Case Report: Surgical Approach for Plantar foot wound with Modified Hurricane incision (O-Z) Vs. Gaenslin’s incision

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Disclosure

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My disclosure is in the Final AOFAS Program Book.
I have no potential conflicts with this presentation.
Case Report: Pre-op

M/64
C/C: Septic Arthritis on 1st Metatarsophalangeal Joint right foot
P/I: Failed Diabetic Custom Made Shoe Gear and Total Contact Cast
PMH: Type 2 Diabetes, CKD, Multiple Incision, drainage and debridement of right foot due to diabetic foot infection
Physical Exam: Ulcer 4.0cm x 3.5cm fibrotic and granular mixed Wound bed with purulent drainage and > 2cm Erythema on periwound. Probing to the bone.
Case Report: Intraop

- Gaenslin’s incision vs. modified hurricane incision
- Plantar foot incision: Lack of movable skin.
- Longitudinal incision: against skin relaxed line
  Horizontal incision: interrupting Neurovascular structure.
- Skin relaxed line on plantar aspect of foot runs medial to Lateral direction.
- Incision on periwound area to resect all fibrotic tissue.
- Extensive incision distally and proximally tangential to the medial and lateral aspect of circle.
Case Report: Intraop/Radiography

- This procedure was done for right 1\textsuperscript{st} Metatarsophalangeal joint infection.
- Previous pan metatarsal head resection is done Vs. Transmetatarsal amputation
- Elongated 1\textsuperscript{st} metatarsal caused Plantar ulcer on 1\textsuperscript{st} Metatarsal head.
- Thus, adequate surgical exposure with less tension on skin reapproximation was concerned.
Case Report : Post-op

• Right 1st metatarsal
  2+ proteus mirabilis
  2+ staphylococcus aureus coagulase positive (Oxacillin resistant)
  2+ beta Hemolytic Streptococci Group B
• Right 1st metatarsal
  Acute Osteomyelitis
  Proximal margin: acute osteomyelitis
• Antibiotic Therapy
  6 weeks of IV Vancomycin, Cefepime, and PO Flagyl per ID
Case Report: Post-op

- No Weight bearing on Bilateral lower extremity for 4 weeks with wheel chair to reduce the possibility of wound dehiscence and wound development in contralateral side.
- Check the wound in weekly basis for any wound dehiscence.
- After 4 weeks, total contact cast was applied on right foot for early ambulation on right lower extremity with offloading on the surgical site.
Discussion

- Gaenslin Incision Vs. Modified Hurricane Incision
  Plantar foot wound with bone resection.
  Adequate surgical exposure for bone resection is challenging.

- Skin tension should be considered for skin closure
  since there is lack of skin movement on plantar aspect of foot.
  Also, diabetic patient has other comorbidities such as peripheral vascular disease
  , chronic kidney disease and peripheral neuropathy. Therefore, the wound healing
  time is greater than normal, healthy patient. Skin tension has to be concerned.
Conclusion

- Modified Hurricane Incision / O-Z flap is advocated for Skin closure on plantar aspect of foot ulcer.
- When incision is planned on plantar aspect of foot, skin tension line and neurovascular structures should be concerned.
- Modified Hurricane incision / O-Z flap has better outcome with less wound dehiscence compared to Gaenslin’s incision.
References