

Modified Autologous Fascial Sling Insertion Using TVT Technique in a Resource-Poor Setting

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BACKGROUND

- Stress urinary incontinence (SUI) is a common and distressing condition that affects **38–55% of menopausal women**, often leading to a significant decline in quality of life. In women where conservative management fails, surgical treatment is considered. Traditionally, **colposuspension** and **mid-urethral slings (MUS)**—particularly the **tension-free vaginal tape (TVT)**—have been standard surgical options.
- However, synthetic slings carry notable risks such as **mesh erosion, migration, infection, and voiding dysfunction**, particularly due to **excessive tension**. These complications may necessitate **revision surgeries**, which are often not feasible in **resource-limited settings**.
- Autologous fascial slings** offer a mesh-free alternative with lower foreign body-related complication rates. However, their lack of postoperative adjustability remains a limitation, particularly in cases where the initial sling tension is either inadequate or excessive.

OBJECTIVE

- To introduce and describe a **modification of the autologous fascial sling insertion technique** using the **retropubic TVT approach**, enabling **postoperative adjustment of sling tension**. This innovation aims to minimize complications and reduce the need for reoperations in low-resource healthcare environments.

CONCLUSION

- The modified autologous fascial sling technique using the TVT method provides a safe, effective, and adjustable alternative to synthetic mid-urethral slings. This approach is especially suited to resource-poor environments, where surgical revisions may not be readily available.
- Allowing postoperative sling tension modification increases the flexibility and individualization of care, improving patient outcomes and reducing long-term complications.
- Further prospective studies and larger case series are recommended to evaluate the long-term safety, durability, and cost-effectiveness of this technique.

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SURGICAL TECHNIQUE

Fascial Graft Harvesting

- A 5 x 2.5 cm strip of rectus fascia was harvested through a suprapubic incision.

Sling Insertion

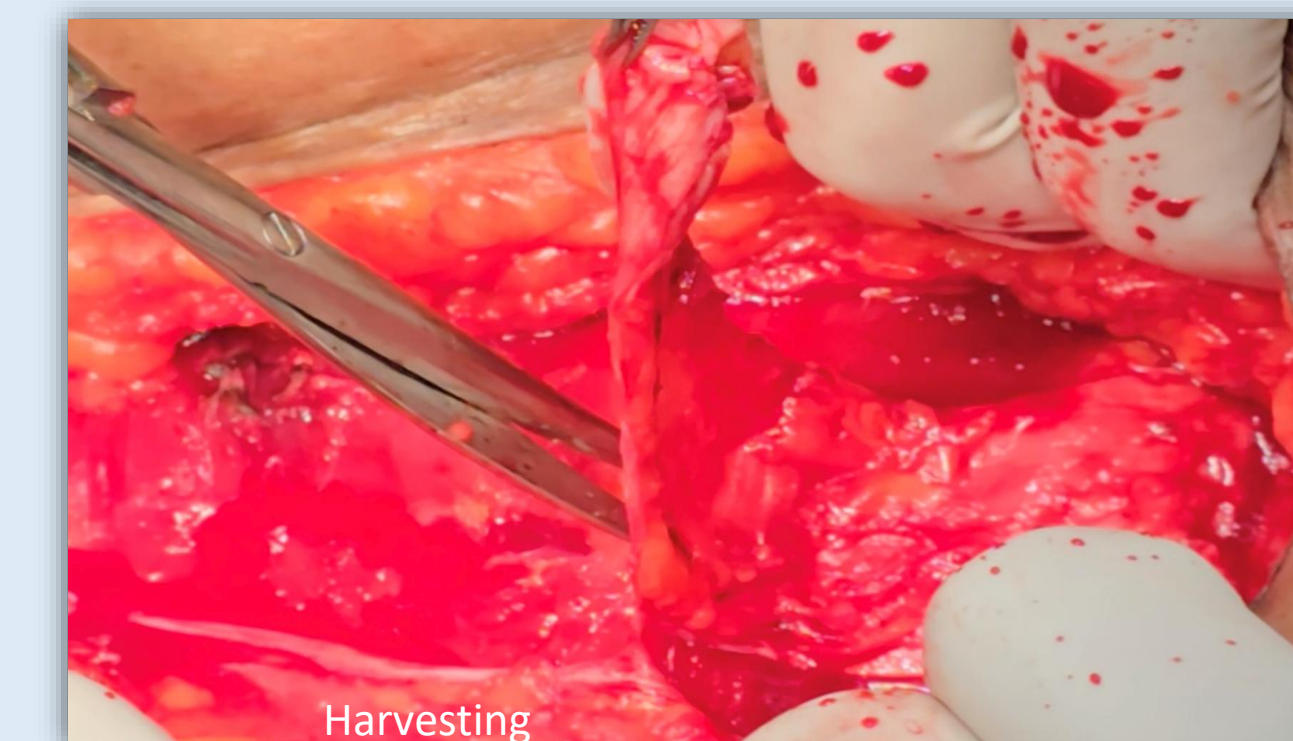
- The fascial graft was tunnelled retropubically using the conventional TVT introducer needle system.
- A cystoscopy was performed intraoperatively to rule out bladder or urethral injury.

Tension Adjustment

- The sling was loosely secured beneath the mid-urethra, ensuring adequate support while preventing over-tightening.

Postoperative Adjustability Mechanism

- Two non-absorbable nylon sutures were exteriorized through the abdominal wall at the exit sites of the fascial strip. These serve as tensioning tails for future tightening if required, eliminating the need for invasive revision.



OUTCOME

- The patient recovered without complications.
- Sling tension was adequate from the outset, and no postoperative adjustment was necessary.
- At 6 weeks and 3 months follow-up, the patient reported complete resolution of SUI symptoms.
- There were no voiding difficulties, and no need for intermittent self-catheterization (ISC).
- Her quality of life improved dramatically, enabling her to resume normal daily and occupational activities.

DISCUSSION

- This technique addresses a key challenge in autologous sling procedures—the **inability to fine-tune tension postoperatively**. In contrast to synthetic slings, this **hybrid method** uses safe, **native tissue** while incorporating the **TVT's minimally invasive retropubic route** and the **concept of delayed tensioning** via externalized sutures.
- In **resource-poor settings**, where patients often cannot access specialized urological services for repeat procedures, this **innovative yet simple modification** offer a safer and potentially more durable solution.
- It also reduces the **risk of early urinary retention**, which is a frequent concern with autologous slings when over-tightened, and minimizes the need for ISC—particularly valuable in areas with limited patient education and follow-up.

Video Link



<https://www.youtube.com/watch?v=xlFWI7evOBc>

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