Treatment of Flexible Lesser Toe Deformities

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KEYWORDS

• Forefoot • Lesser toe • Claw toe • Hammer toe • Percutaneous

KEY POINTS

- The clinical descriptions of hammer toes, claw toes, and mallet toes are poor and inconsistent.
- Classification of lesser toe deformities must be done using both clinical and radiological evaluation.
- First-line treatment of flexible toe deformities should be based on a combination of special orthoses, taping, or strapping to improve toe alignment.
- Percutaneous tenotomies and/or osteotomies are mainly appropriate according to morphologic criteria (à la carte) but also according to etiologic and reducibility criteria.

INTRODUCTION

Lesser toe deformities are among the most common complaints presented to foot and ankle specialists.[1,2] However, there is great variety within this clinical entity. For every specific type of deformity, there could be a combination of soft tissues and bony procedures, chosen à la carte by the surgeon, according to the surgeon's preferences.

Understanding local anatomy and pathophysiology is essential to address these deformities correctly.[1–3] The deformities could be part of a rheumatologic syndrome (such as rheumatoid arthritis), neurologic involvement (such as cerebral palsy or Charcot-Marie-Tooth), or most commonly are a consequence of mechanical overload. They also can appear as isolated entities or be associated with other deformities of the hallux, midfoot, or hindfoot.

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When there is no neurologic involvement, most claw toe deformities usually follow a known sequence: the hyperextension at the metatarsophalangeal (MTP) joint, (mostly caused by a local overload) leads to a change of center of rotation, which generates a muscular imbalance within the joints between intrinsic and extrinsic muscles[2,4,5] (**Fig. 1**). This muscular imbalance leads to MTP hyperextension associated with flexion of proximal and/or distal interphalangeal (DIP) joints as extrinsic muscles overpower the intrinsic muscles.

This movement can be accompanied by lateral or medial deviation as the deformities progress, potentially caused by capsular attenuation. Chronic deformities tend to become rigid, and footwear may worsen clinical smptoms.[1,4]

CLASSIFICATION

The definitions of hammer toe, claw toe, and mallet toe have been, and continue to be, the most confusing area of pathology for those involved with foot and ankle care.[6]

The word claw is used in most countries. The usual definition of claw is a pointed and curved element at the end of the legs or fingers of some mammals (lion, cat, tiger), birds of prey (hawks, falcons), and some reptiles; it is also often used in reference to invertebrates (eg, scorpions, clamps crabs, and lobsters).

Between hammer toes, claw toes, and mallet toes, the descriptions of the deformities are poor and discordant.[1,7,8] The clinical, radiographic, and morphologic criteria are important to analyze to determine the correct surgical procedure for each patient. For improved surgical planning, the authors propose a new international classification that is currently being validated within the French Association of Foot and Ankle surgeons (AFCP) (**Table 1**).

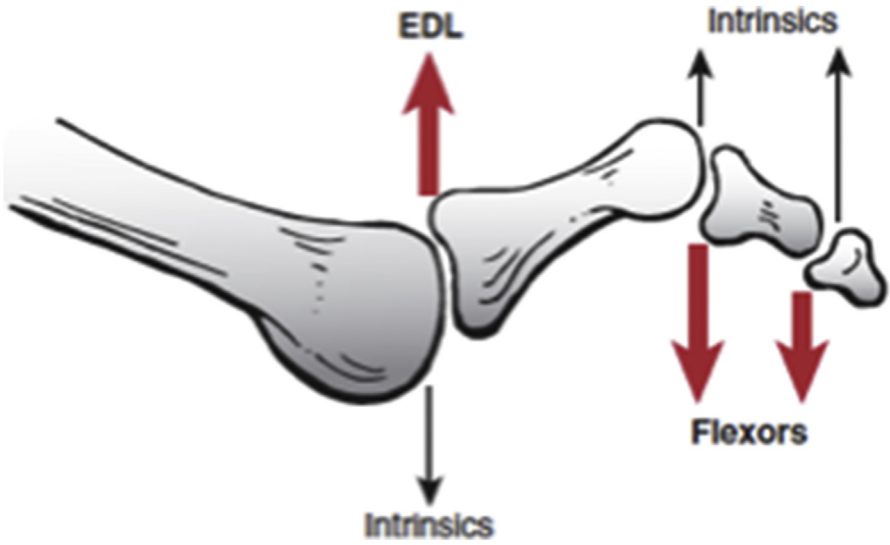

Fig. 1. The muscular unbalance leads to MTP hyperextension associated with flexion of proximal and/or distal interphalangeal joints, as extrinsic muscles (extensor digitorum longus [EDL], flexor digitorum brevis [FDB], and flexor digitorum longus [FDL]) dominate the intrinsic ones.