

## SURGICAL RECONSTRUCTION OF DIASTASIS RECTI ABDOMINIS (DRA) WITH PPLICATION, UMBILICAL HERNIORRHAPHY AND ABDOMINOPLASTY - A CASE REPORT

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### ABSTRACT

Divarication of the recti, or diastasis recti, refers to the splitting of the parallel rectus abdominis muscles along the abdominal midline, resulting from the stretching and thinning of the connective tissue, called linea alba, situated between them. In Ayurveda, divarication of recti (diastasis recti) is primarily correlated with an aggravation of **Vata dosha**, a result of the significant physiological changes the body undergoes, particularly during and after pregnancy. Pregnancy is considered to leave the body in a state of *Shunya Sharira* (empty body), which is dominated by Vata dosha. Vata is associated with movement, space, and dryness, and its imbalance can lead to laxity in connective tissues (linea alba) and weakened muscle tone. External therapies like Abhyanga (oil massage) and Udaraveshtana (abdominal binding) are validated by evidence demonstrating cortisol reduction, oxytocin enhancement, and improved management of Diastasis Recti Abdominis (DRA) (1). Management and treatment involve from conservative to surgical repair. Conservative treatment emphasizes core strengthening and avoiding exercises that exacerbate the gap, with physiotherapy enhancing core strength, stability, and abdominal tone restoration. Surgical repair an option for severe, persistent cases, involving an incision to bring the muscles back together. This case report of 31yr old female patient complaint of swelling at umbilical region and backache with bulging of abdomen since 3 months. Patient having history of G<sub>4</sub>P<sub>2</sub>L<sub>2</sub>D<sub>0</sub>A<sub>2</sub>. This patient underwent Rectus plication with abdominoplasty with umbilical herniorrhaphy. Patient wound was healed primarily with minimal scarring and less postoperative pain.

**KEYWORDS:** Diastasis abdominis recti, Abdominoplasty, Umbilical herniorrhaphy.

### INTRODUCTION

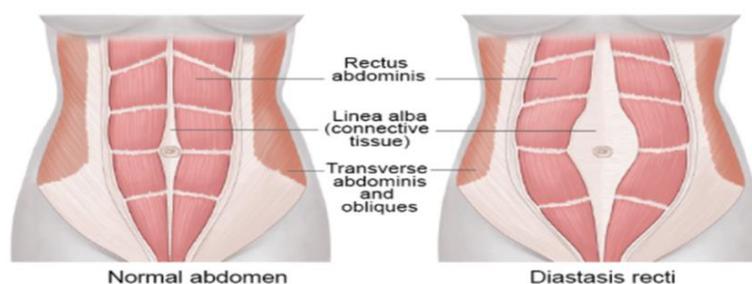
Diastasis recti abdominis (DRA), defined by the atypical separation of the rectus abdominis muscles along the linea alba, is a common yet frequently neglected condition that encompasses both cosmetic and functional challenges. It's a common condition that affects 6 in 10 women after childbirth. Additionally, factors such as obesity, elevated intra-abdominal pressure, and certain

exercise regimens further exacerbate DRA across diverse populations.<sup>[2]</sup>

The pathophysiology of DRA is characterized by a multifaceted interplay of hormonal fluctuations, mechanical stressors, and alterations in muscular integrity. During pregnancy, hormonal changes lead to increased laxity of the connective tissue within the

abdominal wall, which, when combined with the continuous mechanical stretching caused by the expanding uterus, facilitates the separation of the abdominal muscles.<sup>[3]</sup>

DRA is diagnosed by measuring the distance between the two recti muscles. Abdominal palpation, tape measures, calipers, and ultrasound are the most common methods used in clinical practice. Clinicians also use imaging techniques, such as computer tomography (CT) and magnetic resonance imaging (MRI), to measure the distance between the two recti muscles. The majority of women undergo a natural resolution of diastasis recti during the initial stage of their postpartum period. However, in some cases, DRA persists and tends to cause functional and cosmetic defects in women's bodies.



Treatment strategies have correspondingly evolved, progressing from conservative exercises primarily aimed at symptomatic relief to sophisticated surgical interventions designed for structural repair. Surgical management has experienced significant advancements, with minimally invasive techniques, including robotic-assisted procedures, emerging as effective alternatives to traditional open surgery.<sup>[4]</sup>

Surgical management include open, laproscopic approaches. In which abdominoplasty and plication included in open surgery. While minimal invasive include laproscopic surgery. This article contains case report of 31yr old female patient complaint of swelling at umbilical region and backache with bulging of abdomen since 3 months.

### Present History

Patient is asymptomatic before 3 month then she noticed Swelling in the umbilical region with bulging of abdomen. Painless swelling. Swelling increases gradually. Then patient came to OPD department of shalyatantra for further management.

### Past history

No any surgical history.

### Family history

No any relevant family history found.

### General Examination

PR- 70 /min  
BP-110/70 mmHg  
SPO2-98%  
Temp-Afeb

### Personal History

Diet -Mixed diet  
Bowel - Regular  
Bladder- Regular  
Sleep - 8- 9 in 24 hour  
Appetite- Good  
Addiction- No Addiction.

### Physical Examination

Average built, no clubbing/cyanosis/icterus, no any lymphadenopathy observed.

### Systemic Examination

Respiratory System Bilateral air entry- Normal

Cardiovascular System S1, S2 – Normal

Central Nervous system -Conscious and well oriented

P/A – Soft & NT

### Local Examination

Cough Impulse positive at umbilical region  
Two finger gap noted between right and left abdominals.

### Lab Investigation

Hb- 13.1 GM% TLC – 8400/cumm P-69% L-26% E-01% M-04% B-0% Platelets – 248000/cumm BSL(R)-85 mg/dl, Sr. creatinine -0.97mg/dl HIV -Negative, HBsAg – Negative BT- 2min 30sec, CT- 5 min, Urine Routine:- PC- 2-3 EC- 2-3, PT- 14.1 INR- 1.19

### Ultrasonography

Diastasis recti seen  
Umbilical hernia of defect 10mm

### CT Abdomen Pelvis

Diastasis recti seen  
Abnormal widening of the gap between the two medial sides of rectus abdominis muscle of maximum distance between medial sided of rectus abdominis muscle measures 23.8mm.

Umbilical region shows 10mm defect in fascia layer through which herniation of preperitoneal fat noted.

### Surgical Procedure

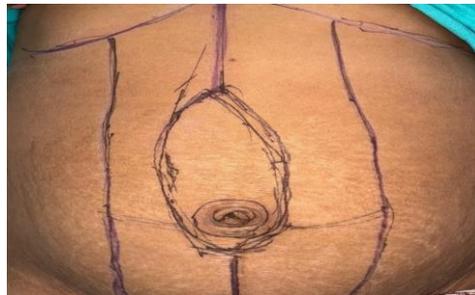
Operation was performed under spinal anaesthesia. Patient was placed in supine position. After adequate shaving and skin preparation over abdomen area before

operation using a sterile skin-marking pen a gap of rectus muscle along with edges of rectus muscle over skin was marked. Midline skin incision taken with blade no 15. Skin, subcutaneous tissue and fascia dissected and rectus sheath exposed. Umbilical stump excised with cutting scissors and repaired with double breasting method with prolene 1-0. Flap raised on either side and diastasis between the rectus abdominis muscle identified and measured. Rectus muscle approximated in midline by

plicating the anterior rectus sheath using prolene 1-0 in simple interrupted suture. Lateral incision taken 5cm away from the previous incision on either side, skin along with fat layer excised. Haemostasis achieved. Abdominal wash given with NS. Romovac drain no 12 placed. Drain fixed with mersilk 1-0. Fat layer closure done with vicryl 2-0. Subcutaneous suturing done with monocryl 3-0. Stapler suture taken on suture line. Dressing done. Procedure uneventful.



**Pre operative Patient Abdomen in Standing Position.**



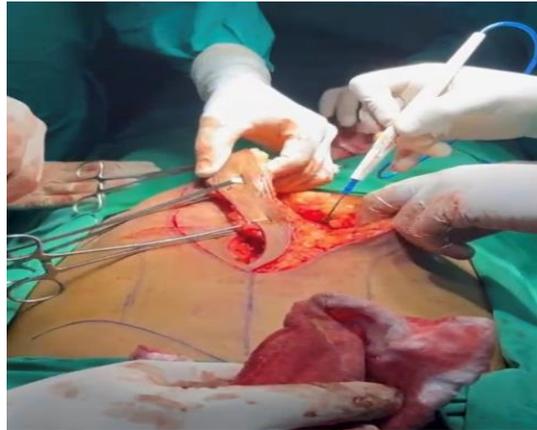
**A gap of rectus muscle along with edges of rectus muscle over skin was marked.**



**Umbilical Hernia defect.**



**Plication of Rectus abdominis done.**



**Plication of Rectus abdominis done.**



**Subcutaneous suturing along with stapler done Drain in situ.**

#### **Post Operative Management**

Post-operative care involved administering antibiotics for 8 days to prevent surgical site infection, initially intravenously for 5 days and then orally for 3 days.

The skin stapler removed on POD -13.  
Suction drain removed on POD – 17.

The patient was advised to avoid putting pressure on the abdomen and to refrain from excessive physical strain for 3-4 weeks.

After 3 weeks Inj. Kenacort locally along the incision lining were suggested to prevent the formation of excessive scarring, such as keloids and hypertrophic scars.



**POD -13**

**Suture line healthy**

**2 stapler suture are there rest all removed**

**Drain in situ**



**POD – 17**

**Suture line healthy.  
Stapler suture removed.  
Drain removed.**

### **OBSERVATION AND RESULTS**

A patient was diagnosed with Diastasis of Recti with Umbilical Hernia after careful examination and clinical findings, and was subsequently admitted to the hospital for surgical management. Pre-operative preparation included routine blood examination to assess the patient's overall health. The patient also received thorough counselling on the severity of the disease and potential future complications. With the patient's consent, the Diastasis of Recti with Umbilical Hernia was operated under spinal anaesthesia. Rectus abdominis plication with umbilical herniorrhaphy with abdominoplasty done. The patient did not experience any complications, such as seroma formation, haematoma formation, edema, skin necrosis, surgical site wound infection, or postoperative pain. Follow-up appointments were scheduled on an outpatient basis to monitor healing.

### **DISCUSSION**

DRA is common in postpartum women and certain other groups, and it may have possible health consequences. In terms of diagnosis, approaches have progressed from simple initial physical examinations to the use of multiple advanced imaging techniques such as ultrasound and MRI, which have improved diagnostic accuracy. In terms of treatment, initial management of DRA focused mainly on conservative approaches, like simple abdominal exercises to reduce the gap between the rectus abdominis muscles. Surgical management of DRA has progressed significantly with medical advances.

### **ADVANTAGES**

#### **Functional advantages**

Reduces Back Pain  
Improves Core Strength  
Better Posture

#### **Cosmetic Advantages**

Flatter Abdomen  
Toned Appearance

### **Long-Term Benefits & Satisfaction**

High Patient Satisfaction  
Durable Results  
Improved Quality of Life

### **CONCLUSION**

DRA is a major issue faced by women following childbirth. This study explores treatment alternatives for DRA and emphasizes the role of technology in enhancing therapy. This technique is linked to significant patient satisfaction, fewer postoperative complications and recurrences, shorter hospital stays, and faster wound healing compared to traditional closure methods.

### **ACKNOWLEDGMENT**

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