

Literatur zum Artikel

Therapie der Skaphoidpseudarthrose: Standards und Evidenz

1. Symes TH, Stothard J (2011) A systematic review of the treatment of acute fractures of the scaphoid. *J Hand Surg Eur* 36: 802–810
2. Larsen CF, Brondum V, Skov O (1992) Epidemiology of scaphoid fractures in Odense, Denmark. *Acta Orthop Scand* 63: 216–218
3. Prosser GH, Isbister ES (2003) The presentation of scaphoid non-union. *Injury* 34: 65–67
4. Bickert B, Kremer T, Kneser U (2014) Operative Therapie der Scaphoidpseudarthrose. *Obere Extremität* 9: 271–275
5. Stecher W (1937) Roentgenography of the carpal navicular bone. *AJR Am J Roentgenol* 37: 704–705
6. Schmitt R, Lanz U (2014) *Bildgebende Diagnostik der Hand*. Thieme, Stuttgart
7. Xiong L, Harhaus L, Heffinger C, et al (2015) A comparative study on autologous bone grafting combined with or without posterior interosseous nerve neurectomy for scaphoid nonunion treatment. *J Plast Reconstr Aesthet Surg* 68: 1138–1144
8. Dittler S, Kneser U, Gazyakan E, et al (2015) Konventionelle Knochentransplantate vs. chirurgische Angiogenese. *CHAZ* 16: 135–141
9. Asmus A, Lautenbach M, Schacher B, et al (2016) Skaphoidpseudarthrose. *Orthopädie* 45: 951–965
10. Gelberman RH, Menon J (1980) The vascularity of the scaphoid bone. *J Hand Surg* 5: 508–513
11. Cooney WP 3rd, Dobyns JH, Linscheid RL (1980) Nonunion of the scaphoid: analysis of the results from bone grafting. *J Hand Surg* 5: 343–354
12. Zaidemberg C, Siebert JW, Angrigiani C (1991) A new vascularized bone graft for scaphoid nonunion. *J Hand Surg* 16: 474–478
13. Ozalp T, Oz C, Kale G, Erkan S (2015) Scaphoid nonunion treated with vascularized bone graft from dorsal radius. *Injury* 46 (Suppl 2): S47–52
14. Jones DB Jr, Burger H, Bishop AT, Shin AY (2008) Treatment of scaphoid waist nonunions with an avascular proximal pole and carpal collapse. A comparison of two vascularized bone grafts. *J Bone Joint Surg Am* 90: 2616–2625
15. Jones DB Jr, Burger H, Bishop AT, Shin AY (2009) Treatment of scaphoid waist nonunions with an avascular proximal pole and carpal collapse. Surgical technique. *J Bone Joint Surg Am* 91 (Suppl 2): 169–183
16. Jones DB Jr, Moran SL, Bishop AT, Shin AY (2010) Free-vascularized medial femoral condyle bone transfer in the treatment of scaphoid nonunions. *Plast Reconstr Surg* 125: 1176–1184
17. Sakai K, Doi K, Kawai S (1991) Free vascularized thin corticoperiosteal graft. *Plast Reconstr Surg* 87: 290–298
18. Doi K, Oda T, Soo-Heong T, Nanda V (2000) Free vascularized bone graft for nonunion of the scaphoid. *J Hand Surg* 25: 507–519
19. Hertel R, Masquelet AC (1989) The reverse flow medial knee osteoperiosteal flap for skeletal reconstruction of the leg. Description and anatomical basis. *Surg Radiol Anat* 11: 257–262
20. Burger HK, Windhofer C, Gaggli AJ, Higgins JP (2013) Vascularized medial femoral trochlea osteocartilaginous flap reconstruction of proximal pole scaphoid nonunions. *J Hand Surg* 38: 690–700
21. Kremer T, Heffinger C, Harhaus-Wähner L, et al (2014) Der vaskularisierte Knochentransfer zur Therapie von Skaphoidpseudarthrosen. *Obere Extremität* 9: 252–259
22. Gebauer D, Mayr E, Orthner E, Ryaby JP (2005) Low-intensity pulsed ultrasound: effects on nonunions. *Ultrasound Med Biol* 31: 1391–1402
23. Nolte PA, van der Krans A, Patka P, et al (2001) Low-intensity pulsed ultrasound in the treatment of nonunions. *J Trauma* 51: 693–702
24. Farkash U, Bain O, Gam A, et al (2015) Low-intensity pulsed ultrasound for treating delayed union scaphoid fractures: case series. *J Orthop Surg Res* 10: 72
25. Merrell GA, Wolfe SW, Slade JF 3rd (2002) Treatment of scaphoid nonunions: quantitative meta-analysis of the literature. *J Hand Surg* 27: 685–691
26. Hirche C, Xiong L, Heffinger C, et al (2017) Vascularized versus non-vascularized bone grafts in the treatment of scaphoid non-union. *J Orthop Surg* 25: 2309499016684291
27. Hirche C, Heffinger C, Xiong L, et al (2014) The 1,2-intercompartmental suprapretinacular artery vascularized bone graft for scaphoid nonunion: management and clinical outcome. *J Hand Surg* 39: 423–429
28. Wolf J, Behr B, Heffinger C, et al (2014) Langzeitergebnisse der Therapie der Skaphoidpseudarthrose mit dem vaskularisierten Radiusspan auf Basis der 1,2-ICSR-Arterie. *Obere Extremität* 9: 243–251
29. Sauerbier M, BA, Ofer N (2009) Gestielte vaskularisierte Knochentransplantate von der St zur Skaphoidrekonstruktion recksseite des peripheren Speichenendes. *Operat Orthop Traumatol* 21: 373–285
30. Tsai TT, Chao EK, Tu YK, et al (2002) Management of scaphoid nonunion with avascular necrosis using 1, 2 intercompartmental suprapretinacular arterial bone grafts. *Chang Gung Med J* 25: 321–328
31. Malizos KN, Zachos V, Dailiana ZH, et al (2007) Scaphoid nonunions: management with vascularized bone grafts from the distal radius: a clinical and functional outcome study. *Plast Reconstr Surg* 119: 1513–1525
32. Chaudhry T, Uppal L, Power D, et al (2017) Scaphoid nonunion with poor prognostic factors: the role of the free medial femoral condyle vascularized bone graft. *Hand* 12: 135–139
33. Aibinder WR, Wagner ER, Bishop AT, Shin AY (2017) Bone grafting for scaphoid nonunions: is free vascularized bone grafting superior for scaphoid nonunion? *Hand* 1: 1558944717736397
34. Amadio PC, Berquist TH, Smith DK, et al (1989) Scaphoid malunion. *J Hand Surg* 14: 679–687
35. Mayr E, Rudzki M-M, Rudzki M, et al (2000) Beschleunigt niedrig intensiver, gepulster Ultraschall die Heilung von Skaphoidfrakturen? *Handchir Mikrochir Plast Chir* 32: 115–122
36. Ricardo M (2006) The effect of ultrasound on the healing of muscle-pediculated bone graft in scaphoid non-union. *Int Orthop* 30: 123–137
37. Rubin C, Bolander M, Ryaby JP, Hadjiargyrou M (2001) The use of low-intensity ultrasound to accelerate the healing of fractures. *J Bone Joint Surg Am* 83: 259–270