

Case Report of Obstructed Complex Ventral Hernia Repair

Ramadan Shaker*

Department of General Surgery, Yanbu General Hospital, Kingdom of Saudi Arabia

***Corresponding Author:** Ramadan Shaker, Department of General Surgery, Yanbu General Hospital, Kingdom of Saudi Arabia.

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Abstract

With great advancement and plenty techniques for ventral hernia repair including open, laparoscopic and robotic methods. With various sites for mesh placement like onlay, sublay, underlay or even intraperitoneal. Limited options will be available in emergency situations especially in obstructed huge ventral hernia with loss of domain.

Both component separation technique (CST) with mesh reinforcement and bridged repair are feasible. Further studies to evaluate which type is superior to the other is still required.

Keywords: Ventral Hernia Repair; Complex Ventral Hernia; Component Separation; Bridged Repair; Abdominal Wall Reconstruction

Introduction

Open ventral abdominal hernia repair is one of the most common procedures performed in general surgery [1]. Complex abdominal defects present a challenge to any reconstructive surgeon [2]. Ramirez and colleagues introduced the components separation technique (CST) in 1990 as a new method for abdominal wall reconstruction in ventral hernia repair [3]. The component separations technique has gained significant popularity. The procedure can be done with or without the reinforcement of the fascia with mesh, mesh has substantially improved long term outcomes [4,5]. Polypropylene mesh is associated with a strong foreign body reaction resulting in the desired abdominal wall strength [6]. A second operative strategy is to perform a bridged repair: A mesh is used to span the hernia defect without closing the fascia [7].

Case Report

56 years old female with long standing ventral hernia presented to ER with abdominal distension, abdominal pain and repeated vomiting. No medical co-morbidities. On examination: incarcerated large ventral hernia with diffuse abdominal distension and tenderness.

Initial resuscitation, basic laboratory investigations and abdominal computed tomography (CT) with oral contrast were done which shows huge ventral hernia, distended bowel loops inside and arrested contrast at mid-jejunal level (Figure 1).



Figure 1: CT abdomen with complex ventral hernia.

Under general anaesthesia midline laparotomy incision was done. Subcutaneous large hernia sac with nearly whole the small

bowel, ascending, transverse colon, and omentum inside. Band obstructing mid-jejunal level was excised without affecting the vascularity. Bowel was reduced back into the abdominal cavity. Removal of the complex sac wall resulted in laterally dissected elevated flaps. Ramirez, open anterior components separation technique (CST) was done with dissection between the external and internal oblique muscles to allow closure of a wide midline abdominal wall defect by medial advancement of the rectus muscles and the fascia, (Figure 2). Midline closure of the defect with application of on-lay 26 *36 cm proline Bard® mesh, (Figure 3). Subcutaneous suction drain, excision of redundant skin before direct closure.



Figure 2: Ramirez, with external oblique separated.



Figure 3: On-lay proline mesh

Post-operative abdominal binder, early ambulation, gradual feeding and discharged on day 4 the drain removed after 15 days with marked improvement to the abdominal contour (Figure 4).



Figure 4: Post-operative with improved abdominal contour.

Discussion

Complex abdominal defects present a challenge to any reconstructive surgeon [2] in emergency obstructed large ventral hernia, Modifications of CST (endoscopic, posterior and perforator sparing) with laparoscopy will be difficult and hazardous. So feasible options will be open anterior CST with mesh reinforcement and bridged repairs [7].

During this repair we choose CST as there were already dissected lateral flaps created by sac dissection. Some studies prove significantly improved recurrence rates when components separation allows for primary fascial closure [8]. Mesh reinforcement with components separation has been shown to reduce hernia recurrence [9-11].

Another feasible option in our patient is the bridged repair with intra-peritoneal onlay Silpromesh® which can be fixed to edges of the defect without attempts to close the defect. Some studies show recurrence rates may be higher with a bridged repair [12].

Conclusion

Limited options are feasible during emergency repair of complicated large ventral hernia. Open anterior CST and bridged repair. Few comparative studies of these two approaches require further investigations to be performed to guide the selection.

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