

Use of Redundant Skin as Autograft in Repair of Incisional Hernia

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OBJECTIVE – To evaluate avoiding the use of synthetic graft in repair of incisional hernia by utilizing redundant skin as autograft thereby increasing cost-effectiveness and at the same time relieving the patient from the psychological tension of retaining a foreign body inside. **METHODS** – Seven women who had undergone either lower segment cesarean section and two who had abdominal hysterectomy and subsequently developed incisional hernia were taken for this study. Out of these nine women, three had transverse incision and six longitudinal one. Instead of using synthetic grafts, redundant skin was prepared and used as graft for repair of hernia. **RESULTS** – One woman developed infection which was cured with regular dressing and antibiotics. There was no rejection, re-hernia, or re-stitching. One woman, the one who had developed infection, had fever. Two women complained of abdominal discomfort in the immediate post-operative period. **CONCLUSION** – Use of redundant skin as autograft in repair of incisional hernia is more cost-effective than synthetic grafts. The acceptance of the graft is satisfactory and complications are minimal.

Key words : incisional hernia, skin autograft

Introduction

An incisional hernia is caused by incomplete healing of the operative wound in which the peritoneum remains intact while the fascial margins and adjacent muscles separate, leaving a defect beneath the subcutaneous fat into which the bowel may be herniated. Incisional hernias are a relatively common occurrence after abdominal operations, having been reported to occur in 2% to 11% of all patients undergoing such procedures¹. The recurrence rates following the simple incisional hernia repair procedures (Mayo-procedure or direct adaptation) are unacceptably high, up to 50%². Korenkov et al³ in a randomized clinical trial of suture repair, polypropylene mesh and autodermal hernioplasty for incisional hernia, found that pain was significantly more frequent after polypropylene mesh repair and the severity of infections after polypropylene mesh implantation prompted the trial committee to discontinue the study. Kranich⁴ showed that modified skin grafting can be helpful in restoring the abdominal wall to adequate anatomic condition and full functionality, even in the wake of large post-operative incisional hernias. The rate of recurrence recorded by the author from 66 skin grafts amounted to only 7.6%⁴. Our study tries to elucidate the use of redundant skin as autograft in repair of incisional hernia as a cost-effective procedure with minimal side-effects and recurrence rates.

Material and Methods

Over a period of 9 years, a total of nine patients who had developed incisional hernia, seven following lower segment cesarean section and two following abdominal hysterectomy were studied. Out of these, three cases were operated previously with transverse incision and six with longitudinal incision.

The redundant skin was excised first by almost an elliptical incision. The parietal peritoneum and rectus sheath were separated from the rectus muscle. The peritoneum was closed by continuous sutures. Two to three stitches were used to appose the rectus muscles. Rectus sheath was apposed with continuous interlocking sutures with prolene. The skin flap which was previously excised was prepared by dipping in sterile boiled water and the epidermis layer was removed by rubbing with gauze soaked with normal saline. This flap was placed over the repaired rectus sheath with its inner surface (dermis) facing the sheath and the margins were sutured all around with the rectus sheath with interrupted sutures. The skin was closed with interrupted sutures with monofilament polyamide black. The stitches were removed on the sixth post-operative day and the women were discharged on the seventh post-operative day with the advice to use the abdominal binder for the next 6 months.

Results

Out of the nine women, three were following transverse and six following longitudinal incision, thus showing the higher incidence of hernia with longitudinal incision. Seven had undergone cesarean section and two abdominal hysterectomy.

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Table I. Complications

Complications	Number
Infection	1 (11.1%)
Fever	1 (11.1%)
Abdominal Discomfort	2 (22.22%)

Table I shows the incidence of complications following the repair using redundant skin as autograft. Only one woman developed infection. There was no incidence of rejection, re-hernia or re-stitching. Febrile morbidity was found in the woman suffering from infection.

There was no recurrence of hernia during a period of follow-up of 5 years.

Discussion

The advantages of skin grafting include the use of autologous material, smooth healing, and high resistance of the skin flap to infections as well as high tensile strength and elasticity of the corium⁴.

Nartsissov and Brezhnev⁵ used autodermal hernioplasty in 102 patients. The transplant was treated by heating through a napkin moistened in physiologic salt solution. We dipped the excised skin flap in sterile boiled water and removed the epidermis by rubbing with gauze soaked in normal saline.

Marchac and Kaddoura⁶ showed by clinical and histological studies that the full-thickness skin rapidly loses its epidermal components and appears to transform itself into a dense connective tissue very similar to normal aponeurosis. Watier et al⁷, in a study of 30 patients operated by skin lacing procedure for large incisional hernias, showed that this method can resolve the difficult problem of treatment of large, recurrent incisional hernias regardless of the patient's age. In a study by Chareton et al⁸, of the 25 patients who were treated for large incisional hernias using the skin lacing technique, between 1980 and 1990, 24 hernias were midline and one was at the site of a Mc Burney's incision. In our study, six women had longitudinal and three had transverse incisions previously.

Caloghera et al⁹ in their study, investigated the efficiency of the non-epidermic free skin graft in the treatment of eventration and hernia. The non-epidermic free skin graft was used over a period of 15 years (1964-1978) in a total of 134 patients. The use of the dermic graft was simple from the technical view point, and the post-operative morbidity was not significant. In 62 patients over a period of 1 to 12 years, only two i.e. 3% relapses were noted. Kochnev et al¹⁰ showed that autodermic plasticity of hernial

openings had good long-term results in 93 patients and the number of post-operative complications were 3.5% and mortality was 1%. Recurrences were not encountered. Shevchenko¹¹ found in his study of 450 patients treated with autodermal plasty, the incidence of hernia recurrence to be 27.2% and lethality, 1.6%. In our study, only one woman developed infection and fever. There were no rejections or recurrences. Two women had post-operative abdominal discomfort.

The quality of the results obtained from the mechanical standpoint, as well as in terms of tolerance, together with the simplicity of the technique and its cost-effectiveness, has led us to consider it as a method of choice in the repair of incisional hernias, especially large ones.

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