

"CONSTANT LENGTH PHENOMENON" OF THE FHL AND FDL MANAGED BY MIDFOOT Z-PLASTY: A SIMPLE & EFFECTIVE APPROACH

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Introduction: "Constant Length Phenomena" of flexor hallucis longus (FHL) and flexor digitorum longus (FDL) is also known as Checkrein Deformity. It is due to entrapment or tethering effect on the FHL and FDL tendon, or a sequelae of a missed compartment syndrome. This condition is a rare complication seen secondary to fractures of the distal tibia. Hallmark findings are flexion contracture of the interphalangeal joint (IP) and extension at the metatarsophalangeal joint (MTPJ). Currently there is no consensus on the standard approach for this condition. We are reporting a case of "Constant Length Phenomena" of FHL and FDL following compound fracture of distal tibia and fibula which was successfully treated via midfoot Z-plasty lengthening.

Discussion: A 20-year-old female presented with claw deformity of the all right toes following motor vehicle accident 2 years ago. She sustained compound fracture of the right distal tibia and fibula. She had undergone multiple surgeries. She noticed the clawing 6 months post injury. On examination, active dorsiflexion of the ankle joint produced hyperflexion deformity and impossible for the patient to actively or passively extend any of the toes. A longitudinal incision was made along the upper border of abductor hallucis muscle. The tendons of FHL and FDL were identified and tendinous interconnections between the tendons were divided. Next was Z-plasty lengthening of the FHL and FDL tendon and followed with manipulation of the toes. Complete correction of deformity was achieved.

Conclusion: "Constant Length Phenomena" of FHL and FDL is a rare occurrence. Understanding the etiology and respecting the soft tissue is one of the utmost important as the saying goes "prevention is better than cure". Various approaches has been documented. As in our patient, we recommend midfoot approach and Z-plasty without release of adhesion due to its simplicity, less risk of neurovascular injury and little chance of recurrence.