

Individualized intraoperative summary videos created by the attending surgeon improve quality of care in microsurgical limb reconstruction

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BACKGROUND

- **Rising Relevance of Microsurgical Flaps in Limb Reconstruction:**
 - Managing complex extremity defects of various etiologies, offering limb salvage, functional restoration, and aesthetic benefits.
 - Valuable alternative to other treatment options, such as amputation, despite the presence of certain risk factors.
 - 5-year survival rate is significantly higher in patients who received flaps compared to the amputated patients.
- **High Stakes in Postoperative Monitoring:**
 - Vascular compromise remains a critical threat to flap viability, necessitating close, standardized monitoring.
 - Effective interdisciplinary communication and patient involvement are crucial for optimal outcomes.

METHODS

- **Design:** Prospective randomized unblinded controlled study at BIDMC (May 2022 - Jan 2025)
 - Adult patients (≥18 years) who underwent upper or lower extremity reconstruction using a free or pedicled flap requiring inpatient postop monitoring.
- **Participants:** 40 patients, either randomized to control (n=20, no video) or intervention (n=20, video)
- **Intervention:** brief individualized video (<3 min)
 - Recorded postoperatively by the surgeon, highlighting indications for surgery and important aspects of postop care; available to the care team via secure iPads, with optional patient viewing.
- **Data Collection:** 12-item quality of care questionnaire utilizing a Likert scale was administered to providers and patients before discharge.
 - Assessing communication clarity, care coordination, perceived stress and satisfaction.

LIMB RECONSTRUCTION



Table 1. Patient Demographic and Clinical Characteristics by Group

Characteristic	Video group (N=20)	No video group (N=20)
	Frequency (%)	Frequency (%)
Age (years)*	66.5 (55.8 - 70.0)	48.5 (27.8 - 61.8)
Sex		
Female	10 (71.4)	4 (28.6)
Male	10 (38.5)	16 (61.5) fi
Race		
Asian	0 (0.0)	1 (100.0)
Black	0 (0.0)	3 (100.0)
Hispanic	0 (0.0)	1 (100.0)
White	19 (65.5)	10 (34.5)
Missing	1 (16.7)	5 (83.3)
BMI†	25.5 (22.0 - 29.5)	28.6 (25.6 - 34.7)
Underweight	2 (66.7)	1 (33.3)
Normal Weight	6 (66.7)	3 (33.3)
Overweight	7 (50.0)	7 (50.0)
Obese	5 (35.7)	9 (64.3)
Diabetes		
No	10 (43.5)	13 (56.5)
Yes	10 (58.8)	7 (41.2)
Smoking Status		
Nonsmoker	7 (43.8)	9 (56.2)
Smoker	13 (54.2)	11 (45.8)
Charlson Comorbidity Index*	4.5 (3.0 - 7.2)	1.5 (0.0 - 3.0)
Length of surgery (hours)*	3.6 (2.8 - 4.9)	3.8 (2.5 - 4.5)
Length of stay (days)*	14.5 (7.8 - 20.5)	9.5 (8.0 - 16.0)
Take back to the OR		
No	18 (51.4)	17 (48.6)
Yes	2 (40.0)	3 (60.0)

*Data are presented as Median (Q1 – Q3)

RESULTS

- **Quality of Care Scores:**
 - Both patients and providers in the video group reported significantly higher ratings (Patients: 4.7 vs. 3.7; Providers: 4.1 vs. 3.6; $p < 0.001$).
- **Correlation:**
 - Positive correlation between provider confidence and patient satisfaction ($p = 0.62$).
 - No significant difference based on whether patients watched their own video and those who did not in the video group ($p = 0.337$).
 - Watched Video (n=9): 4.8 (Q1-Q3: 4.7 - 5.0)
 - Did not watch video (n=11): 4.7 (Q1-Q3: 4.4 - 4.8)

CONCLUSION

- **Improved Care Quality:** Video-based sign-out enhanced patient and provider-rated communication and care.
- **Higher Provider Confidence:** Strong correlation between provider confidence and patient satisfaction.
- **Standardization Benefits:** Improved handoffs, reduced errors, and better support for junior staff.
- **Patient Impact:** Greater clarity, lower stress, and higher satisfaction with postoperative care.
- **Food for thought:**
 - Could standardized video sign-outs become a cost-effective, scalable adjunct to improve surgical outcomes across healthcare systems?
 - Can personalized video tools reduce provider burnout and improve long-term team performance in high-stakes surgical care?

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Figure 1. Patient vs Provider Rated Quality of Healthcare

