

# The importance of preoperative preparation in managing subcostal incisional hernias, with loss of domain and mesh infection

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## Aim

Subcostal incisional hernias, with loss of domain (LOD) represent a significant surgical challenge, particularly in patients with a history of multiple mesh-related infections.

## Material & Methods

This case report discusses a 37-year-old patient with a subcostal LOD incisional hernia, complicated by chronic mesh infection and multiple previous surgical interventions. Given the high risk of recurrence and abdominal wall dysfunction, a structured, multidisciplinary preoperative approach was essential for optimizing surgical outcomes. The patient underwent a thorough preoperative assessment, including infection control through targeted antibiotic therapy, based on microbiological cultures. Due to the history of recurrent infections, complete removal of the infected mesh was planned to eliminate the persistent nidus of infection. Nutritional optimization was prioritized, as the patient exhibited signs of obesity. Imaging studies, including computed tomography with volumetric assessment, guided surgical planning, allowing for a patient-specific approach to domain restoration. Additionally, progressive pneumoperitoneum and botulinum toxin injections were utilized to facilitate fascial closure and reduce the risk of intra-abdominal hypertension.



**Fig.1** Subcostal LOD incisional hernia



**Fig.2** Complete removal of the infected mesh



**Fig. 3** Progressive pneumoperitoneum and botulinum toxin injections



**Fig. 3** Rives-Stoppa procedure, with bilateral Transversus Abdominis Release (TAR)

## Results

Surgical intervention involved a Rives-Stoppa procedure, with bilateral Transversus Abdominis Release (TAR) to achieve tension-free closure and reinforce the abdominal wall. This technique provided sufficient myofascial advancement, restoring domain while minimizing intra-abdominal pressure and recurrence risk.

## Conclusions

A comprehensive preoperative strategy was crucial in managing this high-risk patient. By addressing infection, optimizing physiological status, and utilizing advanced surgical planning techniques, the likelihood of a successful repair was improved while minimizing postoperative complications and recurrence rates. This case highlights the importance of meticulous preoperative preparation in subcostal LOD incisional hernia management.

