Clinical outcomes of full thickness skin graft combined with negative pressure wound therapy in diabetes mellitus foot amputee after infection.

Ji-Yong Ahn

Department of Orthopaedic Surgery, Uijeongbu St. Mary’s Hospital

College of Medicine, The Catholic University of Korea
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Ji-Yong Ahn, M.D.

Our disclosure are in the Final AOFAS Mobile App.

We have no potential conflicts with this presentation.
Infected DM foot with amputation

- Amputation
- Incision and Drainage
Negative pressure wound therapy with skin graft

No more amputation?

**Split thickness skin graft**
- better survival rate
- less revascularization
- can cover large defect
- donor site complication
  - such as infection,
  - delayed healing,
  - pain and scar
- recipient site has less cosmetic result.

**Full thickness skin graft**
- no donor site problem
- operation can be performed under local anesthesia,
- good cosmetic results
- special instruments such as a dermatome is not necessary.
Purpose

• To investigate clinical outcomes of full thickness skin graft combined with negative pressure wound therapy in DM foot infection.
Materials and methods (1)

- June 2014 ~ January 2016
- 21 patients of 21 infected diabetic feet
  (20 cases of midfoot and 1 case of hindfoot)
- mean age of 51.7 years (37 to 81)
- with the mean 12 months follow-up
- FTSG was performed after sufficient granulation healing of DM foot amputee with Vacuum-Assisted Closure (VAC) device (Curavac® System, CGBio Co. Seongnam, South Korea).
- The wound healing after FTSG was evaluated during the follow-up.
- The relationship between outcomes of FTSG and multiple risk factors were evaluated
Materials and methods (2)

- NPWT at pressure 100-125mmHg
- Changed every other day
- FTSG from inguinal area under local anesthesia
- After measuring skin defect size, we drew an elliptical skin design at the inguinal area. 2% lidocaine was infiltrated into the donor site and the designed skin was harvested with the blade.
- The donor site was closed layer by layer with 3-0 vicryls and 4-0nylons.
- The harvested skin was irrigated with normal saline and subcutaneous fat tissue was removed manually to remain only dermis and epidermis. The harvested skin was sutured with nylons around margin of the defect.
Results

- 20 feet showed complete healing of wound and one foot showed failed wound healing.
- Average FTSG size was 13.5cm² (range, 1 x 2cm ~ 5x6cm).
- Mean number of VAC change before FTSG were 11 (range, 2 to 18)
- Average 58 days were taken to prepare sufficient granulation wound bed for skin graft.
- Complete healing was achieved after 10 weeks later. (range, 8 to 12)
- No patient showed donor site complication such as pain, wound dehiscence, infection and/or hematoma.
- Mean C-reactive protein (CRP) values and Hemoglobin A1C (HbA1C) were 1.24 and 9.21 just before FTSG, respectively.
- There were no significant correlations between wound healing and risk factors (CRP, HbA1C) (p=0.223, p=0.175).
M/56 DM nephropathy with HD

- after I&D, open amputation
- postoperative FTSG

Last follow up 13 month
F/40 DM nephropathy with HD
Full thickness skin graft combined with negative pressure wound therapy can be the treatment of choice for the diabetes mellitus foot amputee as an alternative split thickness skin graft.


