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Clinical Practice Guideline on the Diagnosis and Treatment of Hallux Valgus

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Abstract

Hallux Valgus (HV) is a condition with high prevalence in the general population that can cause important consequences in terms of pain and limitation in activities of daily living. Besides, HV surgery is a frequent surgical procedure that impose significant surgical and medical costs including implants, hospital expenses, used drugs and period of sick leave, in addition to the increased overall costs that could involve its poor management.

The management of this pathology is barely unified in the current literature whilst there are many and varied surgical techniques (more than 100 described), the indications of which overlaps in many cases, leaving unclear as to what is the best approach to the treatment of this problem globally. In addition, there is no level 1 evidence available to prove which is the best option for each particular patient.

It is therefore necessary to create standard format to be adopted in each clinical scenario and set out the standards to guide that process.

This article aims to propose a clinical practice guideline that covers all types of HV in the population as a whole and that can be used systematically in each case. A flow chart is detailed with the preference of the surgical technique on a case-by-case basis and a clinical pathway is drawn on the management of this condition including all professionals involved from the first assessment to the final discharge.

Keywords: *Hallux valgus, clinical pathway, practice guideline, surgical technique, management.*

Back Ground

Hallux Valgus (HV) IS the lateral deviation of the big toe along with medial angulation of the first metatarsal. It is different from bunion, exostosis on the medial aspect of the head of the first metatarsal.

Its cause is still unknown, although extrinsic causes have been described mainly tight footwear and also intrinsic ones, as pronation of the hind foot, flat foot, elevated intermetatarsal angle, contracture of the Achilles tendon, generalized joint laxity and hypermobility of the first cuneometatarsal (CMT) joint. Genetics can also be a factor to be considered.

The Hallux Valgus Angle (HVA) is formed by the longitudinal axis of the first metatarsal and the proximal phalanx of the big toe. The Intermetatarsal Angle (IMA) is formed by the longitudinal axis of the first two metatarsals. An HVA less than or equal to 15 degrees and an IMA less than or equal to 9 degrees are considered normal.

Conservative treatment is attempted when it is first diagnosed. The surgical treatment is put into practice when there are difficulties with the footwear, the function is affected or there is pain around the first metatarsophalangeal joint, not improved with orthopaedic treatment.

There are many surgical techniques for the treatment of hallux valgus which makes us suspect that there is still no ideal technique that could be used in all cases. The evidence of the effectiveness of the treatments is very limited. There are no randomized comparative studies that confirm the superiority of one treatment over another.

Therefore, a clinical practice guide that systematizes and improves the treatment of this condition in our environment is proposed.

Clinical Presentation

It is characterized by pain, little tolerance to walking and chronic history of valgus deviation of the first toe as well as supination, forming therefore the bunion (serous bursa in the head of the first metatarsal), which makes footwear difficult.

Radiologic Assesment

The radiographic evaluation is carried out by means of pre- and postoperative AP and lateral weight-bearing views of both feet.

The following parameters are measured in the anterior posterior view:

- Medial prominence of the head of the first metatarsal.
- Articular metatarsophalangeal (MTP) space and degree of osteoarthritis.
- HVA.
- IMA.

In the lateral view, the type of foot is measured (normal, flat or cavus).

Medical Treatment

Given that it is a progressive disease, conservative treatment has poor results, since there is a dislocation of the elements of the joint that are fixed by the corresponding tendons, which are in an anomalous position.

In cases in which pain and deformity are minimal, conservative treatment with NSAIDs and analgesics, day and night splintsor insoles (orthoses) with a retrocapital support for the correction of transverse arch weakness should be carried out, as well as the application of physical therapy and foot exercises to improve muscle strength at home or in specialized centers. Orthoses are considered to be the most effective treatment in early stages.

Surgical Treatment

Surgical techniques for the treatment of HV are very numerous. In general, they can be divided into 4 groups: arthrodesis, arthroplasties, osteotomies and soft tissue surgery.

Many of these techniques have obtained satisfactory results, although the key to avoiding recurrences is correcting the metatarsus primus varus. We agree with some authors that simple bunionectomy and medial capsulorrhaphy can correct 4 degrees maximum, which it is insufficient in many cases.

The fundamental variables that will lead us towards one technique or another are the following:

- CMT instability.
- MTPosteoarthritis (OA).
- Age.
- IMA.
- HVA.

In this clinical guide, the following flow chart of surgical techniques is proposed:

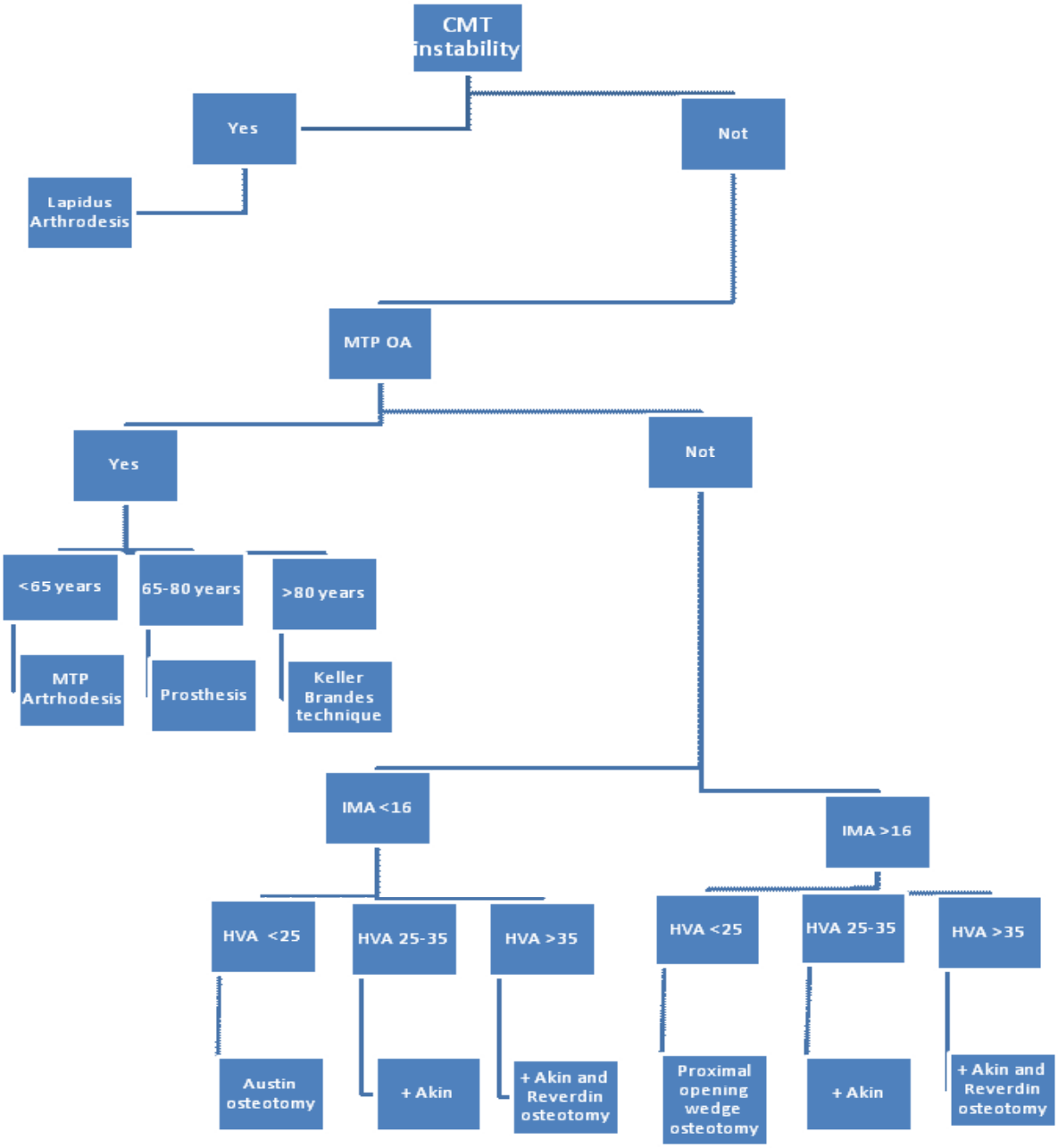

Fig 1. *Proposed flow char of Hallux valgus surgical techniques.*

All techniques are associated with a bunionectomy and medial capsulorrhaphy.

Osteotomies should also include a lateral release.

Postoperative Management

Osteotomies are stabilized with different types of bandages, necessary orthopaedic footwear is ordered and a postoperative control radiography is performed.

In distal surgeries, generally, total or partial loading will be allowed with flat or inverted heel shoes, respectively; and in proximal osteotomies, load will be avoided by heel weight bearing shoes.

In principle, hallux valgus surgery should be included within the orthopaedic services portfolio in the CMA unit, since it considerably reduces health expenditure and, in turn, offers the patient adequate surgical care and reduces the emotional effects infamily.

Follow Up

Patients are commonly reviewed in outpatient clinic 3 weeks after surgery for surgical wound supervision, suture and orthosis removal if necessary,

and commencement of physical therapy. Subsequent appointments are given every 4 weeks to monitor bone healing, clinical improvement, etc.

Outcome Evaluation

Quantitative

Restoration of normal Hallux angles, osteotomies healing and alignment of the foot are checked radiologically and clinically.

Qualitative

The decrease of the pain, the disappearance of the bunion, an adequate joint balance and the disappearance of the hyperkeratosis if it exists, are confirmed.

Patient Discharge

It is decided on the basis of degree of patient satisfaction and reintegration to activities of daily living.

ANNEX 1

Flow chart of all-round care in Hallux Valgus surgery:

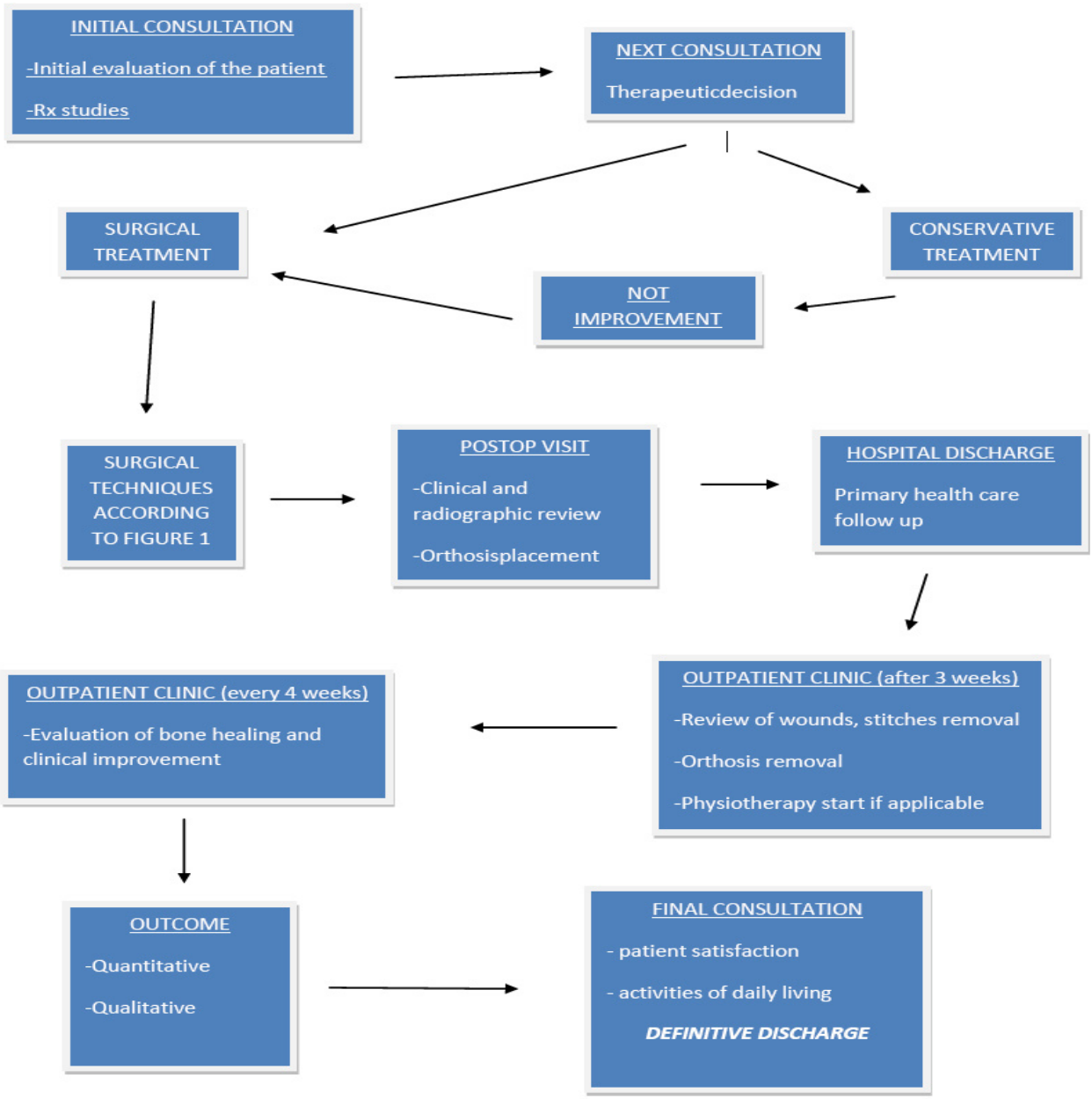

Fig 2. *Flow chart of all-round care in Hallux Valgus surgery.*

References

[1] Akin OF. The treatment of hallux valgus: a new operative procedure and its results. Med Sentinel. 1925;33:678–679.

[2] Austin DW, Leventeen EO. A new osteotomy for hallux valgus. Clin Orthop. 1981;157:25–30.

[3] Brandes M. Zur operativen Therapie des Hallux valgus. Zbl Chir. 1929;56:2434–2440.

[4] Coughlin MJ, Roger A, Mann Award. Juveline hallux valgus: etiology and treatment. Foot Ankle Int. 1995;16:682–697.

[5] Ferrari J, Higgins JP, Prior TD. Interventions for treating hallux valgus (abductovalgus) and bunions. Cochrane Database Syst Rev. 2004 1 CD000964. Review. Update in: Cochrane Database Syst Rev 2009; (2): CD000964.

[6] Keller WL. The surgical treatment of bunions and hallux valgus. NY Med J. 1904;80:741–742.

[7] Kumar S, Pradhan R, Rosenfeld PF. First metatarsophalangeal arthrodesis using a dorsal plate and a compression screw. Foot Ankle Int. 2010;31:797–801.

[8] Lapidus PW. Operative correction of metatarsus varus primus in hallux valgus. Surg Gynecol Obstet. 1934;58:183–191.

[9] Mann RA, Coughlin MJ. Hallux valgus: etiology, anatomy, treatment and surgical considerations. Clin Orthop. 1981;157:31–41.

[10] Mann RA, Rudicel S, Graves SC. Repair of hallux valgus with a distal soft-tissue procedure and proximal metatarsal osteotomy. A long-term follow-up. J Bone Joint Surg Am. 1992;74:124–129.

[11] McBride ED. The McBride bunion hallux valgus operation. J Bone Joint Surg 49A:1675–1683, 1967.

[12] Merkle PF, Sculco TP. Prosthetic replacement of the first metatarsophalangeal joint. Foot Ankle 9:267–271, 1989.

[13] du Plessis M, Zipfel B, Brantingham JW, et al. Manual and manipulative therapy compared to night splint for symptomatic hallux abducto valgus: an exploratory randomised clinical trial. Foot (Edinb) 2011;21:71–78.

[14] Torkki M, Malmivaara A, Seitsalo S, Hoikka V, Laippala P, Paavolainen P. Hallux valgus: immediate operation versus 1 year of waiting with or without orthoses: a randomized controlled trial of 209 patients. Acta Orthop Scand. 2003;74:209–215.

[15] Weil LS, Pollak RA, Goller WL. Total first joint replacement inhallux valgus and hallux rigidus. Long-term results in 484 cases. Clin Podiatry 1:103–129, 1984

[16] Wülker N, Suckel A. Osteotomien des Mittelfußesbeim Hallux valgus. Orthopäde. 2005; 34: 726–734. Mc Bride ED. A conservative operation for bunions. J Bone Joint Surg. 1928;10:735–739. Sammarco GJ, Idusuyi OB. Complications after surgery of the hallux. Clin Orthop Relat Res. 2001;391:59–71.

[17] Zettl R, Trnka HJ, Easley M, Salzer M, Ritschl, P. Moderate to severe hallux valgus deformity: correction with proximal crescentic osteotomy and distal soft-tissue release. Arch Orthop Trauma Surg 120:397–402, 2000.

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