Case Report

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Single staged surgical procedure for recurrent incisional hernia with trophic ulceration: a viable surgical option

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ABSTRACT

Incisional hernia by itself is a very challenging surgical disease to treat. Recurrent incisional hernia with trophic ulceration adds to the complexity of the problem making surgical treatment more difficult. A case of a recurrent incisional hernia with trophic ulceration treated by a single staged procedure comprising of wide excision of the trophic ulcer with repair of the incisional hernia is presented to highlight the applicability of a single staged procedure as a viable option for managing such complex hernias.

Keywords: Incisional hernia, Trophic ulceration

INTRODUCTION

The incidence of incisional hernia despite improvement in surgical techniques continues to be in the range of 10 to 15%. Even in urban cities the condition may go undiagnosed eventually leading to a multitude of complications. Trophic ulceration leading to rupture of an incisional hernia is quite an uncommon condition requiring a judicious management algorithm in order to prevent a recurrence or further complications. We report here a case of trophic ulceration in a long standing recurrent incisional hernia with loss of domain in order to highlight the pathophysiology and surgical options for managing such a case.

CASE REPORT

A 48 year old female presented with a recurrent incisional hernia through a lower midline scar. The patient had undergone hysterectomy 10 years back following which she developed an incisional hernia. She

had neglected the hernia swelling as a result of which it increased in size over a period of time. She then underwent surgical repair of the incisional hernia at a district hospital. 3 years after the repair the hernia recurred. She did not seek any surgical treatment. The hernia increased in size eventually leading to irreducibility. However she did not give any history of obstructive symptoms. The overlying skin as per her history developed hyper pigmentation, thinning and eventually broke down. She also gave history of discharge from the ulcerated area. She sought treatment from a general practitioner who referred her to our facility. She did not have any medical comorbidity. General examination revealed normal vital parameters. Local examination revealed a large incisional hernia with significant loss of domain. There was an ulcer 2 inches in diameter on the most dependent part of the hernia swelling (Figure 1). The margins were ill defined with scant pale granulation tissue in the floor of the ulcer. The base of the ulcer was formed by loop of intestine confirmed by gurgling sensation while palpating the base of the ulcer. The swelling was irreducible. Contrast enhanced computerized tomography (CECT) was done which revealed an underlying adherent bowel loop occupying the hernia sac (Figure 2).

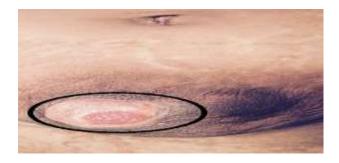


Figure 1: Clinical photograph showing the trophic ulcer over the vertex of the hernia swelling.

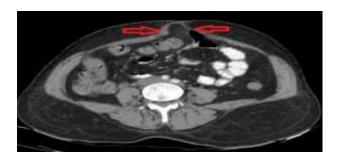


Figure 2: CECT showing a bowel loop underlying the ulcer.



Figure 3: Incision marked after occlusive draping of the ulcerated area.



Figure 4: Wide excision of the ulcerated skin along with the adjacent thinned out unhealthy skin leaving behind the underlying loop of intestine marked by the black circle.

Since the ulcer was in the non-healing phase the patient was admitted to the hospital for wound management. Irrigation with diluted hydrogen peroxide solution followed by tropical anti biotic dressings was done. As a result the ulcer started improving showing signs of healing with the development of the three typical zones of a healing ulcer. Microbiological culture from the ulcer did not reveal any growth of organisms. A decision to operate upon this patient was made.



Figure 5: Opened sac showing the underlying adherent loop of intestine. The area marked by a black circle is part of the bowel forming the base of the ulcer.



Figure 6: Serosal injury caused while separating the adherent bowel loop from the ulcerated area.



Figure 7: Serosal injury repaired by interrupted 3-0 silk sutures.

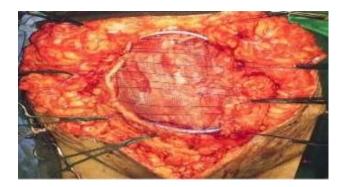


Figure 8: Defect delineated and a mesh placed over it.

Negative suction tube drains kept over the mesh followed by approximation of the edges created by component separation.

The ulcerated area, surrounding scar tissue and the redundant skin overlying the hernia sac was carefully marked (Figure 3). The sac was approached through the elliptical incision taking utmost care to remain away from the ulcerated area. After reaching the neck of the sac, it was opened and the bowel loop underlying the ulcer was carefully dissected free (Figure 4). The serosa of the intestinal loop underlying the ulcerated area was repaired by few interrupted stitches (Figure 5). The intestine was reposited back in to the peritoneal cavity. Component separation was carried with creation of flaps from the anterior rectus sheath. The sac was trimmed and closed with vicryl. A tailor cut poly propylene mesh was placed over the defect extending 2" superiorly, laterally and inferiorly from the borders of the defect (Figure 6). The mesh was fixed with 2-0 polypropylene stitches. Effectively the mesh was placed in the retro muscular layer. The two rectus muscles were over the mesh and approximated in the midline with interrupted 1-0 vicryl stitches. A negative suction tube drain was placed over the mesh and brought out through a separate incision. The newly created flaps were approximated with no 1 prolene sutures (Figure 9). Subcutaneous tissues approximated by 2-0 vicryl and skin approximated with skin staples. The drains were removed after 72 hrs and patient was advised a firm abdominal binder. The staples were removed on the 10 the post-operative day. Postoperative recovery was absolute uneventful with complete healing of the incision (Figure 10).

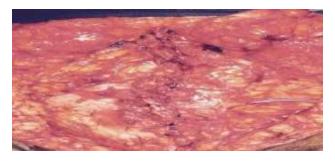


Figure 9: Flaps approximated with interrupted prolene sutures.



Figure 10: Final outcome of the surgery after suture removal.

DISCUSSION

Incisional hernia continues to be one of the most challenging surgical conditions. It poses a greatest challenge to the technical skills and a competence of a general surgeon.^{1,2} Incisional hernias associated with loss of domain are usually long standing and therefore invariably complicated. Tight traditional clothing used by women on the Indian subcontinent adds to the complication rate along the natural course of the disease. Continuous friction with overriding clothing usually leads to thinning of the skin at the vertex of the hernia swelling. The skin initially becomes hyper pigmented, and then thinned out. Since there is inadequate vascularity and poor underlying soft tissue support, ischemia occurs leading to breakdown and ulceration. 3,4 If such a patient is exposed to high abdominal pressure by way of excessive straining or by excessive physical activity there is a likelihood of spontaneous rupture of the hernia sac. This can lead to gross evisceration and a state of severe shock necessitating immediate surgical intervention.

Tropic ulceration over a longstanding hernia swelling is a forerunner to more serious complications. Such trophic ulceration can be classified into two types uncomplicated and complicated. The uncomplicated phase is the phase during which the ulcer gets infected. The usual organism found in cultures obtained from ulcer is staphylococcus aureus. Occasionally in neglected cases one could find dangerous organisms such as pseudomonas and clostridia species.

The complicated phase could prove to be a surgical catastrophe for the patient. The weakened area could give way leading to a fistula or to the development of severe evisceration. The most important dilemma which faces the attending surgeon in such a situation is to formulate a surgical algorithm for management. The traditional teaching promotes ulcer healing followed by surgical repair. However this may not be relevant in majority of cases as it may take more time thereby adding complexity to the natural history of the incisional hernia. The aim of the primary treatment should be to achieve a culture negative healing ulcerative lesion by means of meticulous regular dressings and antibiotic therapy. Once the ulcer

enters into the healing phase with negative culture one can safely embark on the surgical repair for the hernia. In the case presented culture negativity was achieved followed by surgical intervention. Wide excision of an elliptical portion of the overlying thinned out skin including the ulcerated area was done with utmost care to prevent direct contact of the ulcerated area with the dissection site. Once the underlying bowel is examined and repaired for the serosal injury one can commence with component separation in order to bridge the wide defect.⁶ Controversy still surrounds this issue as to whether a two staged repair or a single stage repair should be carried out. In an urban setting, as the follow up of patient is predictable, one can resort to 2 staged repairs. The single staged repair comprises of wound management of the ulcerated area with an aim to achieve healing. If the ulcerated area happens to be large then a split thickness skin grafting should be carried out in order to achieve a complete healing. This should be should followed by a second procedure for repair of the incisional hernia. However in case of patients who have neglected the lesion or those who hail from rural settings or low socio economic urban settings it would not be a good practice to wait for such a long period of time. In such a clinical scenario it would be a safe practice to admit the patient and aggressively manage the ulcer till it enters the phase of healing with negative culture. This can immediately be followed by wide excision of the unhealthy skin including the ulcerated area with concomitant repair of the underlying incisional hernia (Figure 4). One needs to understand the significance of meticulous surgical technique during the procedure.² The surgeon has to ensure absolute decontamination of the dissection site either by occlusive draping of the ulcerated site or by intermittent saline irrigation during the course of the surgical procedure (Figure 3). Since the infraumbilical region of the anterior abdominal wall is by itself deficient in both anatomical tissues and strength as compared to upper abdomen one has to accept the role of a prosthetic mesh to strengthen these tissues. Keeping the mesh as an onlay may be dangerous as there is a likelihood of infection and mesh migration. Placement of the mesh as an inlay or at an intermediate level would be a safe practice.^{6,7} Placing a closed negative suction drain at the level of the mesh offers a great advantage as it avoids the formation of a seroma. These are usually forerunners to infection. Therefore drains have to be kept until the output stops which may range from 2 to 4 days. Removal of the drain may not necessarily mean that further seromas may not develop. This late sequel can be prevented by using good tamponade with the use of an abdominal corset or abdominal binder. Abdominal binder gives uniform pressure over the abdomen thereby ensuring a good cooptation of the internal surfaces within the layers of the abdominal wall. This can prevent the

development of late seromas as well improve the cosmetic outcome of the repair.⁷

CONCLUSION

Tropic ulceration in an incisional hernia is a forerunner to a major surgical catastrophe. Prompt imaging to ascertain the underlying content of the hernia sac is pivotal. Conservative treatment of the trophic ulcer in order to set the process of healing should be meticulously followed.

A single stage procedure comprising of the wide excision of the trophic ulcer along with a rim of thinned out and unhealthy skin followed by repair of the incisional hernia is a viable option in such cases.

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