

Melanoma Extirpation with Immediate Reconstruction: The Oncologic Safety and Cost Savings of Single Stage Treatment

Irena Karanetz, MD; Sharon Stanley, MD; Denis Knobel, MD; Benjamin D. Smith, BS; Mansoor Beg, MD; Armen K. Kasabian, MD; Neil Tanna, MD, MBA.

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INTRODUCTION: Wide surgical excision is a well-established treatment modality for cutaneous malignant melanoma and often results in large defects not amenable to primary closure.¹ The timing of reconstruction following melanoma extirpation remains controversial, with some centers advocating definitive reconstruction only when the results of permanent pathology are available.² Advantages of immediate reconstruction include single-stage surgery with potential healthcare cost savings and avoiding a period of disfigurement. The authors aim to evaluate oncologic safety and cost benefit of single stage neoplasm extirpation with immediate reconstruction.

MATERIALS AND METHODS: The authors reviewed all patients treated with biopsy proven melanoma followed by immediate reconstruction during a three-year period (January 2011 to December 2013). Patients with metastatic disease, incomplete medical records, or inadequate follow up were excluded. Patient demographic data, preoperative biopsies, operative details, and postoperative pathology reports were evaluated. Cost analysis was performed using hospital charges for single-stage surgery versus theoretical two-stage surgery.

RESULTS: During the study period, 534 consecutive patients were treated with wide excision and immediate reconstruction, including primary closure in 285 patients (55%), local tissue rearrangement in 155 patients (30%) and skin grafting in 78 patients (15%). The mean age of patient population was 67 years (range, 19 to 98) and median follow-up time was 1.2 years. Shave biopsy was the most common diagnostic modality resulting in tumor depth underestimation in 30 patients (6.0%). The majority of patients had invasive melanoma (62%), while the remaining had melanoma in situ. The most common tumor location was in the back (24%), followed by upper and lower extremity (21% versus 20%, respectively). In the invasive melanoma cohort, median tumor thickness was 1.02 mm. Nine patients (2.7%) had positive margins on permanent pathology followed by successful re-excision and no evidence of local recurrence. The only variables associated with positive margins were desmoplastic melanoma ($p=0.004$) and tumor location on the cheek ($p=0.0001$). The mean hospital charge for immediate reconstruction was \$22,528 compared to the theoretical mean charge of \$35,641 for delayed reconstruction leading to mean savings of 38.5% (SD 7.9%).

CONCLUSION: To our knowledge, this is the largest series up to date demonstrating that immediate reconstruction can be safely performed in melanoma patients with an acceptable rate of residual tumor requiring reoperation and significant healthcare cost savings.

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