



FIVE REPRESENTATIVE CASES OF CONCOMITANT ABDOMINOPLASTY AND COMPLEX INCISIONAL HERNIA REPAIR.

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Abstract

Background: Concomitant abdominoplasty and complex incisional hernia repair represent a challenging yet effective approach for patients presenting with abdominal wall deformities, excess skin, and large or complex hernias following previous abdominal surgeries. This case series describes five representative cases undergoing combined abdominal wall reconstruction with abdominoplasty and repair of complex incisional hernias. Patients were evaluated preoperatively with detailed clinical assessment and appropriate imaging to determine the size, location, and complexity of the hernia defects. The surgical approach involved meticulous dissection, hernia sac management, fascial reconstruction using appropriate mesh reinforcement where indicated, and simultaneous removal of excess abdominal skin and soft tissue through abdominoplasty techniques. All five patients underwent successful combined procedures with satisfactory restoration of abdominal wall integrity and improvement in abdominal contour. Postoperative outcomes were assessed in terms of wound healing, seroma formation, infection, recurrence, functional improvement, and aesthetic satisfaction. The combined approach allowed correction of both functional and cosmetic concerns in a single operative session while avoiding staged procedures. Although technically demanding due to the increased risk of wound-related complications, careful patient selection, optimization of comorbidities, adherence to abdominal wall reconstruction principles, and appropriate surgical planning can result in favourable outcomes. This case series highlights the feasibility and benefits of simultaneous abdominoplasty and complex incisional hernia repair as an integrated approach for selected patients requiring abdominal wall restoration.

Keywords: Abdominoplasty; Incisional hernia; Complex abdominal wall reconstruction; Ventral hernia repair; Mesh repair; Combined abdominal surgery; Abdominal contouring; Case series.



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INTRODUCTION

Abdominoplasty is among the most frequently performed aesthetic procedures by plastic surgeons[1] It is commonly undertaken to address fascial laxity or diastasis recti, which often leads to the development of abdominal wall hernias. These hernias occur when intra-abdominal contents protrude into a hernial sac, presenting a complex challenge for surgical repair, particularly in cases of massive ventral hernias. The abdominoplasty approach not only facilitates access to all components of the abdominal wall but also helps identify previously undetected hernias, resulting in a more aesthetically pleasing postoperative appearance. The goal of an ideal reconstruction is multifaceted: it must correct and prevent visceral eventration, provide dynamic muscle support, and enable a tension-free repair in a single-stage procedure.[2] Various techniques have been developed to enhance the surgical approach to abdominoplasty, including the use of a transverse lower abdominal incision and the resection of excess skin.[3] These techniques have been effectively incorporated into the management of ventral incisional hernias.

A significant consideration in hernia repair is the use of synthetic materials. While large sheets of synthetic material can be employed, they often result in a rigid, noncompliant, and adynamic abdominal wall, making them unsuitable in cases of contamination. Recognizing the limitations of synthetic materials, Ramirez et al. introduced the "components separation technique" in 1990. This innovative method bridges the fascial gap without the need for prosthetic material, allowing for up to 10 cm of unilateral advancement and facilitating a tension-free abdominal closure.[4]

This manuscript describes the application of abdominoplasty in conjunction with hernia repair, emphasizing the benefits of this combined approach in improving both functional and aesthetic outcomes for patients with large incisional hernias. Through a detailed exploration of patient selection, surgical techniques, and postoperative results, we aim to provide a comprehensive understanding of the advantages and challenges associated with this combined procedure.

CASE DESCRIPTIONS

Case 1

A 38-year-old female with a primary midline incisional hernia (EHS M4W2) following previous laparotomy presented with abdominal wall laxity and poor abdominal contour. She underwent retrorectus mesh repair with concomitant abdominoplasty. The postoperative course was uneventful. At 90-day follow-up, the patient demonstrated excellent contour restoration, marked improvement in HerQLes score, and no evidence of recurrence.



Case 2

A 45-year-old multiparous female presented with a recurrent incisional hernia (EHS M5W3) associated with redundant lower abdominal skin. Posterior component separation with transversus abdominis release (TAR), retromuscular polypropylene mesh placement, and abdominoplasty were performed. A small postoperative seroma resolved with aspiration. Functional recovery and cosmetic outcome were excellent.



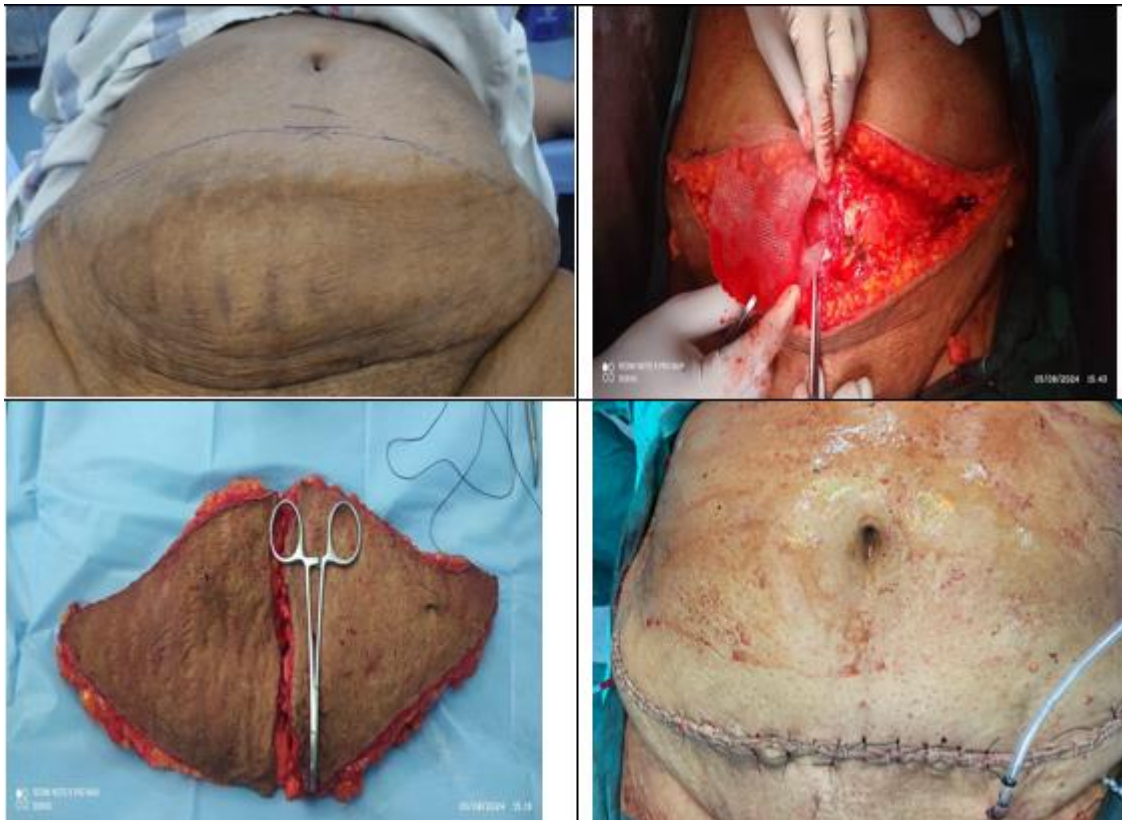
Case 3

A 41-year-old woman with a large infraumbilical incisional hernia and significant abdominal wall laxity underwent retromuscular mesh repair with progressive component separation and simultaneous abdominoplasty. Recovery was uncomplicated, with significant improvement in abdominal wall contour and quality of life. No recurrence was detected during follow-up.



Case 4

A 52-year-old female with a complex midline incisional hernia (EHS M4W3) after previous gynecological surgery underwent TAR with retromuscular mesh reconstruction and abdominoplasty. Minor superficial surgical-site infection responded to dressings and antibiotics. At 3 months, the patient had excellent scar appearance, improved abdominal contour, and no recurrence



Case 5

A 47-year-old female with a wide incisional hernia and severe rectus diastasis underwent single-stage abdominal wall reconstruction using retrorectus mesh repair and concomitant abdominoplasty. Mild postoperative seroma resolved conservatively. At 90 days, the patient reported marked functional improvement, high satisfaction with cosmetic appearance, and maintained fascial integrity without recurrence.



Case	Age/Sex	Clinical Presentation	Hernia Characteristics (EHS Classification)	Previous Surgery Etiology	Surgical Procedure Performed	Postoperative Complications	Follow-up Outcome
Case 1	38 years / Female	Primary midline incisional hernia with abdominal wall laxity and poor abdominal contour	EHS M4W2	Previous laparotomy	Retrorectus mesh repair with concomitant abdominoplasty	No postoperative complications	At 90-day follow-up, excellent contour restoration, marked improvement in HerQLes score, and no evidence of recurrence
Case 2	45 years / Female	Recurrent incisional hernia with redundant lower abdominal skin in a multiparous patient	EHS M5W3	Previous abdominal surgery with recurrent hernia	Posterior component separation with transversus abdominis release (TAR), retromuscular polypropylene mesh placement, and abdominoplasty	Small postoperative seroma managed successfully with aspiration	Excellent functional recovery and cosmetic outcome with maintained abdominal wall integrity
Case 3	41 years / Female	Large infraumbilical incisional hernia with significant abdominal wall laxity	Large infraumbilical defect	Previous abdominal surgery	Retromuscular mesh repair with progressive component separation and simultaneous abdominoplasty	No postoperative complications	Significant improvement in abdominal wall contour and quality of life; no recurrence during follow-up
Case 4	52 years / Female	Complex midline incisional hernia with abdominal wall deformity	EHS M4W3	Previous gynecological surgery	Transversus abdominis release (TAR) with retromuscular mesh reconstruction and abdominoplasty	Minor superficial surgical-site infection treated with dressings and antibiotics	At 3 months, excellent scar appearance, improved abdominal contour, and no recurrence
Case 5	47 years / Female	Wide incisional hernia with	Wide incisional hernia defect	Previous abdominal surgery	Single-stage abdominal wall reconstruction	Mild postoperative seroma	At 90 days, marked functional

		severe rectus diastasis and abdominal wall laxity			with retrorectus mesh repair and concomitant abdominoplasty	managed conservatively	improvement, high cosmetic satisfaction, and preserved fascial integrity without recurrence
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Laboratory and Investigation Findings in Patients Undergoing Concomitant Abdominoplasty and Complex Incisional Hernia Repair

Case	Routine Laboratory Investigations	Imaging / Radiological Assessment	Additional Preoperative Evaluation	Key Findings
Case 1	Complete blood count, renal function tests, liver function tests, serum electrolytes, coagulation profile were within normal limits	Contrast-enhanced CT abdomen revealed a primary midline incisional hernia (EHS M4W2) with abdominal wall laxity	Preoperative anaesthetic evaluation and nutritional assessment	Adequate haemoglobin level, normal metabolic profile, and suitable for elective abdominal wall reconstruction
Case 2	Complete blood count, blood glucose profile, renal and liver function tests, coagulation parameters were assessed	CT abdomen demonstrated recurrent incisional hernia (EHS M5W3) with a large abdominal wall defect and redundant lower abdominal tissue	Cardiopulmonary assessment and optimization of comorbid conditions before surgery	No significant laboratory abnormality; imaging confirmed need for posterior component separation and mesh reconstruction
Case 3	Routine haematological and biochemical investigations were within acceptable limits	CT abdomen showed a large infraumbilical incisional hernia with abdominal wall laxity and defect characteristics suitable for reconstruction	Preoperative abdominal wall assessment and anaesthesia fitness evaluation	No contraindication for combined repair; imaging guided mesh placement and component separation planning
Case 4	Complete blood count, renal function tests, liver function tests, coagulation profile, and inflammatory markers were evaluated	CT abdomen revealed complex midline incisional hernia (EHS M4W3) following previous gynecological surgery	Infection screening, nutritional evaluation, and cardiopulmonary assessment	Baseline investigations were satisfactory; defect complexity necessitated TAR with retromuscular mesh reconstruction
Case 5	Haematological profile, metabolic panel, coagulation studies, and nutritional parameters were assessed	CT abdomen demonstrated wide incisional hernia with severe rectus diastasis and loss of abdominal wall integrity	Preoperative assessment including anaesthetic clearance and abdominal wall functional evaluation	Investigations supported elective single-stage abdominal wall reconstruction with retrorectus mesh repair

DISCUSSION

Concomitant abdominoplasty with complex incisional hernia repair has gained increasing attention as a single-stage approach for patients presenting with both functional abdominal wall defects and aesthetic deformities. In the present case series of five patients, combined abdominal wall reconstruction with mesh reinforcement and abdominoplasty resulted in satisfactory functional recovery, improvement in abdominal contour, high patient satisfaction, and absence of hernia recurrence during short-term follow-up. The findings support the feasibility of integrating abdominal wall reconstruction with aesthetic correction in carefully selected patients.

Similar observations were reported by Marcaccini G et al. [5] who evaluated patients undergoing combined abdominoplasty and incisional hernia repair and demonstrated that simultaneous correction of abdominal wall defects and

excess skin can provide excellent functional and aesthetic outcomes without significantly increasing morbidity when appropriate surgical principles are followed. They emphasized the importance of patient selection, adequate vascular preservation of abdominal flaps, and appropriate mesh positioning to reduce wound-related complications.

Pilco RM et al. [6] described their experience with complex abdominal wall reconstruction combined with abdominoplasty techniques and reported favourable outcomes in terms of abdominal contour restoration, improved quality of life, and low recurrence rates. Their study highlighted that posterior component separation techniques, including transversus abdominis release (TAR), provide reliable fascial closure and allow reinforcement with large retromuscular mesh in complex hernia defects. In our series, similar principles were applied, with TAR and retromuscular mesh reconstruction being utilized in patients with larger and recurrent defects.

The role of mesh reinforcement in complex incisional hernia repair has been extensively studied. Novitsky et al.[7] introduced the transversus abdominis release technique as an effective posterior component separation method for large ventral hernias, demonstrating durable abdominal wall reconstruction with acceptable complication rates. The use of retrorectus mesh placement and component separation in our cases was consistent with these established reconstructive principles and contributed to maintaining fascial integrity during follow-up.

Sauerland et al. [8] evaluated the outcomes of simultaneous abdominoplasty and ventral/incisional hernia repair and reported that although combined procedures may carry a higher risk of wound-related complications, they provide significant advantages by avoiding multiple surgeries and improving patient satisfaction. Careful perioperative management, meticulous dissection, and optimization of patient-related risk factors were identified as key factors for successful outcomes.⁴ In the present case series, minor complications such as seroma and superficial surgical-site infection were managed conservatively, and all patients achieved favourable functional and cosmetic results.

CONCLUSION

Concomitant abdominoplasty and complex incisional hernia repair is a feasible and effective single-stage approach for selected patients with abdominal wall defects associated with excess skin, laxity, and contour deformities. In this case series of five patients, advanced abdominal wall reconstruction techniques, including retrorectus mesh placement, posterior component separation, and transversus abdominis release, combined with abdominoplasty, resulted in successful restoration of abdominal wall function and satisfactory aesthetic outcomes. Minor postoperative complications were managed conservatively, with no recurrence observed during follow-up. This combined approach provides the advantage of addressing both functional and cosmetic concerns in a single operative procedure, improving patient quality of life and satisfaction. Careful patient selection, meticulous surgical planning, appropriate mesh reinforcement, and adherence to abdominal wall reconstruction principles are essential to achieve durable and favourable outcomes.

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