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Thermometric Monitoring plays little role in Postoperative care of Artery-only Replantation

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Purpose

- Very distal amputated level left no vein for anastomosis → Artery-only replantation
- If thermometric monitoring still plays a role in these situation?



Patients and methods



- All upper extremities replantation between January 2011 and April 2016 in our institution
- Exclusion criteria: Incomplete amputation, Tamai level V amputation
- End points: Vascular complication needed salvage or subsequent replantation failure
- “Probit model” was set at 90% possibility



Results

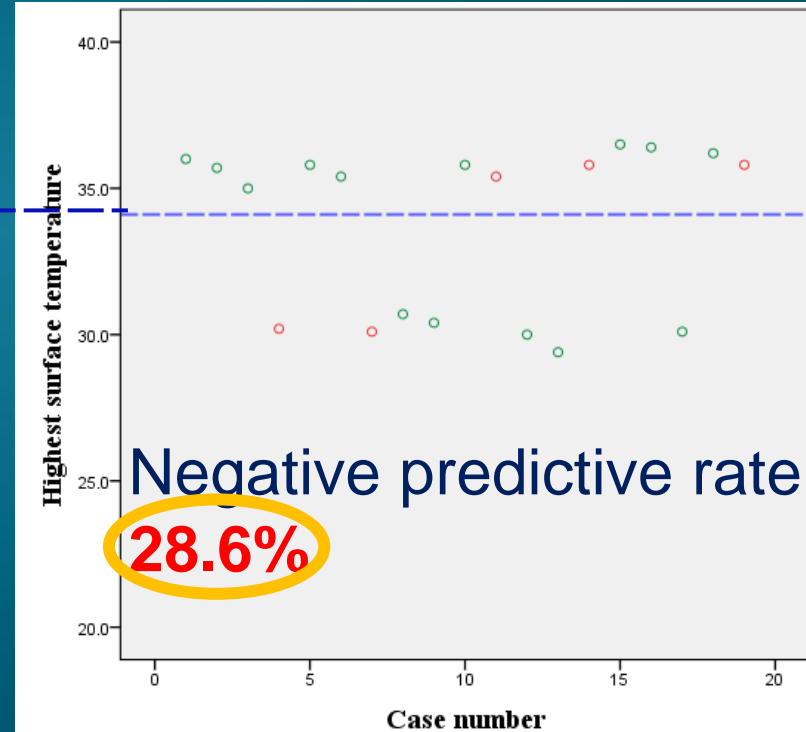
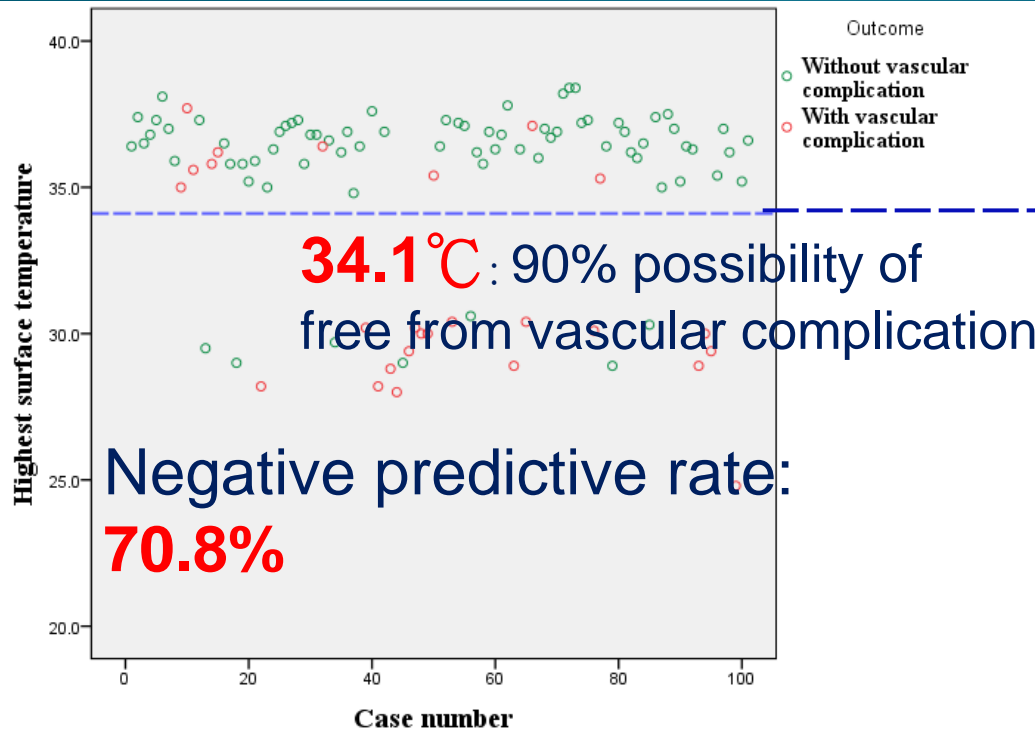
- 91 patients with 120 replantation procedures
- 101 replantation with arterial and venous anastomosis → 74.3% cases free from vascular complication
- 19 artery-only replantation → 73.7% cases free from vascular complication



Results

Positive predictive rate:
88.1%

Positive predictive rate:
75%



Replantation with arterial and venous anastomosis

Artery-only replantation



Results

■ Probit model of **artery-only replantation**

Highest temperature	
Possibility	Temperature
70%	22.1°C
75%	31.4°C
80%	41.8°C
85%	54.0°C
90%	69.3°C

Low predictive value

Lowest temperature	
Possibility	Temperature
70%	28.1°C
75%	26.4°C
80%	24.5°C
85%	22.3°C
90%	19.5°C

Reverse pattern



Conclusions

- Thermometric monitoring has high value in the replanted digits which can restore physiologic circulation.
- However, these characteristics lose in artery-only replantation.
- More monitoring instruments are mandatory to enroll for early detection of vascular complication of artery-only replantation.