

Laparoscopic Repair of Large Divarication of Recti with Umbilical Hernia

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2. Key words

Divarication of recti; Musculature; Lineaalba

1. Abstract

Diastasis of recti is the separation of two recti muscles along the anterior abdominal wall away from the midline. It can be measured as an interrecti distance. Pregnancy, obesity are few of the risk factors leading to it and it has only surgical management. Divarication repair in old era used to be repaired via open technique however now with advent of laparoscopy it can be repaired with a key hole surgery with less morbidity and more safety.

3. Introduction

Divarication of recti is a common post pregnancy entity. There is a lax abdominal wall musculature and most of the times it is associated with a ventral hernia. Hernia is defined as a defect in abdominal wall musculature or a defect in a muscle itself which has been there for long but with pregnancy, obesity due to an increased intraabdominal pressure it becomes evident. The two recti muscles on both sides of abdominal wall have an attachment to lineaalba. With increased stretch or increased pressure to abdominal wall these muscles can get apart and away from the midline giving a bulge in the midline known as divarication of recti. It has various degrees and moderate to severe shall be treated by surgery. In case it is associated with hernia surgery has to be undertaken to reduce the chances of obstruction[1, 2].

4. Case report

A 32 year old female post 6 months of delivery presented with a lump in the center of abdomen as well as a bulge which she notices along the mid of abdominal wall after delivery She is 6 months post delivery and she does regular exercise but after her second child birth which was a normal vaginal delivery she has noticed a significant bulge in the mid of abdomen associated with a bulge at the umbilicus which becomes prominent while coughing, bending or lifting any object. At the site of the bulge

patient most of the times have pain as well. Upon examination she was found to have an umbilical hernia with a divarication of recti. The divarication was quite wide and throughout the recti attachment starting from just below the xiphisternum up to suprapubic region. The patient was counselled for surgery where she was advised for a laparoscopic repair of divarication of recti with mesh repair of umbilical hernia. She agreed and underwent laparoscopic single layer repair of divarication of recti along with mesh repair for umbilical hernia under general anesthesia. Patient stayed in hospital for one night and was discharged home next day in a stable condition. She was advised to wear an abdominal binder for a month. Post discharge she was followed up at one week and one month span and she was found to be healthy without any complaints.

5. Discussion

Divarication of recti is defined as the separation of the two recti muscles away from the midline of abdominal wall¹. It is common after pregnancy and obesity and most of the females present stating their condition as post baby belly where even after delivery the abdomen has not gone back to normal. The rectus abdominis muscle is the most superficial muscle in the abdominal wall which is attached from the xiphisternum to the pubic

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bone and hence it can get easily separated from the midline in case of pregnancy obesity and any other reason which can cause an increase in intra abdominal pressure[1]. The condition occurs secondary to thinning of the linea alba along the period of time which is actually a band like structure holding the two recti together. It is said that a milder variety can be treated with regular physiotherapy and exercises². However in long run it has not proven promising results. With studies the normal width of the recti muscles has been measured up to 15 mm at the xiphoid, up to 22 mm at 3 cm above the umbilicus and up to 16 mm at 2 cm below the umbilicus[2]. In another anatomic study, the width of the linea alba ranged from 11 to 21 mm when measured from the xiphoid process to the umbilicus, and decreased from 11 mm to 2 mm when measured from the umbilicus to the pubic symphysis². The thickness of the linea alba ranged from 900 to 1200 micrometers between the xiphoid and the umbilicus, and increased from 1700 to 2400 micrometers from the umbilicus to the pubic symphysis[2, 3]. However the range varies from person to person. Repair of divarication of recti is considered as cosmetic at many instances however if associated with hernia it becomes a medical entity to be treated. Open repair of divarication of recti leaves the patient with a big scar. On the contrary now the divarication of recti can be repaired laparoscopically in expert hands without any complication[3]. Many surgeons advocate two layered closure however in our case though the divarication was quite wide and throughout the attachment of the muscle with a large umbilical hernia we were able to manage the repair as a single layer. The umbilical hernia defect was repaired as well and a 15x15 polypropylene mesh placed at the site of hernia (**Figure 1** and **Figure 2**).



Figure 1: Large Divarication of Recti

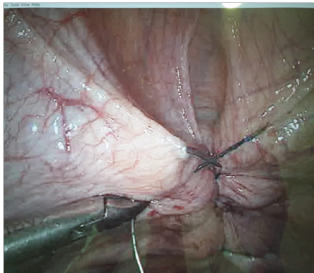


Figure 2: Laparoscopic Repair of Divarication of recti

6. Conclusion

Divarication of recti is common in female post pregnancy and obesity however the surgical treatment is still not widely advocated. Timely diagnosis and adequate surgical treatment ensures anatomical correction without any functional disability to the patient. History suggest physiotherapy and exercise for milder variety of divarication however in long run it has proven to show no results. Hence in today's era whether it is considered a cosmetic or a medical entity only treatment is surgical which shows promising results in expert hands.

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