

Surgery was more effective than orthosis for hallux valgus

Torkki M, Malmivaara A, Seitsalo S, et al. **Surgery vs orthosis vs watchful waiting for hallux valgus. A randomized control trial.** JAMA. 2001 May 16;285:2474-80.

QUESTION

In patients with hallux valgus, what are the effectiveness and cost of surgical, orthotic, and no treatment?

DESIGN

Randomized (allocation concealed*), blinded (outcome assessors),* controlled trial with 1-year follow-up.

SETTING

4 hospitals in a health district in Finland.

PATIENTS

211 patients who had painful bunion with the hallux valgus angle $\leq 35^\circ$ and the intermetatarsal angle $\leq 15^\circ$. Exclusion criteria were previous bunion surgery, hallux rigidus, hallux limitus, rheumatoid arthritis, use of foot orthoses, pregnancy, or age > 60 years. Baseline data were obtained for 209 patients (mean age 48 y, 92% women). Follow-up was 98% and 97% at 6 and 12 months, respectively.

INTERVENTION

Patients were allocated to surgery (chevron procedure) ($n = 71$), foot orthosis (negative cast technique) ($n = 69$), or watchful waiting (control) ($n = 69$).

MAIN OUTCOME MEASURES

Duration of foot pain, foot-pain intensity (100-mm visual analog scale [VAS]: 0 = no pain, 100 = unbearable pain), ability to work (VAS: 0 = inability to work, 100 = maximum working ability), cosmetic disturbance (7-point scale: 0 = no cosmetic disturbance, 6 = maximum cosmetic disturbance), foot-

wear problems (none to severe), functional status (American Orthopaedic Foot and Ankle Society score: 0 to 100; higher score = better functional ability) (12 mo only), patient global assessment (12 mo only), and foot care costs.

MAIN RESULTS

At 6 months, patients who received surgery or orthoses had less foot pain than did patients who received no treatment. Surgery-group patients had less cosmetic disturbance and fewer footwear problems than did patients who received either no treatment or orthoses. At 12 months, surgery-group patients had fewer days with pain in the previous 6 months, less pain and cosmetic disturbance, better functional status, and fewer footwear problems ($P < 0.01$) than either of the other 2 groups (Table). More surgery and orthosis-group patients reported better

global foot assessment than did patients who received no treatment ($P < 0.01$). Mean costs related to foot care were higher in the surgery group than in the orthosis and control groups (US \$930, \$221, and \$125, respectively, over 12 mo).

CONCLUSION

In patients with mild or moderate hallux valgus, surgery had greater long-term effectiveness than did orthotic treatment but was associated with greater costs.

Sources of funding: Finnish Office for Health Technology Assessment; Finnish Medical Foundation; Scientific Foundation of Jorvi Hospital; Scientific Foundation of Mehiläinen Hospital.

For correspondence: Dr. M. Torkki, Department of Orthopaedic Surgery, Helsinki University Central Hospital, Topeliuksenkatu 5, 00260 Helsinki, Finland. FAX 358-9-47187551. ■

*See Glossary.

Surgery, foot orthosis, or watchful waiting (control) for hallux valgus at 12 months†

Outcomes	Difference in adjusted group mean (95% CI)	
	Surgery vs control	Surgery vs orthosis
Pain in past 6 mo (d)	22 (1 to 42)	34 (14 to 55)
Pain intensity (100-mm VAS)	19 (10 to 28)	14 (5 to 22)
Cosmetic disturbance (7-point scale)	1.2 (0.6 to 1.8)	1.4 (0.8 to 2.1)
AOFAS score (0 to 100)	11 (7 to 16)	11 (7 to 15)

Comparisons	Event rates	RBI (CI)	NNT (CI)
No footwear problems	Surgery vs control	35% vs 7.5%	386% (108 to 1079)
	Surgery vs orthosis	35% vs 4.5%	710% (179 to 2352)

†AOFAS = American Orthopaedic Foot and Ankle Society; VAS = visual analog scale. Other abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article.

COMMENTARY

Bunions range in severity from mild to severe anatomic deformity of the hallux valgus angle, intermetatarsal angle, and sesamoids (1). Shoe modification is the first treatment considered for persons with symptomatic bunions. Adults with bunions of mild-to-moderate severity may be candidates for orthotic treatment or surgical correction.

In this carefully done trial, Torkki and colleagues have shown that chevron osteotomy resulted in less pain, better function, improved cosmesis, and fewer footwear difficulties during the 12-month study period than did orthosis or watchful waiting. The authors noted 1 infection, 1 fracture, 1 nerve injury, and 1 recurrence after 97 osteotomies (without fixation or lateral release) but no avascular necrosis.

Custom orthotics should be considered for patients with symptomatic mild-to-moderate bunion deformity. Chevron osteotomy provides relief

of symptoms in this population but should be avoided in patients with severe bunions or in those with marked pronation of the great toe, joint incongruity, or tight adductors. Kwire fixation may decrease the recurrence rate. Lateral release may cause avascular necrosis (2). Surgeons must carefully consider all abnormalities. Proximal osteotomy and soft-tissue procedures may be required to correct the deformity.

*Hans J. Kreder, MD, MPH
University of Toronto
Toronto, Ontario, Canada*

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