In 1981, Nakayama performed the first documented flap procedure. Honda et al. subsequently used venous flaps to provide soft tissue coverage and flow through revascularization to amputated fingers. The purpose of this study is to perform a comprehensive review of outcomes associated with the use of venous flaps in hand trauma.

Methods

KEYWORDS:
Venous flap, trauma, injury, amputation, avulsion, finger, hand, thumb, replantation, revascularization

INCLUSION CRITERIA:
1. Venous flap
2. Hand trauma
3. Primary Data

EXCLUSION CRITERIA:
1. Duplicate data
2. Review article

Results

557 flaps were identified with 77.1% male, mean age of 36.7 years, right hand injured in 52% and an average of 2.34 anastomosis completed. Complete healing was defined as no loss of flap tissue. Partial necrosis was defined as loss of any amount of tissue except complete loss.

Conclusions

• All venous flaps demonstrate 80.4% complete healing and only 5.2% rate of total loss.
• 95.1% of flaps with arterial inflow at least partially survived.
• Increasing patient age was associated with higher rates of partial necrosis (p= 0.018).
• The saphenous donor site yielded the greatest rate of complete healing (90.9%).
• Medium sized flaps have the highest rate of complete healing (89.5%) and small flaps were more likely to have total loss (p=0.015)(Table 2).
• Dual veno-venous anastomosis are associated the highest rate of total flap loss (10.8%).
• Venous flaps can be used in soft tissue reconstruction of the hand after traumatic injuries with medium size and A-X-V flaps showing the greatest reliability.

References