



奇美醫療
財團法人

奇美醫院

Chi Mei Medical Center

Nighttime surgery with acute sleep deprivation – Circadian Disruption - is a risk factor of free flap failure

Chao-Wu Yen MD, Chun-Chia Chen MD, Kuo-Feng Huang MD,
Haw-Yen Chiu MD, PhD, Tzong-Bor Sun MD, PhD*

Division of Plastic Surgery, Department of Surgery,
Chi Mei Medical Center, Tainan, Taiwan





Purpose

- **Free flap failure** has a catastrophic effect.
- Failure rate: 1-9%
- **Risk factors** include **host** and **surgical** perspectives.
- If exhaustion of surgeons during nighttime surgery is a risk factor?

Patients and methods



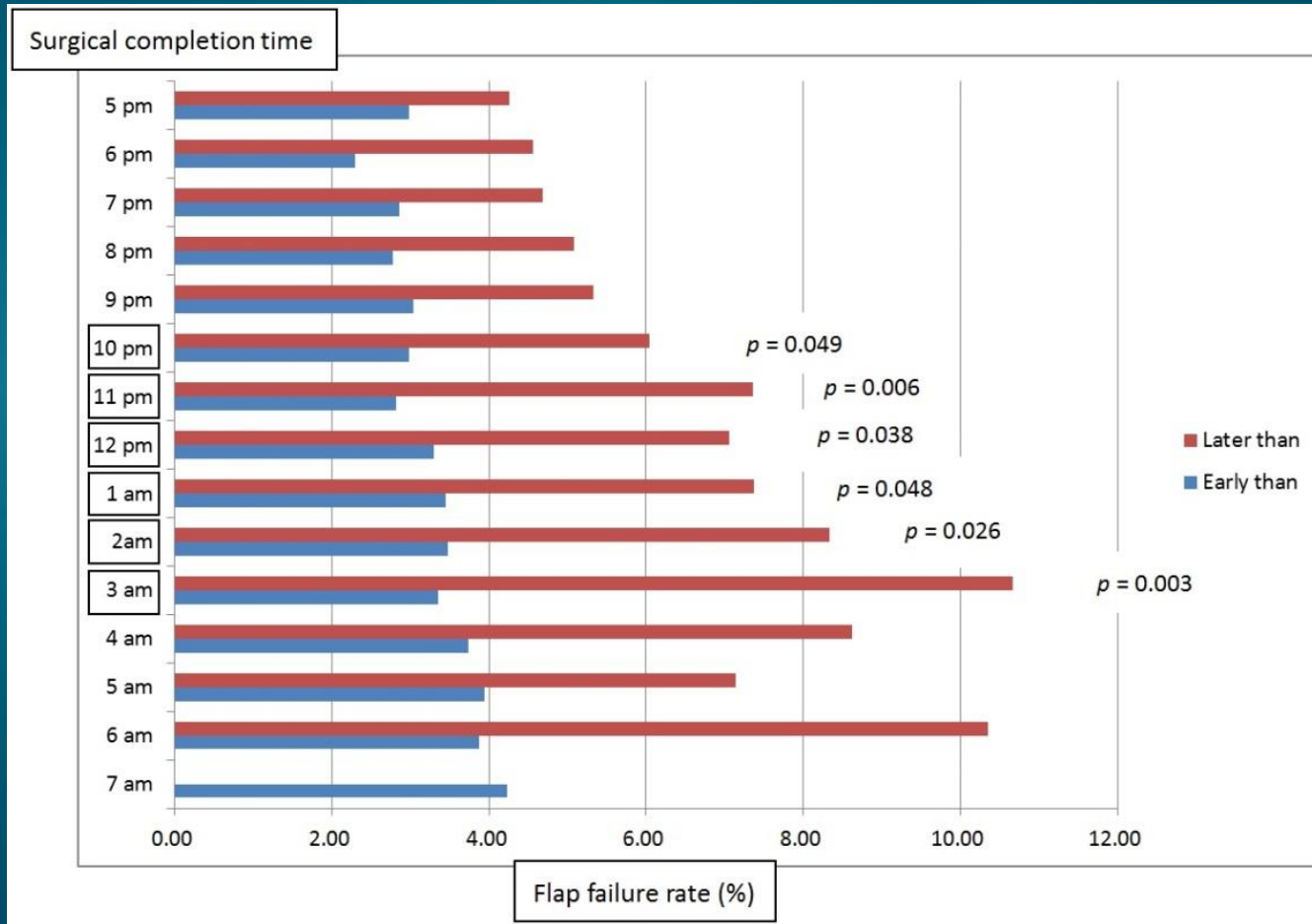
- All head and neck free tissue transfer between January 2005 and November 2015 in our institution
- Exclusion criteria: Missing data, reconstruction region beyond head and neck
- End points: Vascular complication needed salvage or subsequent flap failure
- Interesting parameter: Surgical completion time



Results

- 701 free flaps
- Early vascular complication rate: 7.1%
- Flap failure rate: 4.1% following vascular salvage procedures

Results



- Flap failure rate increases steadily since midnight.



Results

Flap failure	Adjusted Odds Ratio	p-value
Surgical completion time after 10 PM	2.3	0.034
Previous neck dissection	3.3	0.025
Tumor stage		
Benign	2.7	0.158
Stage III, IV	1.0	0.937
Recurrence	1.1	0.831



Conclusions

- Previous neck dissection deteriorates the free flap outcome.

And

- Microsurgeons working in the late nighttime (10 pm) yield a poorer outcomes.
- Sleep deprivation or circadian desynchronization of surgeons may play a major role.