How to arrange the follow up and how should wound healing guide re-intervention decisions

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- Consulting Cook Medical
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest
CLI endpoints

- Optimal revascularization technique
- Optimal foot care management
- Global cardiovascular protection

- Limb salvage
- Restenosis/TLR
- Global cardiovascular mortality

- Patency
- Healing
- Preservation of deambulation
- Prevent MI/Stroke
- Survival
CLI patient post revascularization
Follow-up

Endovascular Team
✓ Choose Vascular Access and strategy
✓ Optimal revascularization
✓ Angiosome concept
✓ Lesion blush
✓ Optimize pedal out-flow
✓ Optimize in-flow
✓ Duplex scan

Foot clinic Team
✓ Healing process surveillance
✓ Minor amputation timing
✓ Debridement
✓ Infection treatment
✓ Skin gtaft
✓ Major amputation

• Wound Healing Surveillance
• Vessel patency
• Cardiovascular protection
Wound Healing Surveillance

Follow-up schedules: 2 days/week for the first 2 months, once a week for the third month and then every two weeks until complete healing

- Ulcer Debridement
- Minor amputation timing
- Infection treatment
- Skin graft
- Regression of healing signs
- Indication for Patency assessment and TLR
Wound Healing Surveillance

✓ Regression of local healing signs
  - Granulation tissue reduction
  - Increase fibrin deposition
  - Recurrence of necrosis (black wound margin)
  - Ischemia signs (yellow-black vs red-pink)
  - Pain (supine position)

The most important indication to check vessel patency and re-intervention in a fast track strategy fashion
Rutherford 5: concomitant ATK and BTK disease: DCB angioplasty
Patency assessment before planned minor amputation

Bleeding from surgical incision confirm good patency of necrotic tissue

Minor amputation at 1 month after demarcation of necrotic tissue

Healing process completed at 5 months

Patency assessment before planned minor amputation
Fibrin deposition, black wound margin after minor amputation

In situ Peroneal-distal AT by-pass

Granulation tissue starts at 3 days (red points)
Osteomyelitis

Additional minor amputation
Granulation tissue increases

Tissue for fibroblast culture
15 days, healing stops, fibrin deposition increases, granulation reduction, foot pallor. Duplex scan indication
Minor amputation after 20 days from revascularization

Abscess drainage
Worsening of the wound at 2 months: necrotic margin, fibrin deposition, regression of granulation tissue

Restoration of healing process, red more than white, reduction of ulcer dimension
1 week after revascularization
4 months healing stops fibrin deposition and regression of granulating marginal tissue.

Post occlusive flow in distal PTA.

Post TLR healing goes faster.

Completed at 10 months.
DUPLEX SCAN: fast, simple and reliable also for BTK
Cardiovascular protection

Improved survival of diabetic foot ulcer patients 1995-2008
Possible impact of aggressive medical treatment

- Aspirin 70 mg daily
- Statins
- ACE inhibitors (when hypertension, CAD or LVH were present)
- Beta Blockers (in case of CAD or uncontrolled hypertension)

Young MJ Diabetes Care 2008 31:2143-2147
Cardiovascular protection

Coronary Angiography in 90 consecutive CLI patients undergoing PTA without history of CAD and cardiac ischemic symptoms

- CAD prevalence: 65 (72%)
- Single Vessel Disease: 34%
- Multivessel Disease: 66%
- LM significant stenosis: 6%
- CTO in at least 1 vessel: 20%
- Additional CA: 18 ml
- CIN incidence: 2 (2%) vs 3% in the no coronary angiography group.

Liistro et al; TCT 2007 abstract
Advantages of myocardial revascularization after admission for critical limb ischemia in diabetic patients with coronary artery disease: data of a cohort of 557 consecutive patients

- 557 patients, followed for a mean follow-up of 3 years. Cardiac mortality was 20% (110/557)

- Specifically, 87% of these deaths occurred in patients without history of myocardial revascularization, 10.7% in patients with previous myocardial revascularization, and 2.3% in patients in whom myocardial revascularization was performed after hospital admission.

Conclusion

CLI patients deserve meticulous follow-up

- Invest in human resources to grow up a CLI center
- Be confidential with healing process anatomical changes
- Apply major amputation protocol
- Build a multispecialty team
- Duplex Skill should be part of your training
- Fast track strategy for Duplex and re-intervention is a must
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