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structures. Medial column stabilization should therefore be considered when (1) forefoot varus deformity is identified following hindfoot realignment; (2) pronounced medial column instability is present, even in the absence of forefoot varus; and (3) when degenerative changes are present within the medial column articulations. Common surgical procedures include arthrodesis of the talonavicular joint, naviculocuneiform joint, and first tarsometatarsal joint, as well as osteotomy of the medial cuneiform (Cotton osteotomy).

Naviculocuneiform Arthrodesis for Treatment of Adult-Acquired Flatfoot Deformity 293

Jason V. Naldo and Kelly Kugach

The adult-acquired flatfoot is a complex multiplanar deformity that requires the foot and ankle surgeon to balance soft tissue, correct hindfoot valgus, and address instability of the medial column. The naviculocuneiform joint is historically underappreciated in regard to its involvement in medial column instability relative to the talonavicular and tarsometatarsal joints. Proper clinical and radiographic evaluation of the medial column, specifically evaluating for deformity at each medial column joint, will allow the surgeon to ensure correction of deformity and decrease the recurrence of instability or failure of the reconstruction.

Ligament Insufficiency with Flatfoot: Spring Ligament and Deltoid Ligament 307

Sara Mateen and Jennifer C. Van

The objective of this article was to review the deltoid ligament and spring ligament specifically as they pertain to ligament insufficiency and adult-acquired flatfoot deformity. Discussion includes the normal and abnormal biomechanical forces that extend through these ligaments in normal and flatfoot deformity. Current literature related to spring ligament repair as part of the flatfoot deformity reconstruction is also reviewed.

Double versus Triple Arthrodesis for Flatfoot Deformity: When, Why, and How? 315

Patrick R. Burns and Nicholas S. Powers

Different types of arthrodesis for flatfoot deformity have a long history in foot and ankle surgery. Arthrodesis of the rearfoot can be a useful tool in helping correct deformity and maintaining that correction with good long-term results. Questions have risen recently however about the necessity of including the calcaneocuboid joint in the traditional rearfoot arthrodesis or triple arthrodesis. The double arthrodesis of the talonavicular and subtalar joints has grown in popularity and this review helps the reader choose with a review of the biomechanics, surgical approaches, fixation techniques and recent literature outcomes of both procedures.

Ankle Joint Salvage for Rigid Flatfoot Deformity 333

Kshitij Manchanda, George Tye Liu, Matthew J. Johnson, Michael D. Van Pelt, Katherine M. Rasovic, and Dane K. Wukich

Rigid flatfoot deformity with valgus ankle instability is a complex condition to treat. Thorough clinical and radiographic evaluation is vital to determine treatment strategies. Nonoperative treatment usually relies on bracing or various orthoses. Surgical interventions include ligament reconstruction, osteotomies, arthrodesis, arthroplasty, or a combination of these procedures. Before addressing the ankle deformity, a plantigrade foot is important so a staged approach may be necessary. Misalignment of the ankle replacement can lead to edge loading and early failure. As the implants and our understanding of ankle arthroplasty improve, more patients may benefit from a motion-preserving procedure rather than an arthrodesis.

Approach to the Ankle in Adult Acquired Flatfoot Deformity 341

Mark J. Capuzzi, Jason R. Miller, and Tymoteusz Siwy

Adult acquired flatfoot is a progressive deformity of the foot and ankle, which frequently becomes increasingly symptomatic. The posterior tibial tendon is most commonly associated with the deformity. A targeted physical examination with plain film radiographs is the recommended initial assessment, which will further guide a physician toward procuring more advanced imaging or toward surgical intervention. In this chapter the authors review the current literature of their approach to the treatment of the ankle in end stage of adult acquired flatfoot deformity.

Surgical Considerations for Revision Flatfoot Reconstruction: Overcorrection/Undercorrection 351

Sandeep Patel, John M. Schuberth, Matthew Cobb, and Craig E. Krcal Jr.

Reconstructive surgery of the symptomatic pes planus deformity is a very common procedure with relatively good outcomes. Many factors such as patient selection, patient expectations, and surgical execution can influence the results. In addition to achieving osseous union, the overall postoperative alignment is critical in determining functional outcome. Specifically, under- and over-correction respectively present their own unique problems and symptomatology. The purpose of this review is to discuss the adverse outcomes after mal-reduction of flatfoot reconstruction and emphasize the strategies to correct the subsequent deformity.

An Update on Pediatric Flatfoot 365

Caitlin Mahan Madden and Kieran T. Mahan

The pediatric flatfoot can include multiple planes of deformity and concomitant concerns such as metatarsus adductus and equinus. Each aspect of the deformity must be carefully evaluated before any surgical planning. The goal of surgery should be an improvement in symptoms by creating a controllable foot with a reduction of deforming forces. There are multiple procedures that can be used for the pediatric flatfoot, including the Evans calcaneal osteotomy, the Cotton medial cuneiform osteotomy, the medial calcaneal slide osteotomy, and arthroereisis implants. Each contributes in a specific way to the overall deformity correction. Multiple options exist for grafts and hardware.