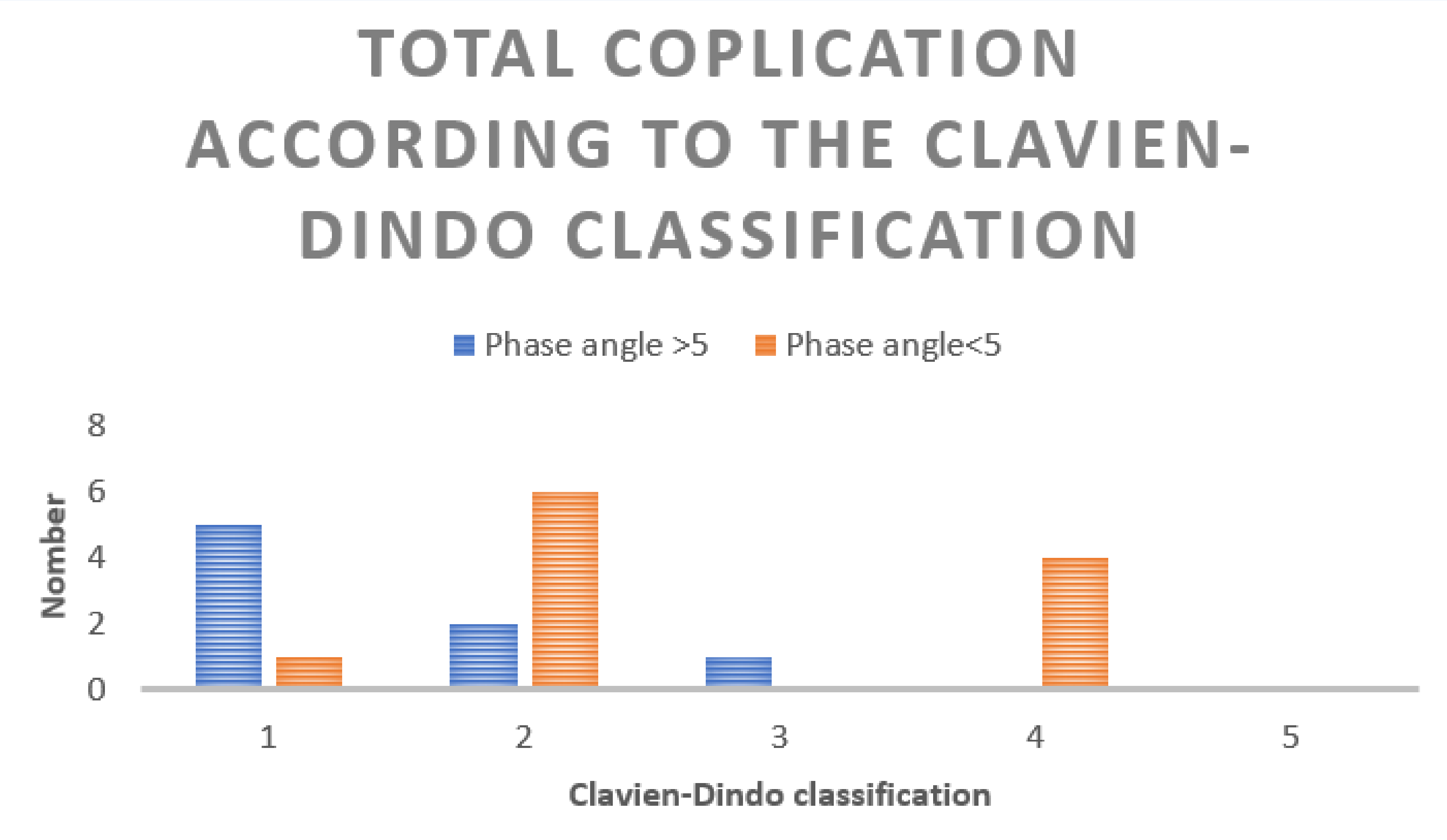


Bioelectrical impedance analysis in patients undergoing major head and neck surgery: a prospective observational pilot study

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Background and objective: Head and neck patients are prone to malnutrition. Perioperative fluids administration in this patient's group may influence nutritional status. We aim to investi-gate the perioperative changes in patients undergoing major head and neck surgery and to ex-amine the impact of perioperative fluid administration on body composition and metabolic changes using bioelectrical impedance. Furthermore, we sought to correlate these metabolic changes with post-operative complication rate. **Methods:** In this prospective observational pilot study, bioelectrical impedance analysis (BIA) was performed pre-operatively and at post-operative days (POD) 2 and 10 on patients who underwent major head and neck surgeries. **Results:** BIA was completed in 34/37 patients; mean total intraoperative and post-anesthesia fluid administration was 3,682±1910 mL and 1,802±1466 mL, respectively. Total perioperative fluid administration was associated with post-operative high extra-cellular water percentages (P=0.038) and low phase angle score (P <0.005) which indicates low nutritional status. Patients with phase angle below the 5th percentile at POD 2 had higher local complication rates (P=0.035) and longer hospital length of stay (LOS) (P=0.029). Multivariate analysis failed to demonstrate that high-volume fluid administration and phase angle are independent factors for post-operative complications. **Conclusion:** High-volume perioperative fluids administration impacts postopera-tive nutritional status with fluid shift towards the extra-cellular space and is associated with factors that increase the risk of post-operative complications and longer LOS. An adjusted, low-volume perioperative fluid regimen should be considered in patients with co-morbidities in order to minimize postoperative morbidity.



Multivariate logistic regression analysis of total complications					
Parameter	Assessment coeffi- cient	SE	Wald	P value	OR (95% CI)
Age	-0.085	0.064	1.749	0.186	0.919 (0.811-1.042)
Sex	-0.170	1.243	0.019	0.891	0.844 (0.074-9.646)
Smoking status	0.021	1.427	0.703	0.402	0.204 (0.008-6.988)
Diabetes	2.667	1.323	4.067	0.044	14.403 (1.078-192.424)
Free flap reconstruction	-0.757	1.353	0.313	0.576	0.469 (0.033-6.653)
Total perioperative fluids	-0.685	0.337	4.127	0.042	0.504 (0.260-0.976)
POD2 phase angle	0.050	0.446	0.013	0.910	1.052 (0.439-0.2521)