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Cavus / High Arched Foot

A high arched foot is a normal variant of foot shapes that naturally occurs in the population. In some cases, the foot shape is more on the extreme that results in a significant mechanical imbalance to the foot leading to increased pressure on the side of the foot, the front of the foot that can lead to instability (giving out), tears of the tendon on the outside of the ankle (peroneal tendons) and in long-standing cases, can lead to arthritis. If a patient is not experiencing any pain or instability, there is no proven benefit to preventative treatment. However, if there is pain or instability, the shape of the foot has to be taken into account to ensure a long-lasting resolution of pain. In some cases, the foot shape becomes more high arched and the heel can tilt in more over time secondary to a neurologic cause. The most common one that causes this progressive worsening of the foot shape is called hereditary motor sensory neuropathy (HSMN).

The physical examination is critical to understand the relationship of the patients' current complaint and difficulties in relation to the biomechanical aspects of the foot and ankle. The standing alignment and mobility of the ankle and foot are evaluated to determine if the foot mechanics are contributing and if they must be addressed in order to provide relief. The strength of the muscles is evaluated as if there is a difference in the strength of the muscles either from injury or a nerve problem, this leads to the deformity and may need to be addressed during surgery to restore balance to the foot. Xrays are taken - weightbearing - in order to determine the bony alignment and this may be required despite the fact that patients may come with prior MRIs or other imaging. Weight-bearing xrays are critical to understanding the alignment of

the foot and ankle. Further imaging with a weight-bearing CT may be ordered to understand more subtle aspects of the deformity if present in order to create a refined surgical plan to optimize the surgical outcome.

Treatment does not always require surgical intervention, however, orthotics or bracing may be discussed in order to treat the deformity in addition the underlying presenting complaint. If surgery is required, patients can find it difficult to accept the additional surgery to restore a more neutral alignment when the pain is focal to one location. We will do our best to explain why we feel this is biomechanically appropriate and will work with you to formulate what we feel is an appropriate surgical plan. Deformity correction may require osteotomies to break the heel bone or the 1st metatarsal. Isolated fusions are sometimes required to restore balance. For example, a patient that presents with ankle arthritis in addition to a high arch may only note that they have pain in the front of the ankle. After a thorough exam and radiographic examination, many patients may require a large reconstruction of the foot to reshape the foot with a combination of fusions and osteotomies. Following healing of this reconstruction a staged ankle replacement can be done to restore function and minimize pain. Although this seems like a lot of surgery, putting an ankle replacement with a persistent deformity not only fails to provide long-term relief, can make salvage much more complex as we have noted in treating these patients from outside institutions that have come for continued pain. Transfer of tendons from one location to another to change the forces around the foot and ankle to restore balance. Ligamentous stabilization and addition to release of contracted ligaments may also be required. These are extensive operations that are done to provide pain relief. The cosmetic shape of the foot will change, but not as drastically as one would assume despite the amount of surgery.