Hallux varus most commonly occurs secondary to McBride bunionectomy; it is typically an iatrogenic cause. (2,4,10,11,12). McBride described this presentation accompanying McBride bunionectomy. The residual lateral head of the flexor hallucis brevis in conjunction has shown to cause Hallux Varus. It is the result of an imbalance of dynamic and static forces about the first metatarsophalangeal joint. Without the adductor hallucis tendon, this imbalance results in a greater lever force required for hallux deviation of 4mm medially by 42.2%. When both the lateral head of the flexor hallucis brevis alone has never been shown as a deforming force leading to hallux varus. Donley reported on the forces required to displace the hallux medially when each lateral soft tissue component is removed. The forces were additive with the lateral soft tissue component being the most important. The forces required for hallux deviation of 4mm medially by 42.2%. When both the capsule and adductor hallucis tendon are released the force required is reduced an additional 48%. With a total reduction of 37%. In addition, with release of the lateral head of the flexor hallucis brevis tendon there is a total force reduction of 61% (4.16). To date there has not been a study that has analyzed the effects of an individual release of the adductor hallucis or flexor hallucis brevis tendon alone. It has been supported in the literature that hallux varus is not caused by the individual release or ruptures of the adductor hallucis tendon or flexor hallucis brevis but occurs when both are transected or ruptured (4,5,14). The lateral capsule does not have to be ruptured for the hallux varus deformity to present (5). Turner reported a case series of 25 patients in which an adductor tendon for hallux valgus was performed deviated of producing a hallux varus deformity (17). Besides the common causes of hallux varus there have been documented occurrences of spontaneous adult acquired hallux varus (4,18,8,19). A progressive hallux varus deformity occurred in a rural Indian population occurring in people in their fourth, fifth, sixth decade. The cause was thought to be due to a silent rupture of the adductor tendon (19).

Discussion


References

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Discussion

The abductor hallucis functions to stabilize the medial side of the 1st MPJ while the adductor muscle functions to stabilize the lateral aspect of the joint. Hawkins presents 500 cases of hallux valgus correction in which the abductor hallucis was released on its own, none of which produced a hallux varus deformity (5). However, in three of these surgeries there was a unilateral hallux varus deformity. In all three instances either toe lateral subluxation alone or the lateral head of the flexor hallucis brevis was transected along with a lateral deep soft tissue release. The addition of a lateral capsular release or radiographs showed proximal retraction of the lateral sesamoid. The lateral capsule was left intact in all these procedures (5).

Excessive lateral soft tissue release can be attributed to the hallux varus deformity, however, release of the lateral MPJ capsule, the adductor tendon, or the lateral head of the flexor hallucis brevis alone has never been shown as a deforming force leading to hallux varus. Donley reported on the forces required to displace the hallux medially when each soft lateral tissue component is removed. The forces were additive with the lateral soft tissue component being the most important. The forces required for hallux deviation of 4mm medially by 42.2%. When both the capsule and adductor hallucis tendon are released the force required is reduced an additional 48%. With a total reduction of 37%. In addition, with release of the lateral head of the flexor hallucis brevis tendon there is a total force reduction of 61% (4.16). To date there has not been a study that has analyzed the effects of an individual release of the adductor hallucis or flexor hallucis brevis tendon alone. It has been supported in the literature that hallux varus is not caused by the individual release or ruptures of the adductor hallucis tendon or flexor hallucis brevis but occurs when both are transected or ruptured (4,5,14). The lateral capsule does not have to be ruptured for the hallux varus deformity to present (5). Turner reported a case series of 25 patients in which an adductor tendon for hallux valgus was performed deviated of producing a hallux varus deformity (17). Besides the common causes of hallux varus there have been documented occurrences of spontaneous adult acquired hallux varus (4,18,8,19). A progressive hallux varus deformity occurred in a rural Indian population occurring in people in their fourth, fifth, sixth decade. The cause was thought to be due to a silent rupture of the adductor tendon (19).

Conclusion

Hallux varus deformity most commonly occurs secondary to McBride bunionectomy. However, when this traumatic induced hallux varus as being rare individual release or rupture of the adductor hallucis tendon has not been supported in literature as an etiology of hallux varus. Adductor hallucis had been observed to have a direct contribution decrease stabilizing forces by 67.4 percent, there has not been a study on release of adductor hallucis or flexor hallucis brevis tendon alone.