Treatment Strategies for Severed Finger

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Simple Replantation
1 year Postoperation
Perfect replant

• function and appearance close to normal
finger amputation associated with tissue defect
C-shaped flap from great toe

- Flow through flap
- Digital to digital
- Like to like
Anatomy
Clinical Case
• Flow through flap
• Digital to digital
• Like to like
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Finger tip replantation

• Try to do replantation as possible as we can
Tissue replantation in finger
Case report: Wenlong Zhang
Supermicrosurgery

Flap Replantation
MiniFlap Replantation
Severed finger should immediate Replantation
But, When the patient......

- has life threatening injury
- There is damage of vital organs
- The patient disapproved of replantation
- Other reason......
17 years ago

• A patient with a severed index finger
• I wanted to replant the finger immediately
• But the patient refused, Because the patient intentionally cut off his own finger
What should I do?

It is pity If not replantation
Severed Thumb/finger cryopreservation
Put the finger into liquid nitrogen
Preserved temperature : $-196^\circ C$
Preserved time : 81 days
After 81 days
The patient came back

- He wanted finger reconstruction
- He knew the finger had been preserved
- He asked me if I could replant the finger
I try...
81 days later
The wound already healed
81 days later
The wound already healed
81 days after cryopreservation
replant
1 week post replantation
1 month postoperation
X-ray
1 month postoperation
6 month postoperation
Angiography: 6 month after replantation
Function: 70 days postoperation
14 years postoperation
Case 2
another cases of cryopreserved finger

• Left index finger amputated
• Preserved temperature : $-196^0C$
• Preserved time : 5 days
Amputated finger
index wound
X-ray
Perfuse cryopreservation solution
Program cryopreservation
Put the finger into nitrogen
5 days later
Rewarming the finger
Rewarmed finger
Histological change of the amputated finger after cryopreservation.
Replant
Superficial vein was harvested in forearm
Repair artery with transplanted vein
vein anastomosis
replanted finger with sufficient blood supply
3 months after replantation
3 months after replantation
3 months after replantation
3 months after replantation
6 months replantation
6 months after replantation
Function
6 months after replantation
13 Years
postoperation
Cryopreservation
until now, not all the amputated fingers can be successfully replanted
Thumb and Finger reconstruction
Toe to hand
Zengtao Wang (1999)
Multiple fingers reconstruction
The feet are very ugly
I thought:

• Why transplant the whole toe?

• Can I only transplant part of the toe?

• Transplant the tissue from somewhere else in the body.

• Make a new finger or thumb with use of various tissues.
New Techniques in Thumb and Finger reconstruction
Transplant tissues from all over the body

Make a new finger or thumb with use of various tissues
Key technique of reconstruction: design
Key technique of design:

clinical anatomy
Shizhen Zhong: my anatomy teacher
Acland : my anatomy teacher
He told me the important thing
vein
no veins on both sides of the joint
Where is the origin of the artery?
Where is the origin of the artery?
Where is the origin of the artery?
Where is the origin of the artery?
Then

I use new technique

for thumb and finger reconstruction
Classify according to
finger pulp defect
Hook nail deformity of the finger
Hook nail deformity
Fingertip reconstruction
Reconstruction for Grade II Defect of the finger
Method 1
How to let the nail looks better?
Reconstructive arterial arch
2 years post operation
grade V defect of the finger
Function of the feet
Grade VI defect of the thumb
Multiple finger reconstruction
Thanks!