

6th World Congress on
Dentistry and Oral Health
July 09-10, 2026 | Frankfurt, Germany



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A Comparative Study of Lateral Arm Perforator Flap and Medial Sural Artery Perforator Flap in Repairing Small and Medium-sized Defects after Radical Resection of Head and Neck Squamous Cell Carcinoma

Background and Objectives

This study compared clinical outcomes of medial sural artery perforator (MSAP) and lateral arm perforator (LAP) flaps for soft tissue reconstruction after head and neck squamous cell carcinoma resection.

Methods

A retrospective cohort study enrolled 99 patients (68 MSAP, 31 LAP) undergoing free flap reconstruction at a head and neck cancer center from February 2019 to December 2025. Patient demographics, flap characteristics, and postoperative outcomes were recorded and compared, with a 6-month minimum follow-up. Subjective donor-site morbidity and functional satisfaction were assessed via a standardized questionnaire.

Results

Flap success rates were 95.6% (MSAP) and 100% (LAP). No significant intergroup differences existed in age, sex, flap size, adjuvant treatment, or oral function recovery. Both flaps caused minimal donor-site morbidity, with MSAP showing higher donor-site satisfaction. MSAP had longer vascular pedicles and larger anastomotic vessel diameters; its total operative time was shorter owing to the two-team approach feasibility.

Conclusion

MSAP and LAP flaps both yield minimal donor-site morbidity and are effective for small-to-medium head and neck defects. MSAP is more amenable to two-team surgery, shortening operation time and demonstrating greater clinical advantage.

Keywords: Medial sural artery perforator flap; Lateral arm perforator flap; Head and neck reconstruction; Squamous cell carcinoma; Donor-site morbidity

Biography

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