

Three Surgical Cases About the Use of Pedicled Flaps for Closure of Circular and Semicircular Skin Defects

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Citation: Alvarado A (2019) Three Surgical Cases About the Use of Pedicled Flaps for Closure of Circular and Semicircular Skin Defects. *Plast Surg Mod Tech* 6: 145. DOI: 10.29011/2577-1701.100045

Received Date: 11 March, 2018; **Accepted Date:** 27 March, 2019; **Published Date:** 04 April, 2019

Abstract

This article describes three cases related to closure of circular and semicircular skin defects by using pedicled flaps such as the bird's beak incision and the goblet incision.

Keywords: Bird's Beak Incision; Closure of Circular and Semicircular Skin Defects; Goblet Incision; Reciprocal Incisions; Skin Pedicled Flaps

Introduction

Here I am introducing three surgical cases as an example of the advantages of using a bird's beak incision and a goblet incision.

Description of the Cases

The first case is a large basal cell carcinoma of the right temple of 2 cm diameter where a bird's beak incision is traced with its beak pointing to the outer cantus of the eye (Figure 1a). The lesion was removed in one piece and a larger than the usual complementary extension was necessary because of the presence of a wart in the middle of the flap (Figure 1b). The incision was closed after moderate dissection of the edges of the wound using interrupted nylon sutures without undue tension (Figure 1c).



Figure 1a: A bird's beak incision is traced around a large basal cell carcinoma of the right temple with the beak pointing to the outer cantus of the eye.

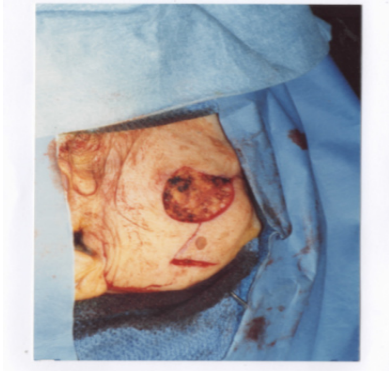


Figure 1b: The lesion is removed in one piece, leaving an extensive skin defect with a well-controlled bleeding at its bottom.

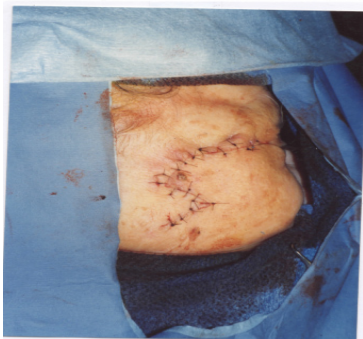


Figure 1c: The V-flap is rotated to cover the raw area with no undue tension and is secured in place with nylon sutures.

The second case is a deep and extensive pressure ulcer with undermining the skin in the sacral area (Figure 2a). A bird's beak incision is traced with the beak pointing toward the right gluteal area (Figure 2b). The ulcer is completely excised exposing the sacral bone and gluteal muscles. A triangular flap is rotated and closed with subcutaneous and skin sutures with minimal tension at the edges (Figure 2c).



Figure 2a: A deep and extensive pressure ulcer measuring 5 cm in diameter with undermining of the skin of the sacral area.

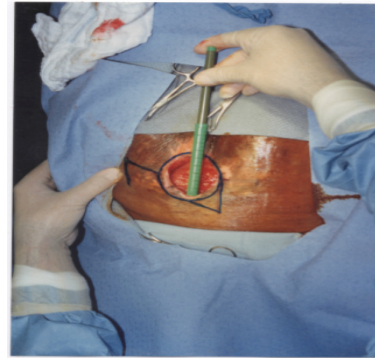


Figure 2b: A bird's beak incision is traced surrounding the ulcer with the beak pointing downward and to the right gluteal area.

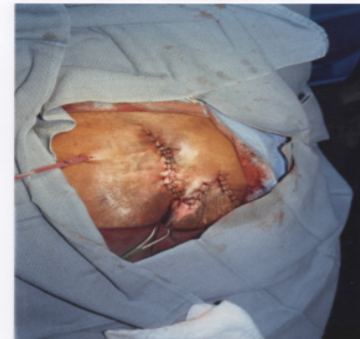


Figure 2c: The ulcer is removed completely and then closed by rotation of the flaps and sutured with subcutaneous and skin sutures with minimal tension at the edges.

The third case is a large sacrococcygeal ulcer that is demarcated with a robust semicircular incision and a complementary incision extending into the left gluteal area (Figure 3a). The flaps are mobilized and held in place with towel clamps (Figure 3b). The incision is closed with interrupted sutures with no undue tension (Figure 3c). All of these ulcers healed well and without signs of ischemia or necrosis of the flaps.



Figure 3a: With the patient lying on his right side, a goblet incision is traced around a large sacro-coccygeal ulcer with the stem and base located at the left side of the ulcer.



Figure 3b: The lower flap of the incision is mobilized to fill the skin defect. Then, the flaps, with a wide base, are rotated and held in place with towel clamps.



Figure 3c: Finally, the incision is closed with interrupted sutures with no undue tension.

Analysis of the Incisions Used in this Presentation

The bird's beak incision is traced with the beak pointing to the axis representing the minimal tension lines of the skin, and the

V-flap is traced at 60° of this axis. As we can see, this flap has a wide base which will eliminate the risk of ischemia or necrosis due to compromise of the blood supply.

The goblet incision is traced using a robust semicircle surrounding the skin lesion and with its upper corner pointing to the axis representing the minimal tension lines of the skin. An additional incision (resembling a goblet stem and base) is traced at the midpoint on the curved side of the incision. With this incision there is two possible flaps to be mobilized and only one of them can be used to fill the defect of the semicircular defect depending on the anatomical conditions of the skin. The main advantage of the goblet incision is that the flaps are provided with a wide base so the risk of ischemia or necrosis is negligible.

Summary

In summary, we can use these two incisions to close circular and semicircular skin defects to avoid the risk of ischemia or necrosis due to the fact that the free flaps are provided with a wide base. Before the planned surgery, it is very convenient to make paper models to make sure that they adapt to the particular anatomy of the region involved. These models can be printed in different sizes using a regular copying machine.

Note

For more technical details, please refer to an article of mine published in *Plastic and Reconstructive Surgery Glob Open* (with a corrected erratum) [1].

References

1. Alvarado A (2016) Designing flaps for closure of circular and semicircular skin defects. *Plast Reconstr Surg Glob Open* 4: 607.