


## Case Presentation

# Applicability of bilobed transposition flaps in extranasal locations

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### Abstract

The bilobed flap is a local transposition flap originally described for the reconstruction of surgical defects of the nose. Its success and versatility are well recognized in this anatomical region; however, its use in extranasal reconstructions is less common. We present 5 clinical cases of extranasal applications of the bilobed flap that highlight its versatility across a wide range of anatomical sites. The locations include the hand (n = 1), foot (n = 1), ear and periauricular region (n = 1), chin (n = 1), and temporal region (n = 1). The surgical defects ranged from medium to large in size, with maximum diameters between 20 and 55 mm. All procedures were performed in a single session under local anesthesia, with no associated complications. All patients achieved good functional and aesthetic outcomes.

1989, Zitelli limited the total arc of rotation to 90°–100° and included the excision of a Burrow's triangle at the point of rotation.<sup>3,5,6</sup> This decrease in the arc of rotation helps reduce tension and improves cosmetic outcomes.<sup>2,3,7</sup>

The success and versatility of the bilobed transposition flap are well recognized in nasal reconstruction; however, the technique is also applicable in various other anatomical regions.<sup>2,8,9</sup> We present 5 clinical cases of extranasal applications of the bilobed flap that underscore its versatility across diverse anatomic locations. These include the hand (n = 1), foot (n = 1), ear and periauricular region (n = 1), chin (n = 1), and temporal region (n = 1). Surgical defects were medium to large in size, with maximum diameters ranging between 20 and 55 mm. All procedures were completed in a single session under local anesthesia, and no surgical complications were observed.

The surgical site is prepared in a standard sterile manner, and the bilobed flap is designed according to the modifications proposed by Zitelli.<sup>3,5,6</sup> A primary lobe is created from an area of skin laxity approximately 45° to a line bisecting the primary defect and is sized to match or slightly exceed the dimensions of the defect. A secondary lobe is then designed 45° from a line bisecting the primary lobe and is generally sized to approximately 70% to 80% of the primary lobe. Excision of a Burrow triangle at the point of rotation is anticipated. Local anesthesia is administered using 1% lidocaine with 1:100 000 epinephrine. The flap is carefully undermined in a subdermal plane, and the surrounding skin is undermined in the same plane. The flap is elevated, and hemostasis is achieved using electrocoagulation. Closure begins at the tertiary defect to minimize tension on both the primary and secondary lobes. The primary and secondary lobes are then sutured in place. Routine post-operative care instructions are provided to the patient and/or caregivers. Prophylactic antibiotics are prescribed for high-risk anatomical sites (eg, ear and periorificial re-

### Introduction

A wide range of reconstructive techniques are available to the dermatologic surgeon. Primary closure is a widely used reconstruction method because of its simplicity, cost-effectiveness, and predictable outcomes; however, larger surgical defects may require more complex reconstructive techniques.<sup>1</sup>

The bilobed flap is a double transposition flap in which the first lobe fills the primary defect and the second lobe addresses the defect created by the first lobe.<sup>2</sup> It was first described in 1918 by Esser for the reconstruction of surgical defects on the nasal tip.<sup>2-4</sup> The original technique involved a 180° arc of rotation, which carried risks such as compromised flap viability, deformation at the pedicle base, and often required multiple surgical revisions.<sup>3</sup> In

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gion). Sutures are removed at the appropriate postoperative interval. All procedures presented were performed in a single session under local anesthesia.

## Case Synopsis

### Ear and Periauricular Region

A 99-year-old woman presented with a 20 × 10 mm hyperkeratotic plaque on the helix and earlobe (**Figure 1**). After excision of the lesion, a bilobed flap was designed and used to reconstruct the resulting surgical defect, with preservation of the complex contours of the lower helical rim and ear lobule. Histopathological analysis confirmed a completely excised squamous cell carcinoma. At a 4-month follow-up, an excellent cosmetic outcome was observed.

### Chin

A 93-year-old woman presented with a 40 × 30 mm tumor located on the chin (**Figure 2**). Following excision, the surgical defect was reconstructed using a bilobed flap designed according to the modifications described by Zitelli.<sup>5</sup> By transposing skin from the upper neck and submental region, the defect was successfully repaired using tissue with excellent textural and color match, and donor site scars were concealed in less visible areas. Histopathological analysis revealed a well-differentiated squamous cell carcinoma that was completely excised. At a 7-month follow-up, an excellent functional and cosmetic result was achieved, with no impact on the oral cavity and preservation of the natural convexity of the chin.

### Temporal Region

A 77-year-old woman presented with an irregular and asymmetric pigmented lesion measuring 50 × 40 mm in the temporal region extending to the upper eyelid (**Figure 3**). The lesion was excised with wide margins, and a bilobed flap was subsequently planned. By transposing skin from the malar and mandibular areas, the surgical defect was successfully reconstructed using tissue with excellent textural and color match. Histopathological analysis revealed a lentigo maligna melanoma, completely excised with tumor-free margins. At a 2-month follow-up, the patient demonstrated a good functional and cosmetic outcome.

### Hand

A 76-year-old woman presented with a 25 × 20 mm hyperkeratotic nodule located between the fourth and fifth interdigital spaces, extending to the distal phalanx of the fourth finger of the left hand (**Figure 4**). After excision, a bilobed flap was designed and used to reconstruct the resulting surgical defect. Histopathological analysis confirmed a well-differentiated squamous cell carcinoma with complete excision and clear margins. At a 4-month

follow-up, the patient showed a good postoperative outcome, with no movement or functional limitations and a highly satisfactory cosmetic result.

### Foot

A 51-year-old man presented with an ulcer on the distal phalanx of the fifth toe of the right foot, measuring 10 × 5 mm (**Figure 5**). The lesion was excised, and a bilobed flap was planned. By transposing skin from the base of the fifth toe, the surgical defect was effectively reconstructed. Histopathological analysis revealed a squamous cell carcinoma with clear, tumor-free margins. At a 7-month follow-up, the patient demonstrated a good functional and cosmetic outcome.

## Case Discussion

Challenging postsurgical defects are frequently encountered in dermatologic surgery. Healing by secondary intention, primary closure, and skin grafting are options for addressing larger or more complex surgical defects.<sup>1,8</sup> Successful reconstruction relies on maintaining symmetry, topography, contour, volume, and functionality.<sup>8</sup>

The bilobed flap is a double transposition flap described by Esser and modified by Zitelli in 1989.<sup>1-6</sup> Although its use is well established in nasal reconstruction, it is less frequently used in extranasal repairs.<sup>1,8</sup> Advantages of the extranasal bilobed flap include free margin protection, access to larger reservoirs of distant tissue, and the availability of skin with similar texture, color, and thickness to adjacent areas.<sup>1,8</sup> Additionally, its effectiveness is notable when used over dynamic defects, such as over the joints of the hand and foot.<sup>8,10,11</sup>

Healing by secondary intention, primary closure, and skin grafting are options for reconstruction of surgical defects of the ear and offer reasonable functional outcomes; however, they may be less suitable for larger or more complex defects with anticipated anatomic distortion.<sup>1</sup> Other authors have demonstrated excellent results with the bilobed flap in the reconstruction of full-thickness skin defects involving the helical rim and posterior ear through skin transposition from the postauricular surface.<sup>12</sup> We likewise demonstrate the applicability of the bilobed flap in helix and earlobe defects, with excellent cosmetic results (**Figure 1**).

Reconstruction of large chin defects can be challenging. In this anatomical area, it is crucial to maintain oral competence, as any vertical movement of the vermilion edge may result in eclabium.<sup>1</sup> In our experience, the bilobed flap, by transposing skin from the neck and submental region, can effectively repair these surgical defects using tissue with excellent texture and color match, while concealing donor site scars in less visible locations and maintaining the natural convexity of the chin (**Figure 2**).

Maintaining motricity and sensitivity of the hand and foot, while preventing surgery-related complications such as contractures and joint stiffness, are primary ob-

jectives of acral reconstruction.<sup>1,10</sup> Given the relative inelasticity of acral skin, skin grafting and second-intention healing are often used for these defects. However, scar contraction associated with second-intention healing may limit mobility and lead to functional impairment.<sup>1,10</sup> We describe 2 cases demonstrating the applicability of the bilobed flap in acral locations and its advantages in highly dynamic areas such as the fingers and toes (**Figure 4** and **Figure 5**). Other authors have reported excellent results in digital reconstruction using Zitelli's modified bilobed flap design.<sup>10,11</sup> When reconstructing acral defects with the bilobed flap, careful preoperative design is essential. The primary and secondary lobes must be appropriately sized, as any secondary tissue movement may result in distortion, functional limitation, or both.<sup>1</sup>

## Conclusion

Although primarily associated with nasal reconstruction, the bilobed flap is a highly versatile option that can be used to repair large or more complex defects in extranasal locations, yielding excellent aesthetic and functional outcomes.

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## Potential conflicts of interest

The authors declare no conflicts of interest.



**Figure 1.** Hyperkeratotic plaque on the helix and earlobe (20 × 10 mm). Following excision, a bilobed flap was designed and used to reconstruct the resulting defect. An excellent cosmetic outcome was achieved at the 4-month follow-up.



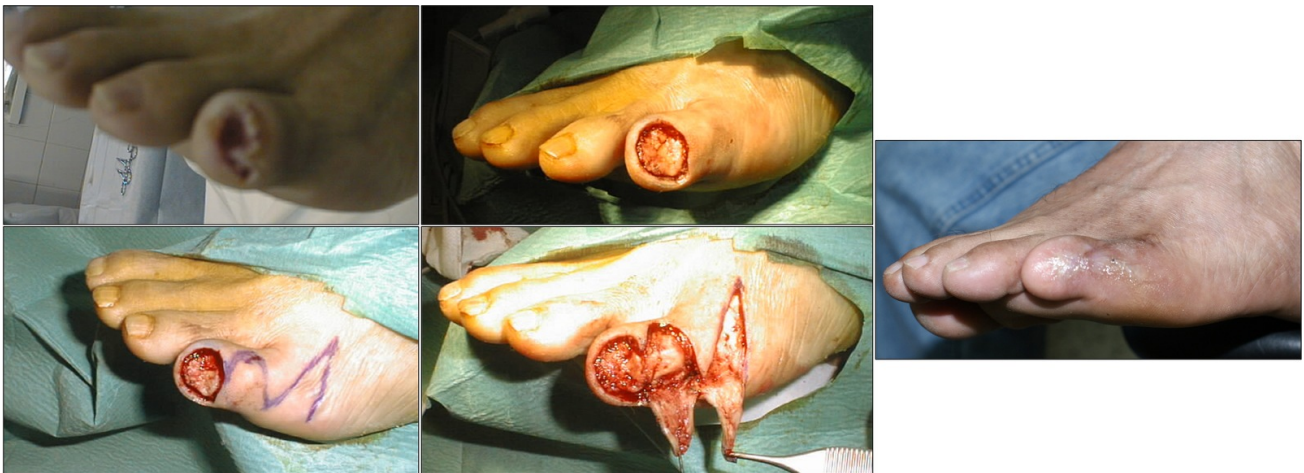
**Figure 2.** Tumor of the chin (40 × 30 mm). After excision, reconstruction was performed using a bilobed flap, according to the modifications proposed by Zitelli.<sup>5</sup> An excellent cosmetic outcome was achieved at the 7-month follow-up.



**Figure 3.** Irregular and asymmetric pigmented lesion in the temporal region and upper eyelid (50 × 40 mm). Following excision with wide margins, a bilobed flap was planned. The surgical defect was repaired by transposing skin from the malar and mandibular regions. An excellent cosmetic outcome was achieved at the 2-month follow-up.



**Figure 4.** Hyperkeratotic nodule between the fourth and fifth interdigital spaces and the distal phalanx of the fourth finger of the left hand (25 × 20 mm). Following excision, a bilobed flap was designed and used to reconstruct the resulting defect. An excellent cosmetic and functional outcome was achieved at the 2-month follow-up.



**Figure 5.** Ulcer on the distal phalanx of the fifth toe of the right foot (10 × 5 mm). Following excision, a bilobed flap was designed and used to reconstruct the resulting defect. An excellent cosmetic and functional outcome was achieved at the 7-month follow-up.

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