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The ankle joint complex and its surrounding ligaments represent a complex mechanical structure with its mechanical properties highly dependent on the integrity of the ligaments. While an acute inversion/supination trauma may typically result in lateral ankle instability, a trauma that includes an acute adduction of the foot may cause an additional loss of stability of the lateral Chopart joint. An external/abduction trauma, while the foot is fixed in a neutral to dorsiflexed position, may cause injuries to the inferior tibiofibular (syndesmotic) ligaments. Injuries to the medial side, as is the case for an eversion/pronation trauma, in contrast, may lead to various types of instability patterns depending on different preexisting conditions such as deformities and function of the posterior tibial muscle. On the lateral side, inappropriate treatment may typically result in chronic instability, whereas on the medial side, it may result in progressive destabilization of the hindfoot as can be seen in an acquired flatfoot deformity. Therefore, proper diagnosis and appropriate treatment is mandatory to prevent the patient from experiencing chronic instability and progressive destabilization of the ankle and foot, respectively.

Proper medical history taking and physical examination remain the “single most” important tool in the diagnostic process of an unstable foot and ankle. Though tremendous progress has been made in the last two decades, current imaging modalities are not able to replace the clinical workup. While MRI may be helpful in assessing acute injuries, weight bearing CT scans offer better information in most chronic conditions. The introduction of arthroscopy

brought new insights on articular pathologies, mainly of the ankle joint; but, with this, the surgeons learned to avoid the anatomy. Knowledge of the anatomy is mandatory for any surgical procedure, however. Therefore, in this book emphasis is given on describing the anatomy so the surgeon can understand the pathology to successfully plan the surgeries and estimate their effect.

The talus has a unique function coupled to its anatomical shape. It provides the functional coupling between the lower leg and foot. As this bone does not have direct muscle attachments, it is often called “bony meniscus.” This unique construct may explain why the joints around the talus are highly exposed to injuries that, if not properly treated, may result in an unstable foot and ankle. The key for successful treatment is the full understanding of the resulting pathomechanics and involved morphologic structures. Therefore, emphasis is also given to work up the current knowledge on the biomechanics of the foot and ankle as well as the changes caused by instability. This, in turn, will help the surgeon to plan and to perform successful reconstructive surgeries.

Finally, the best treatment results from thoroughly understanding the pathology, knowing the expectations of the patient and being aware of the availability of various surgical and nonsurgical techniques. When considering surgical treatment, knowing their possibilities and limitations is mandatory for success. Main focus of this book is thus given to step-by-step instructions—in form of an operational manual, based on the authors’ lifelong experience.