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ABSTRACT SUBMISSION TITLE: *A4 - Perioperative blood pressure kinetics and hematoma rates in head and neck free flap reconstruction*

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Abstract Text:

PURPOSE:

Postoperative neck hematoma is a common yet unfavorable complication following head and neck free flap reconstruction as it may necessitate returning to the operating room and lead to wound healing complications. It is theorized that uncontrolled postoperative hypertension may contribute to the development of a hematoma. Therefore, we reviewed our patients to analyze the association between perioperative blood pressures and the development of postoperative neck hematoma as well as long-term outcomes.

METHODS:

A retrospective chart review was conducted for all patients who underwent head and neck free flap reconstruction at our institution between 2020 and 2023. Data collected included demographics, comorbidities, flap type, presurgical testing (PST) blood pressure, intraoperative blood pressures, postoperative blood pressures at different time points, and postoperative complications.

RESULTS:

A total of 317 patients were included in our analysis, comprising 170 males (54%) and 147 females (46%). The mean age was 64 years, mean BMI was 26.9, and mean ASA was 2.8. A total of 329 free flaps were performed. Of the 28 patients who developed a neck hematoma, one developed at the end of the case, 14 developed within the first 24 hours, and 15 developed on POD1-7. Hospital stay was significantly longer for patients who developed a neck hematoma (19 vs 14 days, $P = 0.02$).

Hematoma was significantly associated with higher preoperative pulse pressures (60 vs 53, $P = 0.02$). Peak systolic BP within the first 24 hours postoperatively was significantly higher in patients who developed a hematoma (163 vs 154, $P = 0.02$). In addition, the hematoma group had significantly higher peak subacute (POD1-7) systolic (165 vs. 157, $P = 0.02$), diastolic (103 vs. 92, $P < 0.001$), and MAP (118 vs. 106, $P < 0.001$). Patients who developed a hematoma had higher rates of fistula formation and flap failure (14% vs 4%, $P = 0.05$; 11% vs 2%, $P = 0.05$, respectively) and longer hospital stay (19 vs 14 days, $P = 0.03$).

CONCLUSIONS:

While anastomosis quality and hemostasis are likely the primary contributors to hematoma formation, our findings suggest that postoperative blood pressure control is important in reducing the risk of hematoma following head and neck free flap reconstruction. This study underscores the need for strict blood pressure management protocols, specifically MAP goals < 118 , in the immediate and subacute postoperative period.