**11:25 am – 11:37 am**
**Converting Replacement to Fusion**
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THE PROBLEM: not the same as a primary arthrodesis

Number of failed ankle arthroplasty cases certain to increase in foreseeable future

CONSIDERABLY MORE DIFFICULT:
due to (possible) infection; bone loss; deformity; limited soft tissue envelope

PRINCIPLES:
Maintain limb length
Obtain sufficient fixation
Preserve subtalar joint (where possible) & malleoli

ANATOMIC COMPRESSION ARTHRODESIS TECHNIQUE (HANSEN):
Preservation of bony anatomy/subchondral plate:
maximize inherent stability, vascularity; preserve medial & lateral malleoli
Minimal bone resection:
minimize limb shortening; minimize malleolar impingement
Multiplanar screws

ACAT / ANTERIOR PLATE AUGMENTATION (SANDERS):
Multiplanar screws / anterior plate: maximum rigidity

WORKUP (BERKOWITZ): Thorough exam!
Rule out deep infection: wound healing difficulties / antibiotic use
Skin/soft tissue envelope: overall condition / previous incisions
Medical co-morbidities / Nicotine use
Vascular supply: pulses / hair growth
Standing alignment: deformity / limb length inequality
Subtalar motion / pain
Standing XR Ankle & Foot:
deformity / lysis / remaining bone stock (talus) / subtalar jnt changes
CBC / ESR / CRP / aspiration

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DECISIONMAKING:

| | |
|---|---|
| Deep infection? | intra-op cultures; potential staged arthrodesis |
| Preserve subtalar joint? | sufficient talus bone stock; reasonable joint space |
| Size of defect / bone graft options? | cancellous vs structural |
| Internal fixation options? | screws/plate; nail; nail/plate |

FILLING THE DEFECT:

| | |
|---|---|
| < 2 cm: | CANCELLOUS only: minimal loss of limb length |
| > 2cm: | STRUCTURAL: iliac crest autograft / allograft (IC / femoral head) |
| severe: | FEMORAL HEAD BULK ALLOGRAFT: acetabular reamers / osteoinductive agent: IC BMA / BMP / PRP / stem cells |

"BOOKS ON A SHELF": (CAMPBELL)

Tricortical iliac crest autograft/allograft / VERTICALLY oriented rectangular blocks
Maintains length / maximizes bony apposition
Must shape to make plantigrade (~ more trapezoidal)

FUTURE OPTIONS:

TITANIUM SPINAL CAGE / cancellous autograft: OFF-LABEL

TRABECULAR METAL IMPLANT / cancellous autograft: OFF-LABEL

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POST-OP PROTOCOL:

Splint/cast immobilization
Strict NON-WEIGHTBEARING x 10-12 weeks
Add BONE STIMULATOR for structural graft

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