Wound Clinic Limb Salvage
Disclosures

Compression Dynamics, LLC: Medical Director, Clinical Research with EdemaWear®

MIC Kimberly Clark Corp: Patent License for MIC Transduodenal Jejunostomy Tube

Misonix, Inc: Clinical Research with SonicOne®

PuriCore Inc: Clinical Research with Vashe®

Wake Pharmaceutical: Clinical Research with Wound Be Gone®
Video Link – Eight Bells

• http://www.youtube.com/watch?v=01ZDgx9jSjA&NR=1
Participants Can Calculate Answers For The Questions:

- “Will not amputating cost the patient her life?”
- “When patients refuses amputation for nonhealing wounds will palliative wound care, like Hospice for cancer, serve the patients needs?”
- “When we roll the dice with exciting, expensive advanced wound modalities will she get a worthwhile payout?”
Outcomes in 169 non-candidates for arterial revascularization: 20% amputation at 18 months.
Fig 2. Incidence of major amputation in limbs with initial ankle-brachial index \((ABI) > 0.5\) compared with limbs with an initial ABI < 0.5. \(P = .01\) using log-rank analysis. Error bars indicate standard deviation.
Minor forefoot amputation in patients with low ankle pressure

William H. Baker MD  Robert W. Barnes MD
Am J Surgery, March 1977

Abstract: Ankle pressures were obtained using Doppler ultrasound in 57 patients undergoing forefoot amputations. Contrary to other reports, no amputations healed with a pressure of less than 60 mm Hg.
“Epiboly”

Embryology - The movement and spreading out of cells into sheets of tissue that overlie or surround other groups of cells, especially as in the formation of certain gastrulas.

Coined 1870
Greek *epibolē* a throwing on, equivalent to *epi-* + *bol-* (variant stem of *bállein* to throw)

Wound care - Edges of top layer of the epidermis have rolled down to cover lower edge of epidermis, therefore epithelial cells cannot migrate from wound edges.
“Traditional” L BKA Indications

1. Nonhealing 1\textsuperscript{st} metatarsal ulcer 12/07–4/08
2. Paraplegia with knee contracture
3. No Doppler signals in L foot (ABI 0.0)
4. Morphine for pain
5. Depression
Molly the pony with prosthesis

http://www.youtube.com/watch?v=DkeLgXocwas
What’s wrong in this picture?

- Extensive maceration of dermis (3 weeks NPWT)
- Extensive Erythema (infection?, osteomyelitis?, ischemic dermatitis?)
- Extensive edema
- Heavy bioburden of macerated skin
- Morphine for wound pain
- Two vascular surgeons recommended BKA
Respiratory burst is the rapid release of reactive Oxygen species, superoxide free radical and $\text{H}_2\text{O}_2$.

Myeloperoxidase in neutrophils converts $\text{H}_2\text{O}_2$ into Hypochlorous acid, HOCl, which kill bacteria in phagosomes.

HOCl, 250 ppm, is highly effective in killing biofilm bacteria.
66 limbs of 60 patients 70 plaque excisions
(Indications included tissue loss based on SVS isc
The technical success rate was 87.1% (61/70). Adjunctive treatment was required in 17 procedures (24.3%), consisting of 14 balloon angioplasties and three stents. The mean increase in ankle-brachial index was 0.27 ± 0.04. Four (33.3%) of 12 patients experienced reocclusion during the same hospitalization, and amputation and open revascularization were required in two patients each.
Open Transmetatarsal Amputation in the Treatment of Severe Foot Infections

D. Preston Flanigan MD, James J. Schuler MD

Am J Surgery, Aug 1989

Infection or gangrene that compromises the plantar skin flap may preclude a standard transmetatarsal or midfoot amputation. We report a series of forefoot infections with loss of the distal plantar skin. Open or guillotine amputation at the mid-metatarsal level led to a high rate of healing and a durable stump. Wound closure was obtained by wound contracture alone or by use of partial-thickness skin grafting. Rehabilitation was dependable. The association of diabetes mellitus or gangrene did not adversely affect outcome. Open transmetatarsal amputation is a safe surgical option preferable to midfoot or below-knee amputation for the treatment of severe forefoot infection.