

Repair of Two Adjacent Surgical Defects with a Single Rotation Flap After Mohs Micrographic Surgery: A Case Report

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Dear Editor,

Basal cell carcinoma (BCC) is the most common type of skin cancer.¹ Mohs micrographic surgery (MMS) is considered the gold standard for the treatment of BCCs with specific features.¹ MMS provides complete margin control while preserving as much healthy tissue as possible, making it particularly useful in cosmetically and functionally critical areas such as the face.² Meticulous perioperative planning is essential in the reconstruction of post-MMS defects to optimize outcomes. Thus, several factors must be considered, including defect size, location, and depth; proximity to anatomical boundaries; laxity of surrounding tissues; and the patient's comorbidities.³ When more than one repair option is available, the simplest technique should be preferred, where cosmesis and functionality are adequately preserved.

A 62-year-old man presented with two adjacent lesions in the left postauricular region (Figure 1a). Histopathology of superior and inferiorly-located lesions was consistent with basosquamous BCC and nodular BCC, respectively. Both tumors were excised using MMS.

The clinical borders of both tumors were delineated using dermoscopy, and 2-mm safety margins were marked. Orientation was performed using the clock-face method, with reference incisions placed at the 12, 3, 6, and 9 o'clock positions (Figure 1b). Excision was performed along

the safety margins at a 45° angle, and specimens were transferred to the MMS laboratory without loss of orientation (Figure 1c). After the first MMS stage, both lateral and deep margins of the inferiorly located BCC were negative. Lateral margins of the superiorly located BCC were reported to be negative, while the tumor was observed in the deep margin (Figure 2a-e). After the second stage of MMS, during which the deep margins of the superiorly located tumor were excised down to the suprapariosteal plane, those margins were reported as negative. At completion, two adjacent defects, measuring 21 × 29 mm and 17 × 20 mm, were present (Figure 3b). These two defects were reconstructed with a single rotation flap (Figure 3b and c). At the ninth month of follow-up, a cosmetically acceptable scar was observed (Figure 4). No early- or late-term complications have been observed in our patient.

Small-to-moderate-sized post-MMS defects may be managed by secondary intention healing, primary closure, skin grafting, or local flaps. In the present case, primary closure was not feasible due to significant tension during edge approximation (Figure 3a). Secondary intention healing could be considered because the periosteum at the defect base was preserved and the anatomical location was relatively concealed. However, the patient's comorbidities were expected to adversely affect wound healing; therefore, this option was not pursued.

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Although grafting was technically possible, reconstruction with a local flap was preferred, given its superiority in tissue match in color, thickness, and adnexal characteristics compared with graft tissue, which is often harvested from distant sites and may yield inferior aesthetic results.

When a defect involves more than half of an aesthetic unit, excision of the remaining portion of the unit and reconstruction of the entire unit using a single technique have been recommended. This approach helps to conceal scars along natural borders, achieve better contour matching, and minimize patch-like deformities.⁴ While the postauricular region is not a classic facial cosmetic unit, repairing two closely adjacent defects with different methods could have

required additional incisions and thereby increased the scar burden. This approach would also create undesirable tension at the wound closure site. Thus, combining two adjacent defects into a single larger defect and reconstructing it with a single approach was favored in our patient.

Linear advancement flaps would provide limited tissue mobility in contrast to transposition and rotation flaps; therefore, their range of movement was thought to be insufficient for adequate defect closure in our case.⁵ Similarly, the use of a V-Y advancement flap would be technically challenging due to the relative paucity of subcutaneous adipose tissue in this region.^{5,6} Previous studies have reported the reconstruction of retroauricular defects using transposition flaps, such as

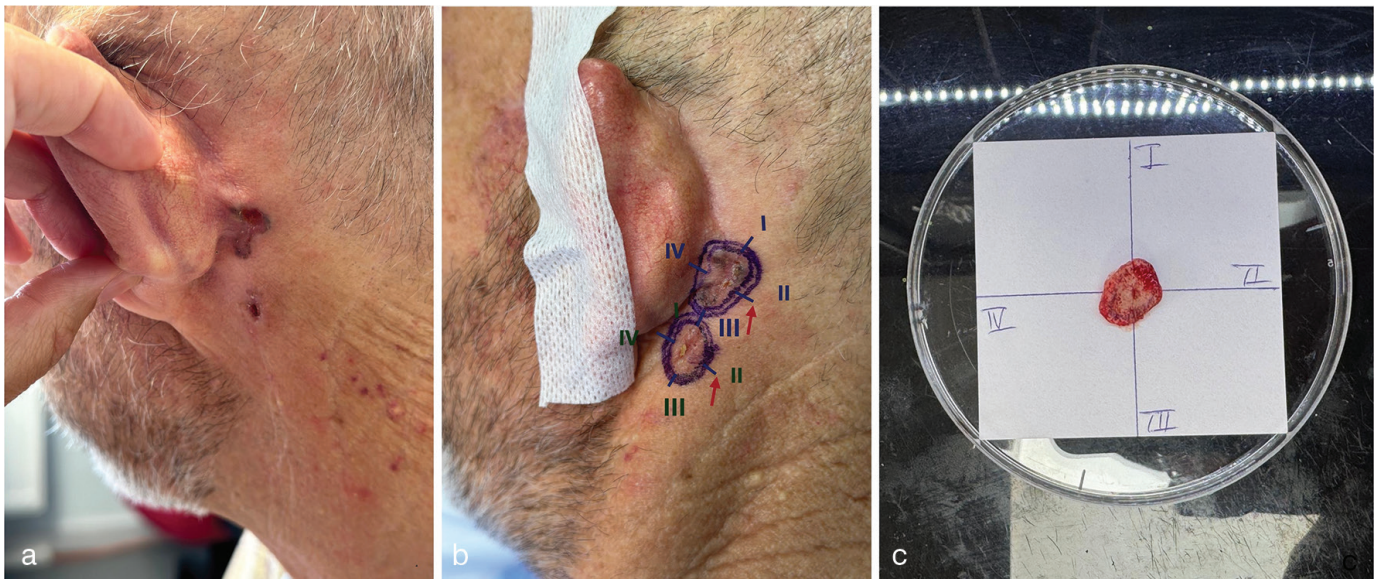


Figure 1. Excision of basal cell carcinoma (BCC) with Mohs micrographic surgery. (a) Two adjacent BCCs located in the postauricular region. (b) Clinical tumor borders and surgical margins, each with a width of 2 mm, are marked. Reference incisions are made at 12, 3, 6, and 9 o'clock for each tumor (red arrows). Excision is performed along the safety margins at 45° (c). The specimen is placed in a Petri dish lined with an orientation guide sheet. Thus, the orientation is preserved during transfer

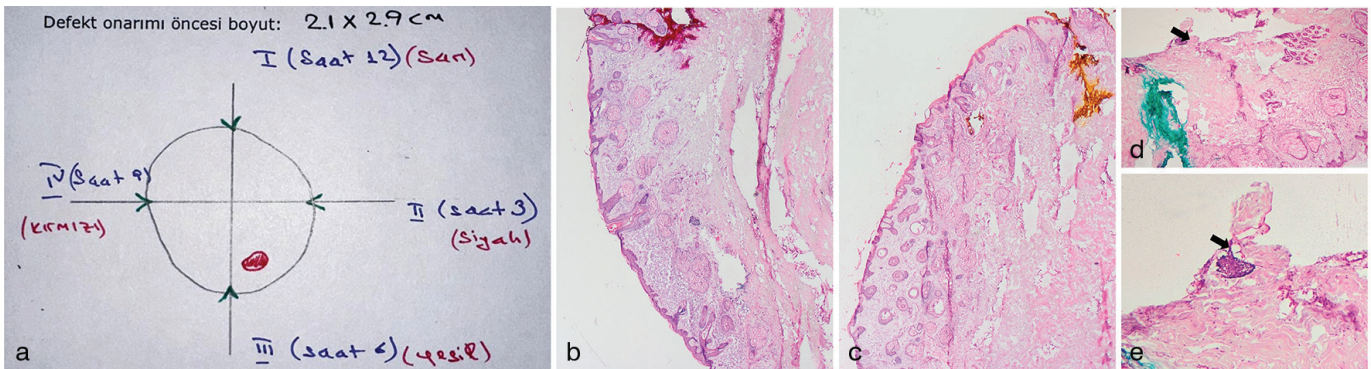


Figure 2. Mohs map and histopathologic examination findings of the superiorly located tumor. (a) Mohs map: as indicated on the Mohs map, the 12 o'clock nick is marked with yellow dye, the 3 o'clock nick with black dye, the 6 o'clock nick with green dye, and the 9 o'clock nick with red dye. The arrow points to the residual tumor, as determined by histopathologic examination. The tumor is continuous in the deep margin (b) 9 o'clock nick (red dye): the lateral and deep surgical margins are negative in the depicted area (c) 12 o'clock nick (yellow dye): the lateral and deep surgical margins are negative in the depicted area (d, e) 6 o'clock nick (green dye): the tumor is present at the deep surgical margin in the location indicated by the arrow. Note: Images corresponding to the 3 o'clock nick are not shown; both the lateral and deep margins in this area were tumor-free

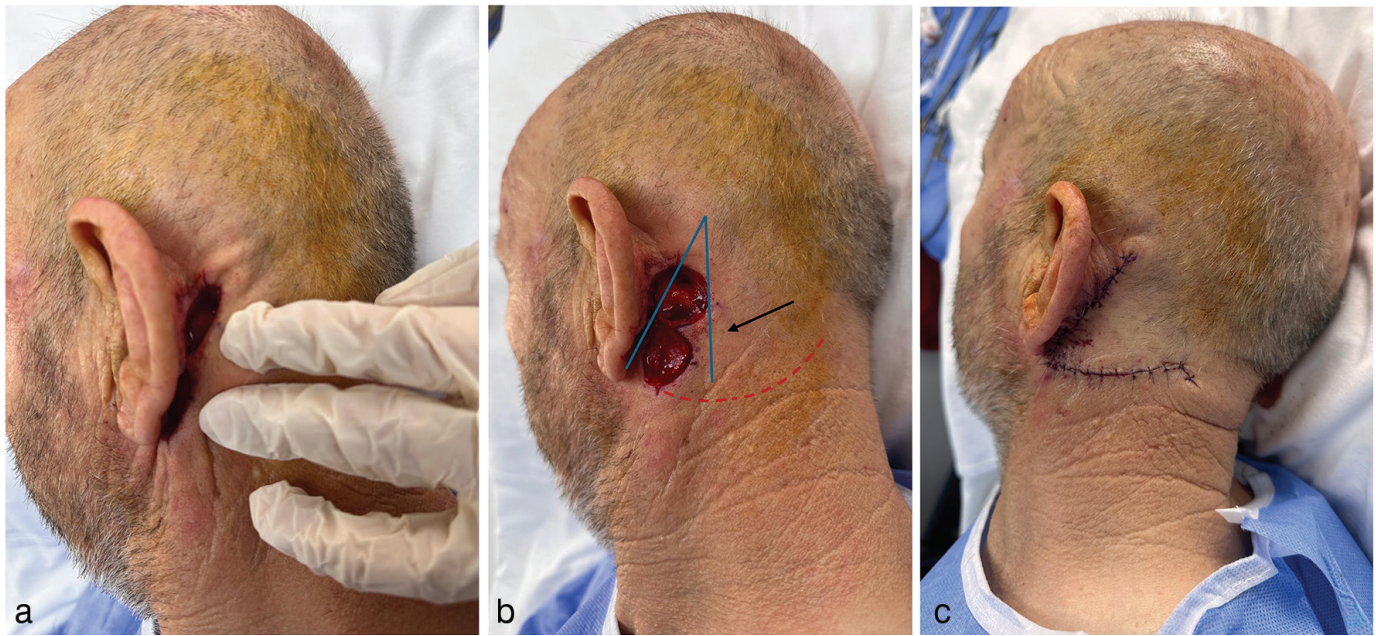


Figure 3. Reconstruction of the surgical defect. (a) Defects cannot be repaired by primary closure due to the excessive tension at the defect closure site (b) design of the rotational flap. The area delineated by the blue triangle will be excised. Note that the defects are located within the planned triangular excision site (c) immediate postoperative appearance after reconstruction with a rotation flap



Figure 4. Long-term follow-up outcomes. Cosmetically acceptable scar appearance on the 9th month of follow-up

preauricular transposition and bilobed flap.^{7,8} Reconstruction of the final combined defect with a transposition flap was theoretically feasible. Among transposition flaps, the bilobed flap would be preferable. However, it would require an excessively large flap, potentially extending into the cervical region. This approach would also require extensive undermining, thereby increasing the risk of complications. A rhomboid flap would require extension of excisions to the auricle and a significantly larger design to address both defects simultaneously.⁹

Given the proximity to anatomical boundaries (the auricle and hairline) and regional tissue laxity, a rotation flap was considered more advantageous than transposition or advancement flaps. Although reconstruction of postauricular defects using a rotation flap has been previously reported, those cases were single defects.¹⁰ During reconstruction planning, it was observed that the triangular area planned for excision could be positioned within one of the defect sites (Figure 3b). Thus, two adjacent defects could be and were repaired with a single rotational flap. A single-method reconstruction also reduced operative time and improved procedural efficiency.

Converting two adjacent post-MMS defects into a single defect and reconstructing the resulting defect with a single flap may be a practical and efficient approach in selected cases. This approach helps to avoid additional incisions, reduces tension on wound edges, and minimizes scar burden.

Footnotes

Informed Consent: Written informed consent was obtained from the patient.

Authorship Contributions

Surgical and Medical Practices: L.H.T., B.T., E.A.B., Z.K., Ö.G., S.Ö., Concept: L.H.T., B.T., Ö.G., S.Ö., Design: L.H.T., B.T., Ö.G., S.Ö., Data Collection or Processing: L.H.T., B.T., E.A.B., Z.K., Analysis or Interpretation: L.H.T., B.T., Ö.G., S.Ö., Literature Search: L.H.T., B.T., E.A.B., Writing: L.H.T., B.T.

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