

Hallux Valgus

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KEYWORDS

• Bunion • Hallux valgus • Metatarsus primus varus

KEY POINTS

- Hallux valgus is a common progressive forefoot deformity that affects women more commonly than men.
- Tight-fitting and high-heeled shoes, gender, and genetics seem to be the most important predisposing factors.
- Treatment consists of footwear modification and surgical procedures, depending on the patient's symptoms and the severity of the deformity.
- Radiographic evaluation must include weight-bearing radiographs.

INTRODUCTION

Hallux valgus is the most common problem of the forefoot in adults.¹ The deformity of hallux valgus is progressive, and involves several stages, but begins with lateral deviation of the great toe (hallux) and medial deviation of the first metatarsal (metatarsus primus varus).² In its later stages, hallux valgus involves progressive subluxation of the first metatarsophalangeal (MTP) joint.¹ The cause of hallux valgus has been debated for years, but is likely associated with genetic predisposition, restrictive footwear, other foot deformities such as pronation of the hindfoot³ and pes planus (flatfoot),¹ hypermobility, contracture of the Achilles tendon, and neuromuscular disorders such as cerebral palsy and stroke.^{4,5} No association has been made between hallux valgus and either obesity or occupation (except for ballet dancing).^{1,6,7}

Adults are more commonly affected than children, although juvenile hallux valgus does occur. Women are diagnosed more frequently than men, with a ratio as high as 15:1 in some studies,⁸ and require surgery more often, which is thought to be associated with differential use of tight-fitting and high-heeled shoes. Women also tend to have higher rates of ligamentous laxity and different bony anatomy that may play a role.⁹

Disclosures: None.

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Symptoms of hallux valgus include poor-fitting shoes, plantar foot pain, medial first MTP joint pain, deep MTP aching pain from joint degeneration, and pain with weight bearing.

Management of hallux valgus generally begins with conservative (nonoperative) treatment, especially in juvenile hallux valgus, the elderly, or patients with significant comorbidities. Conservative modalities include avoidance of tight-fitting, high-heeled shoes; wearing wide-toed soft footwear; use of various inserts/pads; and physical therapy. Surgical correction is indicated in situations of failed nonoperative management, progressive, painful deformity, and disruption of lifestyle and/or activity.

DIAGNOSIS

Evaluation of the patient with suspected hallux valgus should include a thorough history, including any pertinent family history; physical examination; and radiologic examination with weight-bearing radiographs. History should focus on duration of symptoms, activity modification, footwear, and types of any previous interventions. Physical examination must include observation of gait, alignment, and range of motion of the first MTP joint and of both lower extremities, and examination of the bare feet both with weight bearing and without. Special attention should be paid to type and wear pattern of footwear; specific areas of pain and tenderness; the presence of calluses or corns; deformities of the lesser toes, midfoot, or hindfoot; laxity of the first ray (from the great toe to the hindfoot); the presence of a large bunion; and the presence or absence of Achilles tightness.

PATHOGENESIS/PROGRESSION

The first ray bears a significant amount of weight as it maintains the position of the medial arch.¹⁰ Any deformity that disrupts the integrity of the first ray can lead to hallux valgus.⁵ As seen in **Table 1**,⁵ there is a series of steps in the progression of hallux valgus, but the steps are not necessarily followed in a specific order. Because the medial structures of the first MTP joint are weak, including the medial collateral ligament and the medial sesamoid bone, they tend to fail first.¹¹ The metatarsal head eventually drifts medially, the proximal phalanx shifts into valgus, the bursa of the medial eminence becomes inflamed and prominent, and the extensor hallucis longus and flexor hallucis longus tendons bowstring laterally, exaggerating the deformity.^{5,12,13}

Table 1

The multiple steps that are involved in the progression of hallux valgus (not necessarily in order)

Potential Causes of Hallux Valgus	
Extrinsic Factors	Intrinsic Factors
Footwear (high heels, narrow shoes)	Genetics
Excess weight bearing	Sex (female>male)
	Ligamentous laxity
	Other foot deformities (pes planus, hindfoot pronation, metatarsus primus varus)
	Age
	Neuromuscular disorders (eg, cerebral palsy, stroke)

Data from Perera AM, Mason L, Stephens MM. The pathogenesis of hallux valgus. *J Bone Joint Surg Am* 2011;93(17):1650–61.

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