

# TAR (Trans versus Abdominis Muscle Release) - A Novel Approach for Large Ventral Hernia: Case Report

Dr Twisha Shah<sup>1</sup>, Dr Mukesh Soni<sup>2</sup>, Dr. Preety Deshpande<sup>3</sup>, Dr. Sameer Kadam<sup>4</sup>

MGM Medical College and Hospital

**Abstract:** *The challenge in complex ventral hernia repair is difficulty in primary closure of the large defects. Study case includes 52 year old female with paraumbilical incisional hernia post laprotomy by midline incision for intestinal adhesiolysis. Transversus abdominis muscle release (TAR) procedure, is a new myofascial release technique in which posterior component separation is done for complex ventral hernia repair. By creating immense retro muscular plane TAR allows bilaminar in growth of the mesh, allowing primary closure of defect. Due to its suitability and favorable outcome, TAR technique in treatment of complex ventral hernia is recommended where closure of the primary defect is difficult.*

**Keywords:** TAR, Trans versus Abdominis Muscle, Ventral Hernia

## 1. Introduction

Repair of complex ventral hernia poses a challenge in obtaining a reliable, durable repair with low morbidity and recurrence rate. The concept of component separation technique (CST) for repair of large abdominal hernias was developed as traditional suture and mesh techniques without relaxing musculofascial flaps led to unfavourable outcome. Trans versus Abdominis muscle release is a new myofascial release technique for repair of complex hernia, first reported by NOVITSKY *et al.* Posterior component separation, with transversus abdominis muscle release which is a lateral extension of Rives-Stoppa Repair, creates immense retro muscular plane between transverse abdominis muscle and fascia transversalis peritoneum thus allowing bi laminar in growth of mesh.

This paper presents operative technical details of the procedure and results.

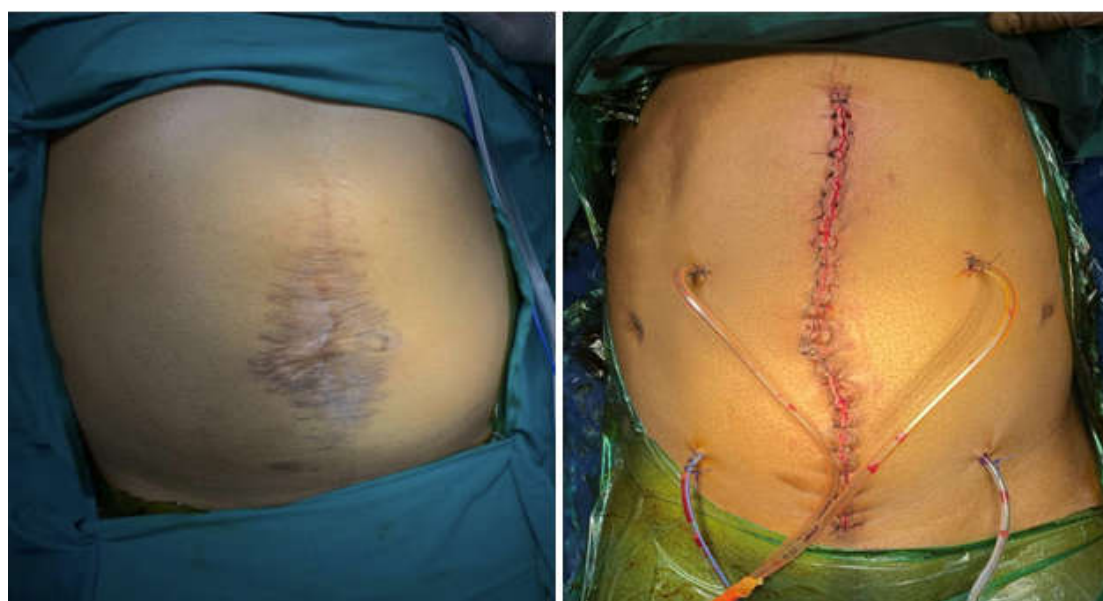
## 2. Case

A 52 year old female with complain of swelling over right paraumbilical region associated with pain dragging in nature presented in Surgery OPD MGM Hospital.

Swelling increased on standing, straining & coughing & decreased on lying down

Patient had complain of cough off & on, occasional nausea, Vomiting & constipation

She had Past history of: Exploratory laparotomy by Midline incision with intestinal adhesiolysis done 1 year ago. One month after operation patient noticed a swelling over the site of laparotomy incision.



### 3. On Examination

On examination, Swelling of 10x6 cm in midline & right paraumbilical region over midline incision scar. Skin over swelling was thin with visible peristalsis.

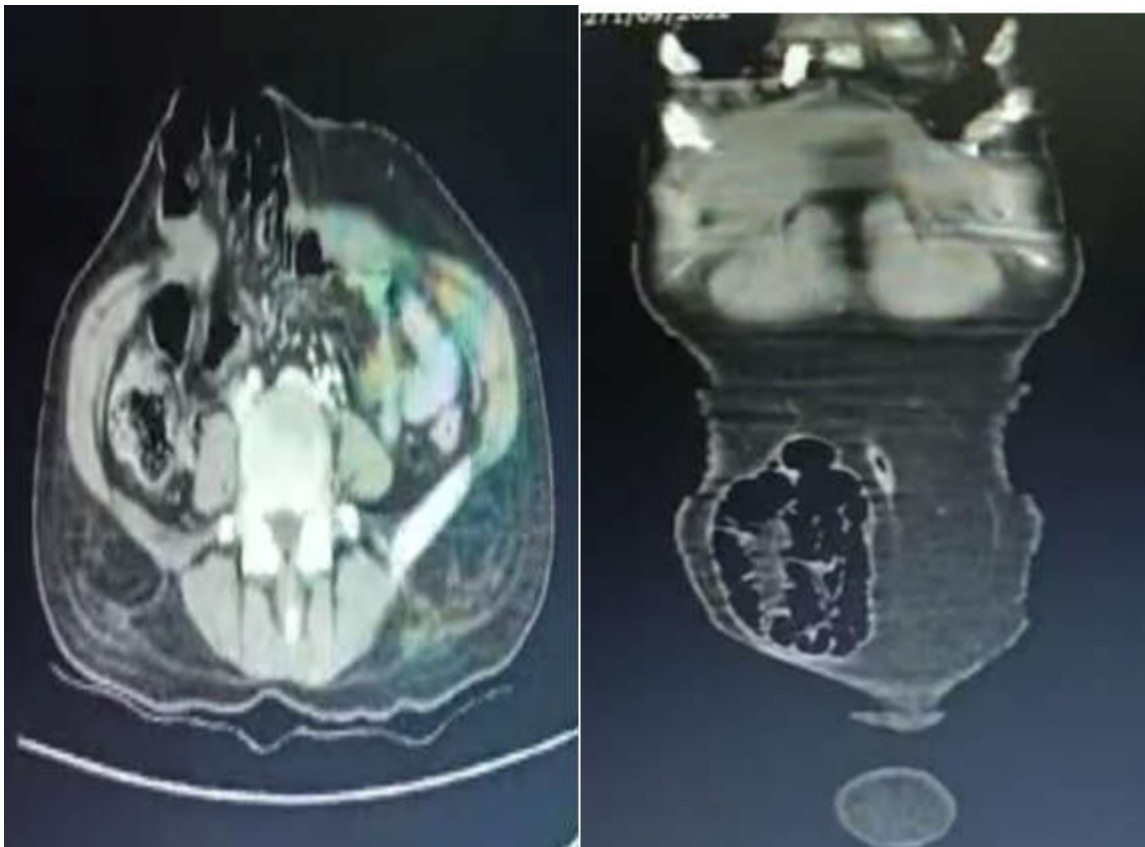
Swelling didn't. Reduce completely.

It Increased on standing/ straining and

Reduced on lying down

Impulse on coughing was present. Swelling was Non tender & No local rise in Temperature. Bowel sounds were heard on auscultation

Ultrasound was suggestive of 8 cm defect in Anterior Abdominal wall with content being bowel and omentum.



### Management

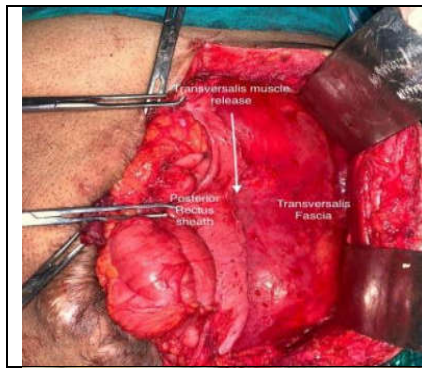
Posterior compartment separation with Transversus abdominis muscle Release was done in order to do tension free repair of large ventral hernia.

### Operative Steps

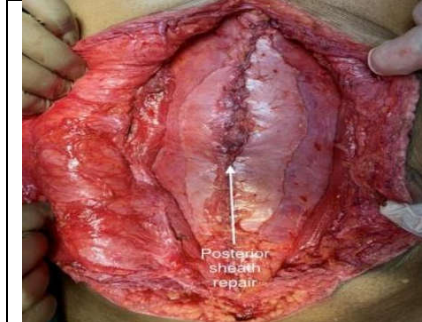
Old surgery scar is excised in elliptical manner. Abdomen explored in layers till posterior rectus sheath.



The posterior rectus sheath is incised and the retrorectus plane is developed.



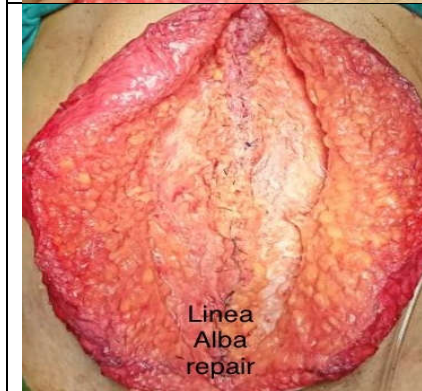
**Transversus abdominis is released** medial to the linea semilunaris to expose a broad plane that extends from the central tendon of the diaphragm superiorly, to the space of Retzius inferiorly, and laterally to the retroperitoneum. This preserves the neurovascular bundles innervating the medial abdominal wall.



**Posterior rectus sheath is repaired.**



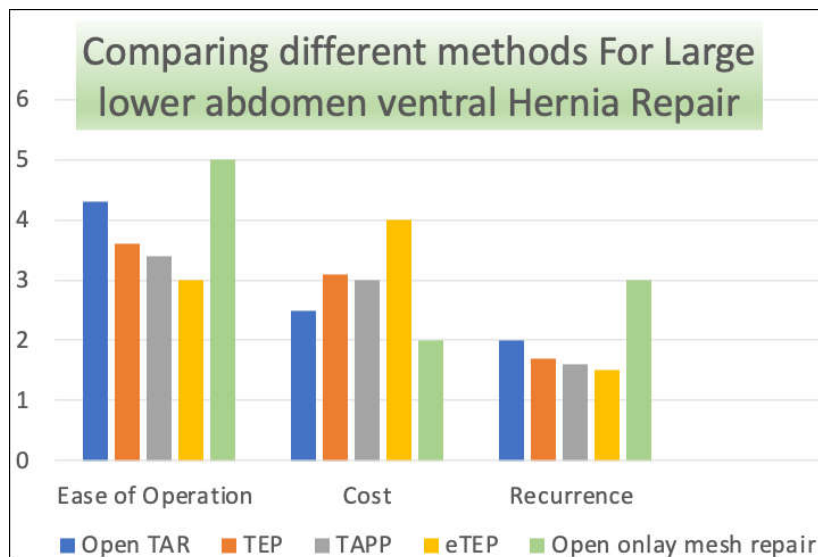
**Mesh is placed in a sublay fashion** above the posterior layer.



The **linea alba** is reconstructed, creating a functional abdominal wall with wide mesh reinforcement.

Other methods for ventral hernia repair are:

ETEP, TEP, TAPP. Conventional methods of open repair like on lay meshoplasty with Anterior compartment separation technique.



#### 4. Discussion

TAR- Modification of Rives –Stoppatechnique, provides tension free closure of huge defects & easy to perform as compared to eTEPRS. TAR is applicable for broad range of hernias & mainly important for big hernias were classical Rives-Stoppa method cannot provide tension free midline closure of defect.

TAR involves retromuscular placement of mesh anterior to posterior fascia & primary closure of anterior fascia. Mesh is placed in Sublay fashion above the posterior layer, So regular mesh instead of dual mesh /biological mesh which are very expensive can be used. TAR allows bilaminar ingrowth of mesh.

TAR preserves the neurovascular bundles innervating the medial abdominal wall.

No chances of bowel adhesions as in case of IPOM.

Linea alba can be reconstructed, so midline strength is preserved. Typical method may struggle to reestablish abdominal domain and to create a lasting repair.

TAR has low perioperative morbidity & a low recurrence rate.

#### 5. Conclusion

Posterior component separation with transversus abdominis release (**TAR**) is reliable, durable, versatile and easy to learn surgery, with 5% recurrence rate at 2 years. It preserves the neuro vascular supply. Although wound complications occur at frequency similar to other methods, they tend to be less severe, rarely requiring operative debridement hence making it an ideal approach for complex ventral hernia.

#### References

- [1] Slater NJ, Montgomery A, Berrevoet F, Carbonell AM, Chang A, Franklin M, et al. Criteria for definition of complex abdominal wall hernia. *Hernia* 2014;18:7–17

- [2] Bittner R, Bingener-Casey J, Dietz U, Fabian M, Ferzli GS, Fortelny RH, et al. Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias (International Endohernia Society (IEHS)-part 1). *Surg Endosc* 2014;28:2–9.
- [3] Sunil Basukala, Rakeshkumar Gupta - Transversus abdominis release for complex incisional hernias- a case report, *journal of surgical case report, oxford university press* 2021 July;2021(7)
- [4] Oprea V, Radu VG, Moga D. Transversus abdominis muscle release (TAR) for large incisional hernia repair. *Chirurgia (Bucur)* 2016;111:535–40.