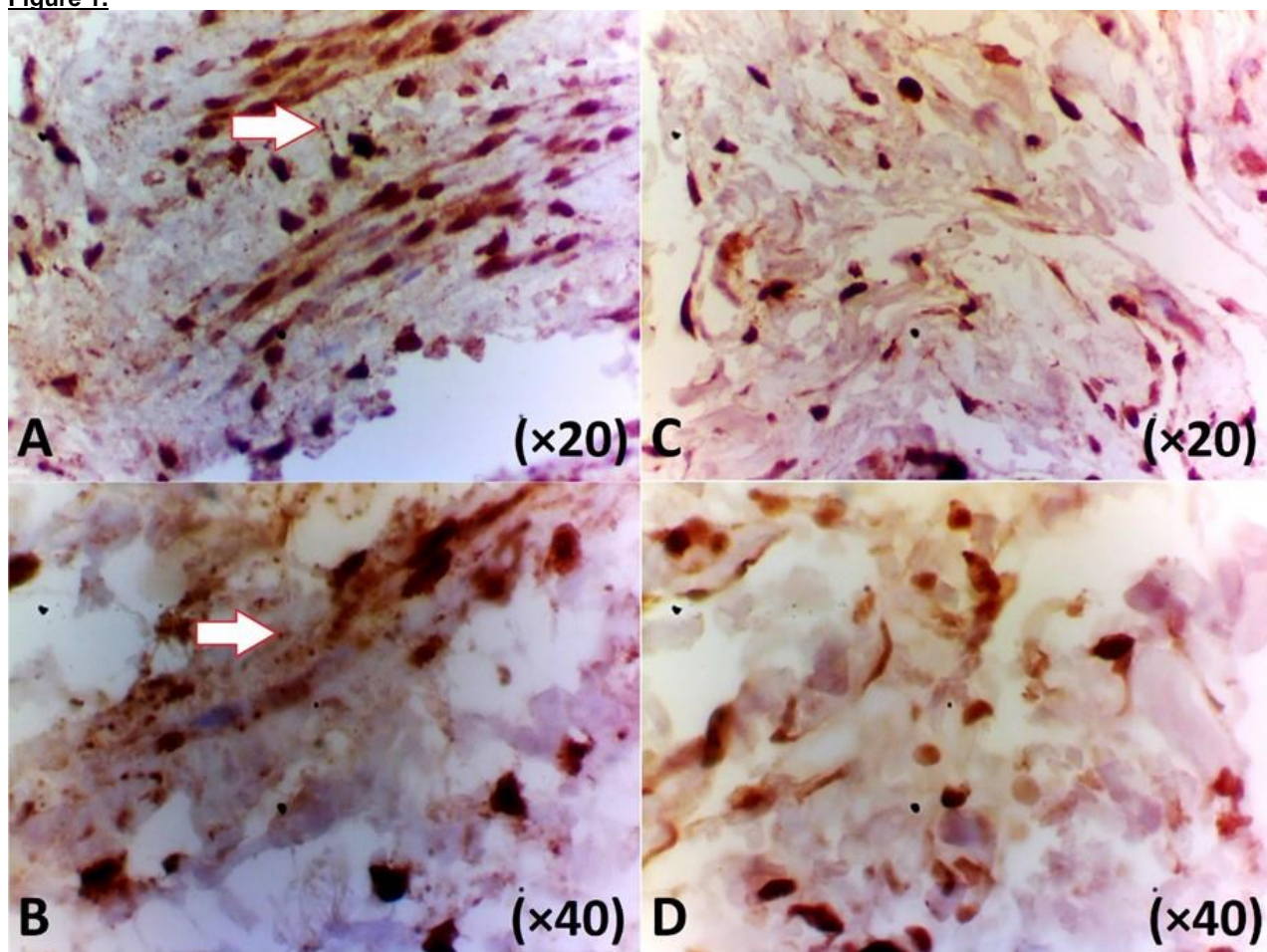
These results may suggest its role in the pathological processes of compromising pelvic floor function and the development of uterine prolapse

Table 1.

	VH (n = 23)	TAH (n = 16)	P
Age (years)	63.8 \pm 9.3	48.8 \pm 8.1	<0.001
Menopause	21/23 (91.3%)	2/16 (12.5%)	<0.001
Parity	3.1 \pm 1.2	2.3 \pm 1.7	0.041
Smoking	5/23 (21.7%)	2/16 (12.5%)	0.68
Hypertension	10/23 (43.5%)	5/16 (31.3%)	0.52

Data presented as mean \pm SD or number (percentage) as appropriate

Figure 1.



Disclosures

Funding: None **Clinical Trial:** No **Subjects:** NONE