

Purpose: Melanoma, the skin cancer with the lowest incidence, causes the majority of all skin cancer-related deaths. Early detection has led to the discovery of melanoma at less advanced stages, thus shifting the reconstructive paradigm from solely survivorship to the improvement of function and cosmesis while still maintaining an overall adequate outcome. Reconstructive approaches rely on two main factors: location of the lesion and size of the lesion. Due to the complexity of the hand, reconstructive options are quite heterogeneous. The purpose of this study is to explore the clinical data and reconstructive strategies of hand and digital cutaneous melanoma and subungual melanoma, review the current reconstructive options presented in the medical literature, and offer a reconstructive algorithm to surgically approach primary melanoma of the hand.

Methods: A retrospective chart review was conducted for all patients undergoing oncologic resection of primary melanoma of the hand at New York University Langone Medical Center (NYULMC) between April 2003 and October 2013. Variables collected included age, race, gender, type of melanoma, Breslow depth, stage, oncologic resection, reconstructive surgery, and outcomes.

Results: A total of 35 patients with primary melanoma of the hand comprised our study cohort. The mean age of presentation was 56 years with a total of 24 women and 11 men. The average Breslow depth of the cohort was 1.58mm. There were 13 cases of melanoma in situ (MIS). All MIS cases were treated with wide local excision, yet the subungual group needed more extensive reconstruction including paronychial advancement flaps and full-thickness skin grafts (FTSG). Twenty-two cases presented as malignant melanoma. The majority of the patients with cutaneous melanoma underwent wide local excision with primary closure or FTSG. In the subungual group, all patients underwent amputation at the most distal interphalangeal joint or wide local excision. The reconstruction consisted of local advancement flaps, FTSG, or primary closure.

Conclusion: Reconstructive options for primary melanoma of the hand are quite varied without strong guidelines as to which technique is superior. Location, size, and type of lesion (cutaneous or subungual) help shape which reconstructive strategies are optimal. With more conservative oncologic approaches and advanced reconstructive techniques, patients are able to maintain function with a satisfactory degree of cosmesis.