



TKA w/ Extensor Mechanism Failure w/ Dr. Chen Podcast Notes

Extensor Mechanism Rupture

- Incidence- .1-2%
- High risk of reoperation

Patellar fracture

- Incidence of 1-2%, men>women
- Risk factors:
 - Osteoporosis, implant design (central peg), cementless implants
- Technical risk factors:
 - Excessive/inadequate resection, devascularization of the patella, and patellar subluxation, implant malrotation. Patella resurfacing?
- Eval: is patellar component loose + and is there >20deg extensor lag?
- Treatment:
 - Well fixed component + good extensor function > KI
 - Lag >20 degrees or loose component should be revised (poor results)
 - Examine bone block after loose component removed
 - Excise small fragments, fix major fragments, assess bone stock for further patellar management, repair soft tissues

Quad tendon rupture

- Incidence 1.1%
- Can be assoc in patients that had a lateral release
- Eval: Palpable defect. Ultrasound can assist in diagnosis
- >20deg extensor lag on exam- cutoff point that indicates surgical repair necessary
 - <20- tx in full extension for 6 weeks w/ gradual mobilization> hinged knee brace after 6 weeks locked in extension w/ ambulation
- Tx-
 - Acute- end to end repair
 - Drill holes/ suture anchors
 - +/- allograft supplementation
 - Chronic rupture- quad turndown, allograft recon or synthetic graft

Patella tendon rupture

- 0.2-5%
- Risk factors: multiple operations, stiff knee (difficulty everting patella), trauma w/ hyperflexion
- Preventing intra-op rupture
 - Avoid w/- careful PM dissection from tibia to allow ER (dec tension on tendon), quadriceps snip, lateral release, quad turndown, or tubercle osteotomy if need be
- Can occur post- op (MUA)
- Eval:
 - Tibial tubercle avulsion, distal pole or midsubstance tear
- Treatment:
 - Acute avulsions from bone-
 - tx w/ sutures in soft tissue , and either drill holes in bone or w/ suture anchors in bone
 - Mid substance tear
 - end to end
 - +/- semi T autograft
 - Chronic ruptures/patella tendon dysfunction:
 - Retraction/shortening seen. Patella can be necrotic/ damaged
 - Achilles tendon allograft
 - Complete allograft extensor reconstruction

Allograft extensor reconstruction

- Patella shelled from extensor expansion
- Component revision PRN
- TT allograft measured
- At least 15mm host bone cut below tibia plateau - help resist proximal graft escape
- Wires in tibia
- Other technical pearls?

Post op protocol

- Cast/splint?
- Knee ROM @ 6 weeks?

Complications

- Extensor lag

Sources:

Parker, D. A., Dunbar, M. J., & Rorabeck, C. H. (2003). Extensor mechanism failure associated with total knee arthroplasty: prevention and management. *JAAOS-Journal of the American Academy of Orthopaedic Surgeons*, 11(4), 238-247.

Rosenberg, A. G. (2012). Management of extensor mechanism rupture after TKA. *The Journal of bone and joint surgery. British volume*, 94(11_Supple_A), 116-119.