

# **Laparoscopic sacral mesh fixation for ventral rectopexy – clinical implications from a cadaver study**

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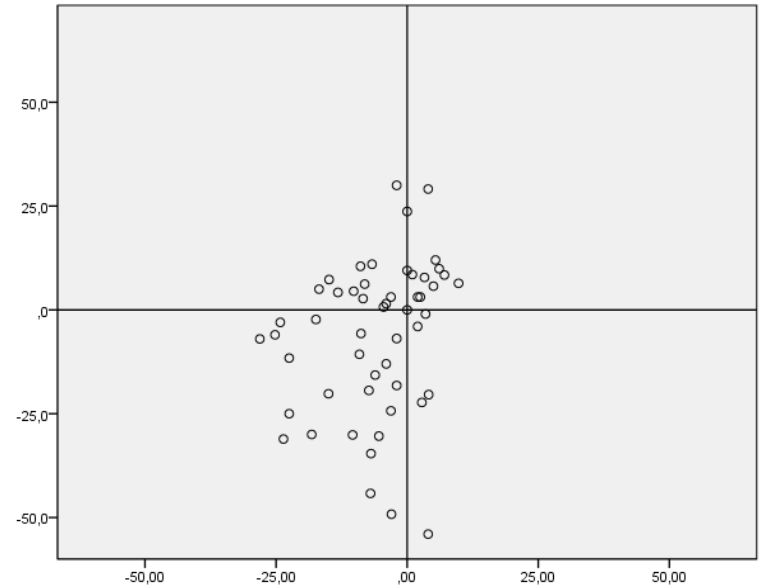


# Introduction and Methodes

- Correct tack placement at the sacral promontory for mesh fixation in ventral rectopexy is crucial to avoid bleeding, nerve dysfunction and spondylodiscitis.
- No studies exist evaluating fixation points on the sacrum and describing presacral space anatomy in patients undergoing ventral mesh rectopexy, especially in male cadavers.
- Eighteen fresh cadavers (10 female, 8 male) were included in this study. After laparoscopic mesh fixation detailed pelvic dissection was performed following a standardized protocol.
- In addition, a 64-row multidetector computed tomography was conducted to further define lumbosacral anatomy and tack positioning.

# Tacks in relation to the sacral promontory

- 52 tacks were laparoscopically deployed in 18 cadavers.
- Median distance to the midsacral promontory was 16.1 mm (0.0-54.2).
- Only 22 tacks (42.3%) were found on the right surface of the S1 vertebra, representing the respective targeted deployment area.



*MSP is found at 0/0.*

*Each circle represents a deployed tack.*

*Target area is the lower right quadrant representing the right surface of the S1 vertebra.*

# Major vessels and the hypogastric plexus

- In 14 cadavers, all tacks affected the hypogastric nerve plexus.
- Median distance to the major vessels was 10.5mm (0.0-35.0), and 32.1mm (7.5-46.1) to the right ureter.

	N=52 (100%)
Right common iliac artery	6 (11.5)
Left common iliac artery	0 (0)
Right internal iliac artery	26 (50.0)
Left internal iliac artery	0 (0)
Right common iliac vein	0 (0)
Left common iliac vein	16 (30.8)
Right internal iliac vein	1 (1.9)
Left internal iliac vein	3 (5.8)

*Closest vessel to each deployed tack.*

*Results are described as absolute numbers and percentage*



# Conclusion

- Tack placement showed significant variation in our specimen, emphasising the need for reliable anatomic landmarks and sufficient exposure during VMR.
- Superior hypogastric nerve plexus involvement is common, thus detailed functional assessment after surgery is essential.
- Neither major vessels nor the ureter were injured by tacks.



*Computed tomography reconstruction of a male pelvis.  
Frontolateral view with all tacks positioned on the L5 disc.*