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The Pull and Roll Dermal Flaps: a novel technique for the treatment of chronic abdominal wounds

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ORIGINAL

Dear sir, we would like to share a case of an abdominal wound dehiscence treated by an improved technique rather than a direct secondary closure. Wound dehiscence is an infrequent complication that increases morbidity and costs. It can be divided into two types: superficial dehiscence and deep dehiscence (also referred to as evisceration when it occurs in the abdominal area) (1). Though evisceration is a surgical emergency, superficial dehiscence can usually be managed conservatively, preferably by secondary closure or by secondary intention (2). In any case, if not given adequate care, it can turn into a chronic wound with a significant defect. Risk factors for poor wound healing usually include advanced age, diabetes, smoking, chemotherapy, the use of steroids, cancer, hypoalbuminemia, and emergent surgery (1). In this paper, we present a new alternative surgical technique used successfully in a case of a chronic midline small deep abdominal wound dehiscence.

A 65-year-old woman with metastatic ovarian cancer with chemotherapy, underwent multiple laparotomies, now presenting with a 10 x 4 cm deep abdominal wound dehiscence. Regular dressing and bedside wound debridement were followed by an attempt at re-closure.

Skin laxity was appreciated with a skin pinch test and marked for de-epithelialization (Figure 1) to create dermal flaps. The dermal flaps are then pulled medially without undermining, rolled in, and fixed to the deep fascia (in the midline and supero-inferiorly) with 2-0 Polyglactin 910 to reinforce the midline closure (fig.2). This technique does not include any undermining therefore reducing the dead space and avoiding any fluid collection postoperatively. Thus, it offers support to the fascia without the inconvenience of using synthetic mesh in the setting of a chronic wound. The use of an autologous dermal flap in the repair of incisional hernia was previously proved effective, especially in infected or chronic abdominal wall dehischence (3). The skin edges are then sutured in two layers by 20 Polyglactin 910 and 3-0 nylon sutures over a suction drain. Post-operative recovery was quick and uneventful and there was no dehiscence at 6 months post-operatively.

To our knowledge, this detailed technique is not previously described and provides several advantages. It is simple to plan and perform and can be done under local anesthesia. It also avoids any undermining of the tissue which would expose the wound to tissue necrosis, dead space formation, and fluid accumulation. The pull and roll dermal flaps reinforce midline fascial closure without the use of a synthetic mesh, seal and fill the dead spaces with viable tissue, Therefore reducing dehiscence, fluid accumulation, and infections.

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Disclosure

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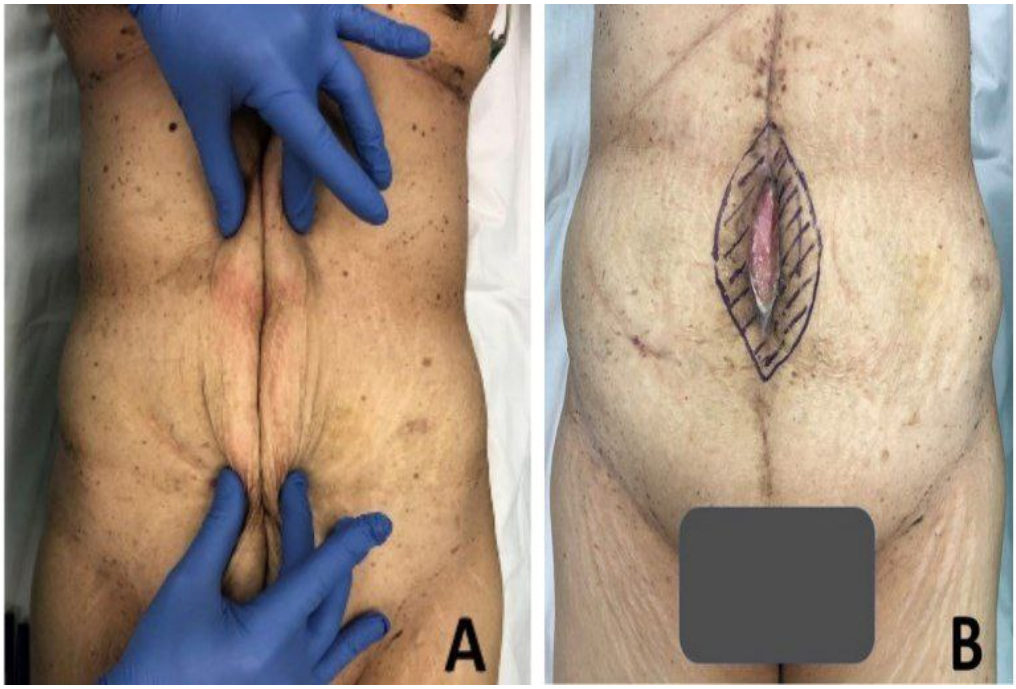

Figure 1. Pre-op Planning and Marking of The Pull And Roll Flap. **A-** Approximated Skin to Close The Defect; Note The Tissue Laxity Present. **B-** Hatched Markings Showing the Skin to Be Deepithelialized.

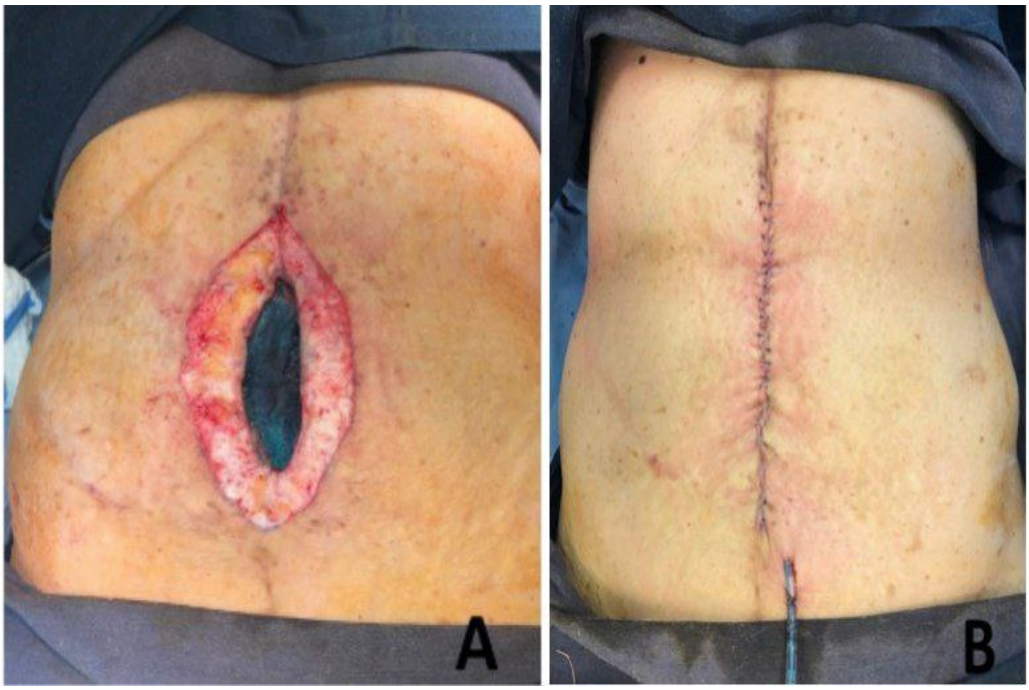

Figure 2. The Pull and Roll Flap in 3 Simple Steps: **A-** De-epithelialization of the Skin Followed By A Medial Pull And Roll To Reduce The Dead Space. **B-** Direct Closure of the Wound

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