

Functional Long-term Outcome of Eight Face Transplant Patients - a Single Center Study

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Background

- Facial transplantation allows for reconstruction of the most complex **facial defects**.
- The **largest cohort of ten face transplantation** procedures was successfully performed by our group.
- **long-term outcomes** are presented here.

Methods

- 1 Nine face transplant recipients underwent ten face transplant procedures 2009-2020
- 2 We assessed postoperative functional outcome (speech analysis, motor function)
- 3 We analyzed outcome in terms of malignancies, kidney function, chronic rejection

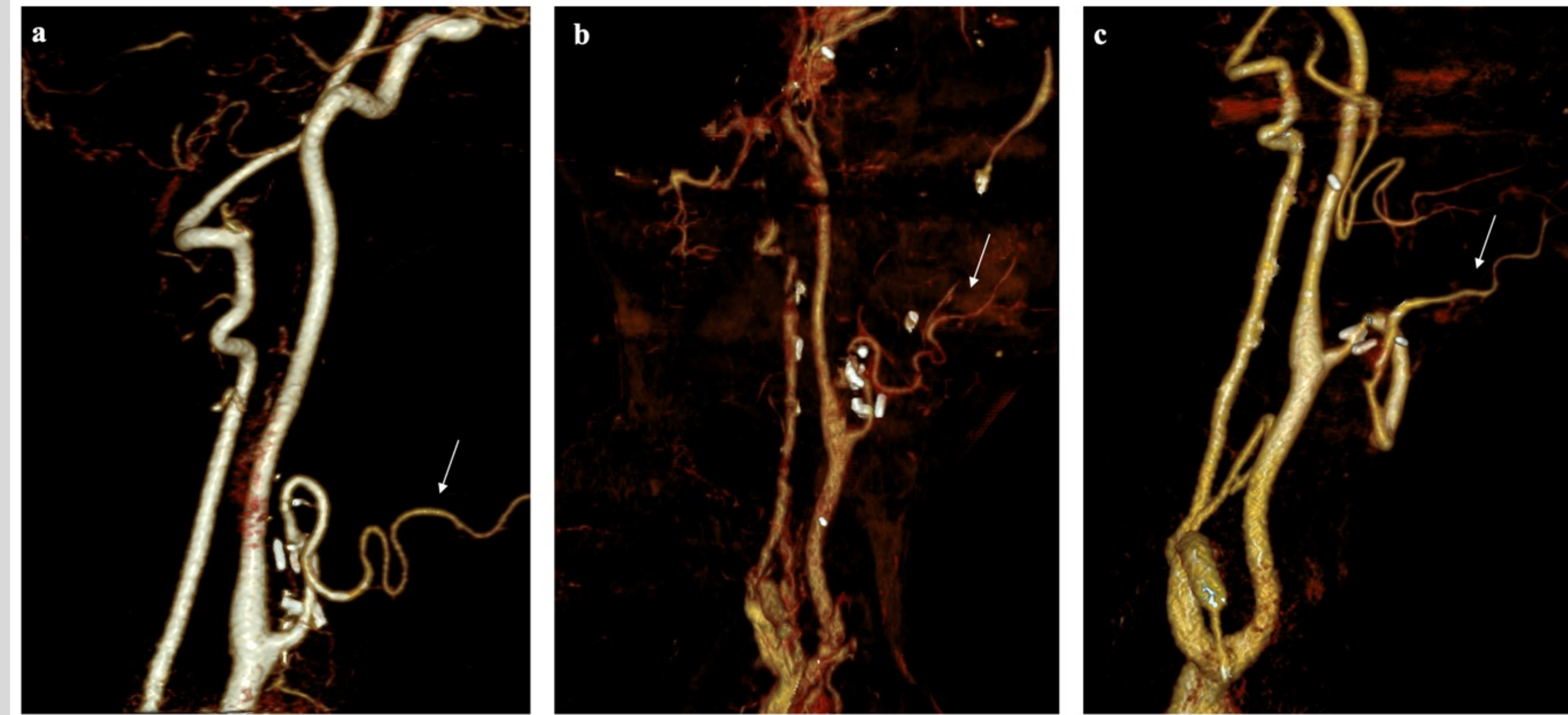


Figure 1. 3D-reconstructions performed for patient 5: (a) physiological graft perfusion posttransplant in 2015 (31 POM) (b) 84 months after first facial transplant, chronic rejection led to graft loss showing increased anastomotic caliber relative to previous studies and (c) 2.5 years after second facial transplant. Arrow marks facial artery (allograft).

Figure 4. Quantitative Outcome Measures A shows number and type of infection. B presents number of rejection episodes according to Banff classification 2007 every year of follow up for the whole cohort and total number.

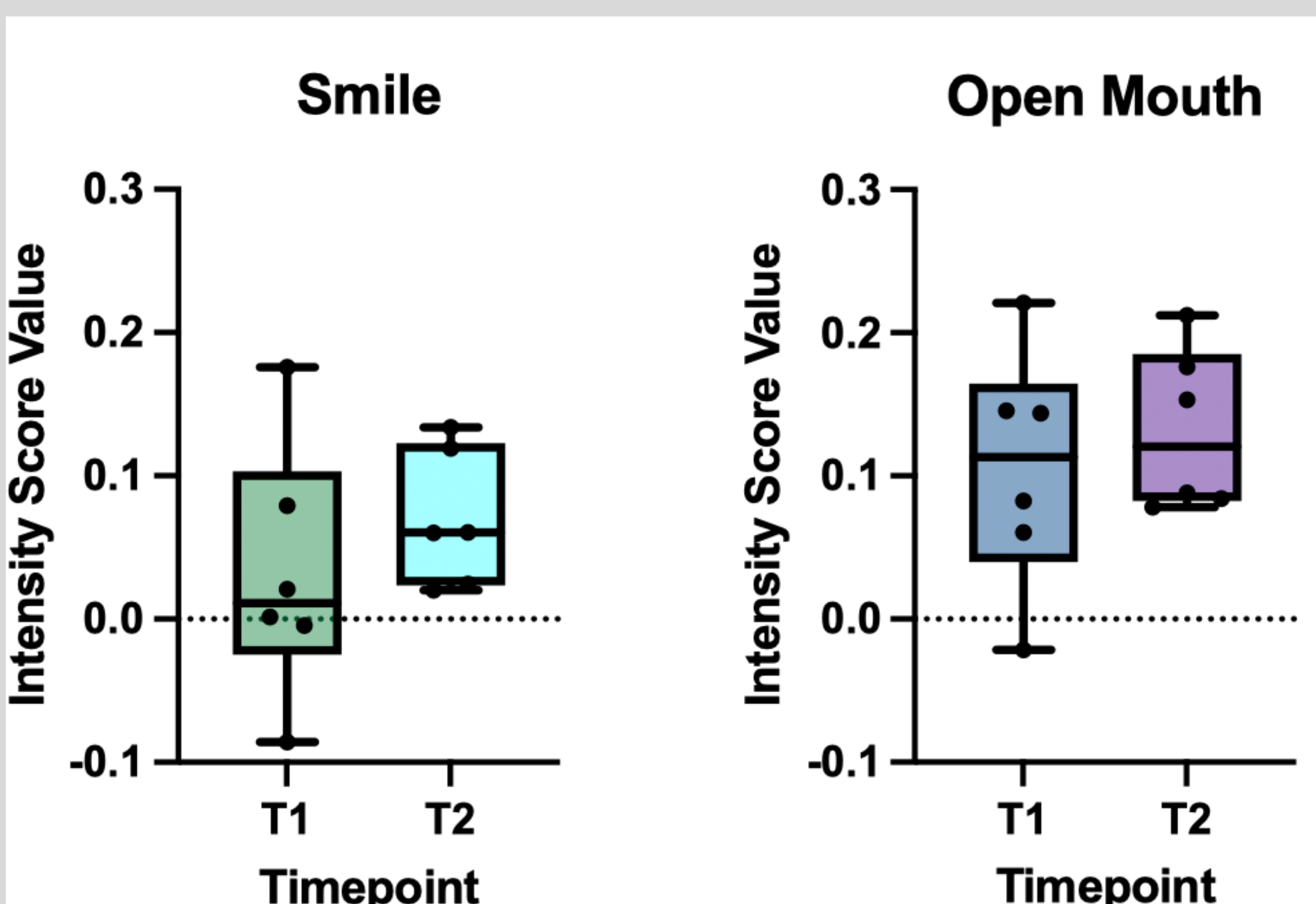
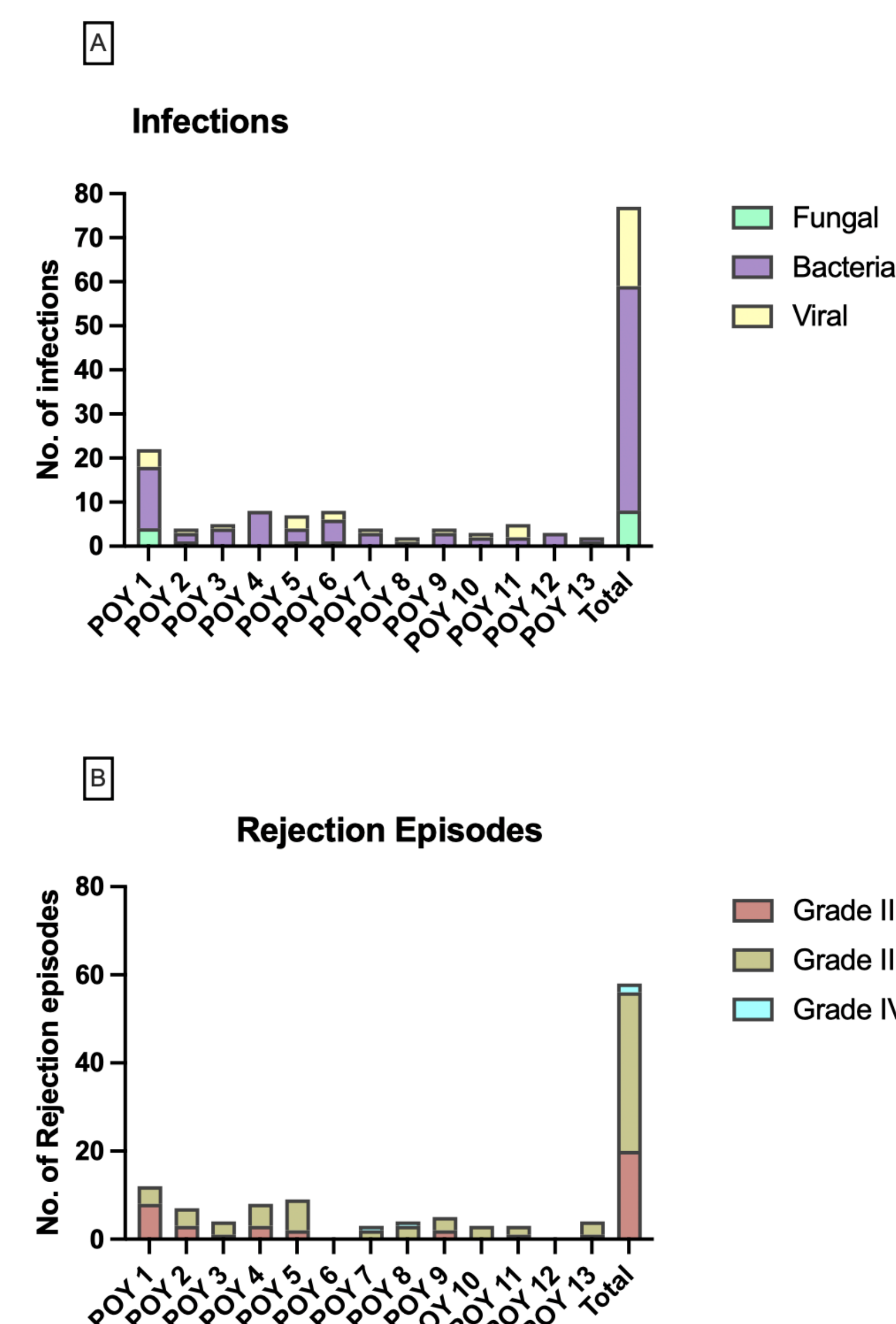


Figure 2. Analysis of facial expressions smile (A) and open mouth (B) improves over time when comparing time point T1 (mean POY 2) and T2 (mean POY 8).

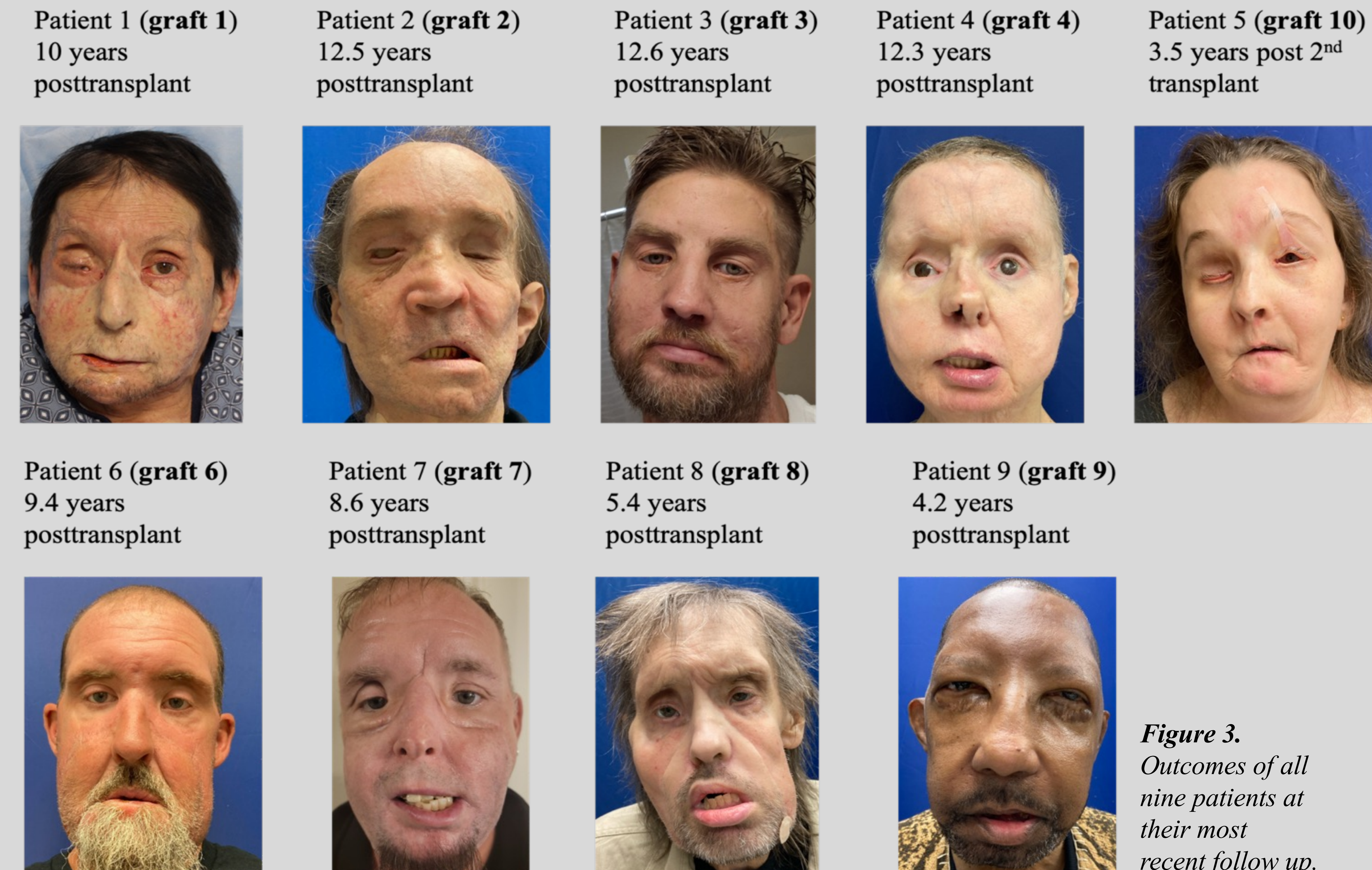


Figure 3. Outcomes of all nine patients at their most recent follow up.

Conclusion

- The long-term outcomes **reveal promising results** in terms of patients' health and graft survival, as well as functional recovery of the allograft.
- Metabolic / malignant / infectious complications and graft rejection episodes occurred and were in general manageable.
- **Seven out of nine patents were alive** at their most recent follow up (range 54 – 154 months)

Results

- The **median follow up was 120 months** (range 54 – 154 months).
- One patient (12.5%) was successfully re-transplanted due to allograft loss secondary to chronic rejection at POY 7, and two patients (25%) passed away (liver cell carcinoma at POY 10; multi organ failure at POY 6).
- **Three patients (37.5%) were diagnosed with malignancies** (squamous cell cancer in situ n=2, liver cell carcinoma n=1 due to preexisting hepatitis infection (treatment failed))
- **One patient (12.5%) developed chronic renal insufficiency secondary to accidental tacrolimus overdose.**
- **New onset metabolic disorders were diagnosed in seven patients (77.8%)** (hypertension n= 5, diabetes mellitus n=1, hyperlipidemia n=1)
- Four grafts (44.5%) developed signs of clinical and histopathological chronic rejection. **No signs of vasculopathy** were revealed utilizing computer tomography angiography scans.
- **Three patients (37.5%) received belatacept in addition to tacrolimus** due to preexisting/developed impaired kidney function while the remaining patients were treated with individual maintenance therapy regimen.
- **Functional outcomes improved** across cohort, with intensity scores increasing from 0.03 to 0.06 for “smiling” and from 0.10 to 0.13 for “opening the mouth” utilizing facial expression software analysis.