

# SKIN GRAFTING ON THE GASTRIC WALL FOLLOWING GASTRIC PULL-UP RECONSTRUCTION: A CASE REPORT

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A simple, rapid, reliable technique to close an anterior neck defect is presented. This technique involves skin grafting directly onto the de-serosalized stomach wall following gastric pull-up reconstruction for a hypopharyngeal cancer.

**Key Words:** gastric pull-up, skin grafting, visceral wall  
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The technique of providing a well-vascularized wound base for the growth of skin grafts is well known. It is usually suggested that this technique be applied to healthy granulated tissue or a muscular surface. On rare occasions, however, the skin graft might also be applied to the de-serosalized visceral wall. We present a case of skin grafting on gastric wall—an unusual surface.

## CASE PRESENTATION

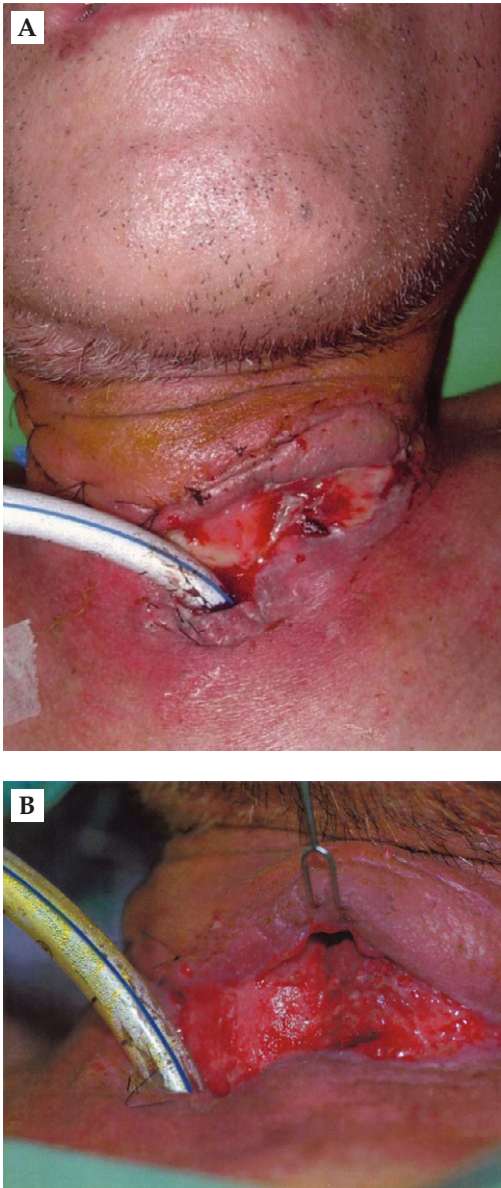
A 50-year-old man was a victim of hypopharyngeal carcinoma with T2N1M0. He underwent wide tumor excision with permanent tracheostomy insertion. In addition, immediate free 14-cm length jejunal flap reconstruction was done at the same time. Unfortunately, the flap failed a few days later due to venous

insufficiency. Second-stage reconstruction of orogastronomy anastomosis was then made with a gastric pull-up after total esophagectomy. Although the stomach was pulled up free of greater and lesser curvature in an effort to close the defect, a moderately-sized raw surface of 10×5 cm with the exposure of the underlying gastric portion still remained (Figure 1).

Rather than employing the more time-consuming and complicated flap procedures, a simple partial-thickness skin graft was applied to the body of the stomach, closing the defect completely 21 days post-gastric pull-up surgery. The graft was obtained from the right thigh using a dermatome, yielding a graft of about 0.010 inch (0.25 mm) in thickness. The graft was then meshed at a ratio of 1:1.5, and sutured to the underlying de-serosalized gastric wall with 4-0 nylon stitches in a tie-over fashion. By the 4<sup>th</sup> post-operative day, the tie-over dressing was removed, and the graft was found to be completely successful (Figure 2). Two weeks later, the patient was discharged from the hospital. Unfortunately, the patient was lost to follow-up thereafter; however, the grafted skin had survived well at the time the patient was discharged.

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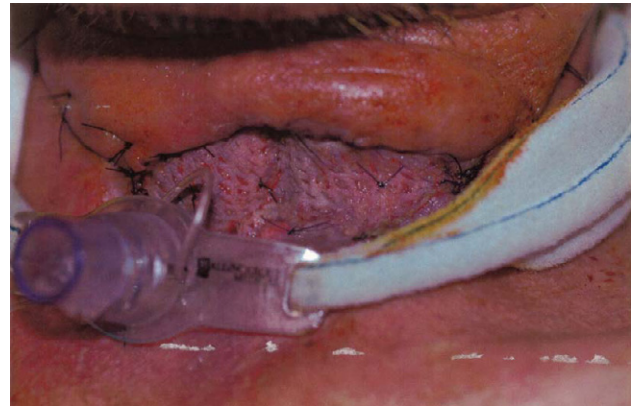
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**Figure 1.** (A) A raw surface of  $10 \times 5$  cm remained in the anterior neck area post-gastric pull-up. (B) De-serosalized gastric wall showed good granulation tissue for skin grafting.

## DISCUSSION

Currently, several treatment options exist for hypopharyngeal cancer patients [1–3], and surgery combined with radiation therapy is the standard treatment for most such patients. Treatment goals are aimed at eradicating disease and restoration of function, while causing the least morbidity and the most effective relief from symptoms. Stomach and pectoralis major myocutaneous flaps have both been effective in providing hypopharyngeal lining and muscle bulk to



**Figure 2.** Skin grafting survived completely on the de-serosalized surface of the stomach.

close large oropharyngeal defects. Their robust musculature, in some cases, has proven to be an ideal bed for the application of a split-thickness skin graft when dealing with the replacement of major anterior neck skin defects.

To achieve better results, the pharyngoesophageal segment must be reliably and rapidly reconstructed. This might also be achieved by a visceral transposition procedure rather than by a free tissue transfer or free visceral transplantation. The stomach has been the visceral tissue of choice. The pharyngoesophageal segment could be reconstructed by gastric transposition or gastric pull-up. The primary advantage of the gastric pull-up is that it allows for reliable single-stage reconstruction with a single anastomosis.

In our report, this simple regimen resulted in a completely successful take of the grafted area of the stomach in this patient, with good skin quality. The patient was discharged from hospital by the 14<sup>th</sup> day.

It is well recognized that, provided hemostasis is satisfactory and the recipient site is clean and sufficiently immobilized, partial thickness grafts will take satisfactorily on a wide variety of deeper structures, such as fascia, muscle and paratenon. Our experience suggests that in this situation the de-serosalized layer of the stomach accepts skin grafts very well, with resulting skin of an excellent quality as long as sufficient immobility is maintained.

The stomach was initially chosen as the viscus to replace the resected pharyngoesophageal segment because of its excellent blood supply and reliable pharyngogastric anastomosis following transposition. These two factors enabled us to employ the skin grafting applied here.

In such a situation, the experienced surgeon has various alternative methods for repairing the defects shown in Figure 1. For example, a pectoralis major myocutaneous or deltopectoral flap could be applied. However, these larger and more time-consuming procedures are not absolutely necessary and would simply add to what is already a major and lengthy surgery. Our simple and reliable technique for such a difficult case, as an alternative option, might eliminate the need for such a choice, even though this patient was lost to long-term follow-up in our report.

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# 利用直接植皮在去漿膜化的胃壁來解決 胃替代食道手術後困難不癒的傷口

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在下咽部重建手術中，利用胃替代食道的重建術往往可以得到不錯的治療效果。然而，在某些特殊情況下，前頸部傷口無法直接縫合，且缺乏合適的皮瓣覆蓋時，可以考慮使用直接植皮于去漿膜化的胃壁來解決胃替代食道手術後困難不癒的傷口；在此情況下，上述方法是一個簡單、方便且安全性高的解決之道。

**關鍵詞：**去漿膜化的胃壁，下咽部重建手術，植皮

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