SESSION B
10:30 – 11:30 am

SYMPOSIUM 2:
Complications

Moderator:
Bruce E. Cohen, MD
bruce.cohen@orthocarolina.com
Charlotte, North Carolina

♦ 10:35-10:45 am - Non Union, Malunion of 1st Metatarsal Osteotomy

Christopher P. Chiodo, MD
Boston, Massachusetts

Malunion and non-union are potentially devastating complications of corrective metatarsal osteotomies used for the treatment of hallux valgus. Knowledge of strategies to avoid these undesirable outcomes is critical. Such strategies include prudent patient selection, careful surgical planning and execution, sufficient internal fixation, and appropriate post-operative care. The management of an established malunion or nonunion can be challenging. Treatment options for non-union include immobilization, electrical stimulation, arthrodesis, and revision osteotomy with bone grafting. Options for malunion include accommodative shoewear and orthoses, revision osteotomy, and arthrodesis.

♦ 10:45-10:55 am - Ankle Arthroscopy Complications

Eric Giza, MD
eric.giza@ucdmc.ucdavis.edu
Assistant Professor Of Orthopaedic Surgery
UC Davis Department of Orthopaedics
Sacramento, California

Complications of ankle arthroscopy are rare, but most complications that do occur are neurologic\(^1,3,5\). Stetson and Ferkel reported a 9% complication rate in 612 cases, 49% being neurologic\(^3\). This is usually characterized by temporary numbness of the skin or irritation of the scar\(^5\), occurring from injury to the cutaneous nerves where they pass through the ankle joint. The most commonly injured nerves are the superficial branch of the peroneal (56%), sural nerve (22%), greater saphenous nerve (18%) and the deep peroneal (4%)\(^3\). Other possible complications include delayed wound healing, superficial or deep wound infections, ligament injury, deep vein thrombosis, instrument breakage, articular surface damage and chronic regional pain syndrome\(^3,4\).

Although antibiotics are given pre-operatively to prevent infection, surgery can cause superficial wound infections or deep joint infections. Superficial infections occur in 1% of patients and have been correlated with the portal placement, type of cannula, early mobilization, and method of portal closure\(^5\). Deep wound infections have been reported in less than 0.5% of patients\(^5\). Ligament injury can also occur in less than 0.5% of cases\(^5\).

The use of invasive or constant manual distraction of the ankle can increase the complication rate. Van Dijk surveyed 1,300 consecutive patients after ankle arthroscopy without the use of routine distraction and reported an overall complication rate of 3.4%\(^2\).
Although postoperative complications from ankle arthroscopy are infrequent, they can be minimized by keen understanding of ankle anatomy along with careful preoperative planning.

References

10:55-11:05 am - Sesamoidectomy Complications

Emilio Wagner, MD
Santiago, Chile

The hallucal sesamoids are an integral part of the metatarsophalangeal joint. They form part of the flexor component of the joint, being included in the flexor hallucis brevis tendons. Their main functions are to protect the flexor hallucis longus tendon, to increase the moment arm of the flexor hallucis brevis and longus, to protect the joint and increase the area of impact absorption. They can be bipartite in nature, most commonly the medial which is also the larger one.

Different conditions can affect the sesamoids, as fractures, sesamoiditis, avascular necrosis, infections, osteoarthritis and others. After conservative treatment has failed, surgical alternatives include sesamoidectomy. Classic articles in the literature report up to 10% chance of varus or valgus deviation after fibular or tibial sesamoidectomy. Claw hallux is reported mainly after a resection of the tibial and fibular sesamoidectomy, in up to 24%. Painful scarring is seen mainly after dorsal incisions, as it has been shown up to 96% of excellent results after plantar incisions. Pain due to transfer lesions has been reported up to 10%, although many articles do not report this complication. Nerve injury, stiffness and function loss are also reported. The reported incidence of stiffness and functional loss ranges from 0% to 60%. Many of these complications reported to be frequent in classic literature appear not to be so frequent, as it has been reported in the last 10 years up to 90% of good results after fibular or tibial sesamoidectomies. Careful attention to the diagnosis and careful surgical technique are requisites for avoiding complications. To avoid varus or valgus, a careful dissection of the sesamoid shelling it off the flexor hallucis brevis tendon is required, in order not to alter the continuity of the flexor apparatus. A varus can be solved if a mobile joint is present with a tendon transfer. A valgus deviation can be solved with reefing of the medial structures and a soft tissue reconstruction of the defect left after sesamoidectomy, with the abductor hallucis. Careful dissection is needed to avoid nerve damage, and a must to consider is the proper identification of the nerve in each location. Nerve damage may be solved through a neurolysis if possible, or if the nerve is too damaged, a neurectomy and burial of the proximal stump into the neighbouring muscle. Painful scarring can be avoided with meticulous technique, and proper closure of the wound. Transfer lesions can be avoided with a good preoperative planning, ruling out other deformities such as pes cavus where a possible overload of the adjacent sesamoid can be seen. In these cases a metatarsal osteotomy may be added in the primary operation to avoid overpressure of the remaining sesamoid. Transfer lesions can be managed most of the time with insoles. If not, a shaving of the involved sesamoid may solve the problem. A cock up hallux can be observed, being more frequent after bilateral sesamoidectomies. Therefore a bilateral resection should be avoided. A clawtoe deformity can be managed with an interphalangeal arthrodesis and a flexor hallucis longus transfer through the proximal phalanx, with very good results. In young population, due to the decrease in the moment arm of the flexor hallucis longus, one should try to avoid sesamoidectomies in order to keep as normal as possible the propulsive action of the metatarsophalangeal joint. In these young patients if possible, sesamoid shaving should be considered.