

## ROLE OF SLING INTEGRITY ON ANTI-INCONTINENCE EFFECTS OF AN ANIMAL MODEL OF SLING PROCEDURE

### Hypothesis / aims of study

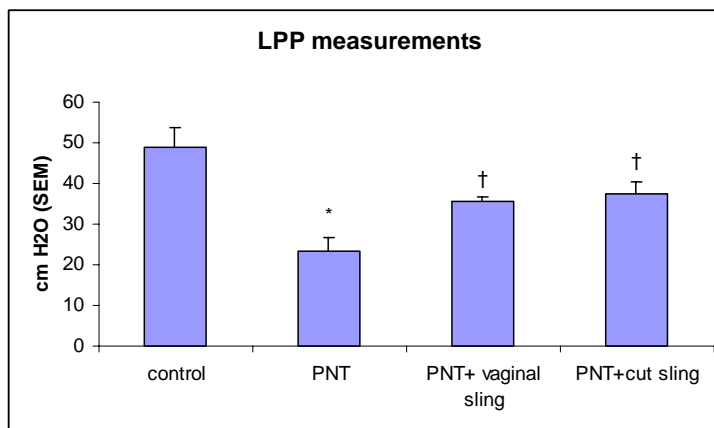
The degree of tension needed to be applied onto sling to render its anti-incontinence effects in stress urinary incontinence (SUI) remains unknown. The aim of this study was that, in a recently validated rat model of vaginal sling, test the hypothesis that the sling would continue to yield its anti-incontinence effect- by mean of restoration of leak point pressure (LPP)- after its suburethral segment is cut.

### Study design, materials and methods

SUI was created in a group of 20 female Sprague-Dawley rats by previously established method of bilateral pudendal nerve transection (PNT). The rats were randomized into 4 groups (normal controls, PNT only, PNT+ vaginal sling, and PNT+ cut sling. For the vaginal sling group, a 2x0.3 cm strip of polypropylene mesh was placed at the midurethral level through a vaginal exposure. For the cut sling group, the sling was cut at the midline immediately after placement. At 4 weeks, LPP was measured in each group via a suprapubic tube. Five measurements of LPP were done and their means were recorded. Results are presented as mean  $\pm$  SEM. Statistical analysis was done using wilcoxon signed-rank test with  $p < 0.05$  indicating a significant difference.

### Results

LPP for the PNT ( $23.46 \pm 3.3$  cm H<sub>2</sub>O) group was significantly lower than the control ( $48.76 \pm 5.1$  cm H<sub>2</sub>O) ( $p = 0.0075$ ). Both vaginal sling and cut sling groups had a significantly higher LPP ( $35.47 \pm 1.3$  cm H<sub>2</sub>O and  $37.23 \pm 3.2$  cm H<sub>2</sub>O respectively) when compared to PNT alone group ( $p = 0.018$  and  $0.021$  respectively). There was no difference between the LPP of the intact and cut sling ( $p = 0.65$ ). (Figure 1)



**Figure-1:** Means of LPP in groups of animal 4 weeks after no procedure (control), PNT, PNT+ cut sling, and PNT+ sling. .

\* Significant difference in LPP between PNT and control ( $P = 0.0075$ ).

† Significant difference in LPP compared to PNT group. No significant difference compared to control group.

### Interpretation of results

PNT has resulted in a 50% drop in the LPP at 4 weeks after the nerve transection. Placement of an intact vaginal sling or a cut sling resulted in the same degree of restoration of LPP when the latter was measured 4 weeks later.

### Concluding message

This data support the previous clinical observation that anti-incontinence effects of sling procedure continues to remain in place after urethrolysis or sling release. Pathophysiological explanation and the time course of this observation needs further investigation in our animal model of vaginal sling.