

Lunate Grafting Into the Radius for Lunate Fossa Reconstruction in Madelung Deformity

Ricardo Kaempf de Oliveira, MD,*† Pedro José Delgado, MD,‡ Samuel Ribak, MD, PhD,§|| Jayme Augusto Bertelli, MD, PhD,¶ Fabiano da Silva Marques, MD#

A 40-year-old woman presented with Madelung deformity and severe arthritic changes at both the radiocarpal and the distal radioulnar joints. She was treated by using her lunate as an osteochondral graft into the radius allowing reconstruction of the lunate fossa. The scaphoid and triquetrum were removed concomitantly and a Sauve-Kapandji procedure was performed. Complete bone healing was achieved. Ten years later, an excellent functional result was maintained, with a pain-free wrist, an acceptable wrist joint range of motion, as well as a favorable aesthetic appearance. This procedure may be indicated for patients with severe Madelung deformity with painful radiocarpal and distal radioulnar joints associated with severe arthritis changes. (*J Hand Surg Am.* 2018;■(■):1.e1-e5. Copyright © 2018 by the American Society for Surgery of the Hand. All rights reserved.)

Key words Madelung deformity, radius dysplasia, Madelung disease, lunate grafting, wrist deformity.



THE DEFORMITY FIRST DESCRIBED by Otto Madelung consists of a congenital growth defect of the ulnar and volar portions of the distal radius, causing a deformity characterized by radial shortening and bending toward the palmar and ulnar regions, often associated with volar subluxation of the carpus.¹ Such anatomical abnormalities can produce a wide variety of symptoms, and cases of severe deformity, disability and pain are usually surgically treated. Most patients are treated during their adolescence, most commonly

females between the ages of 6 and 13 years, when the physal plate is still open.² The dome-shaped, distal radius metaphyseal osteotomy procedure, associated with Vickers' ligament resection,³ is used for those patients. This procedure is not recommended when skeletal maturity is reached, particularly when degenerative changes at the distal radioulnar joint (DRUJ) and radiocarpal joint are present. Some surgical options are available for adult patients, including corrective osteotomy of the radius, ulnar shortening, and procedures for radioulnar joint salvage, such as the Sauvé-Kapandji procedure and joint replacements.³⁻⁵ None of these procedures, however, are aimed at reconstructing the intra-articular anatomy of the radius. We suggest an intra-articular reconstruction of the distal end of the radius using the lunate bone for reconstruction, together with excision of the scaphoid and triquetrum and the Sauvé-Kapandji procedure.

CASE REPORT

A 40-year-old woman, employed as a clerical worker, presented with pain and bilateral deformity of the wrists. There was no history of previous fractures or

From the *Hand Surgery Department, Hospital Mãe de Deus; the †Department of Hand Surgery, Hospital Santa Casa; the #Department of Orthopaedics, Hospital Santa Casa de Misericórdia, Porto Alegre; the §Department of Hand Surgery, Hospital Nossa Senhora do Paraíso, São Paulo; the ||Department of Hand Surgery, Pontifícia Universidade Católica de Campinas, Campinas; the ¶Department of Orthopaedics, Hospital Celso Ramos, Florianópolis, Brazil; and the ‡Department of Hand and Upper Limb Surgery, Hospital Universitario Montepíncipe, Madrid, Spain.

Received for publication January 2, 2017; accepted in revised form January 22, 2018.

No benefits in any form have been received or will be received related directly or indirectly to the subject of this article.

Corresponding author: Ricardo Kaempf de Oliveira, MD, Rua Leopoldo Bier, 825/301, 90620-100, Porto Alegre, RS, Brazil; e-mail: ricardokaempf@gmail.com.

0363-5023/18/■ ■ -0001\$36.00/0
<https://doi.org/10.1016/j.jhsa.2018.01.014>



FIGURE 1: **A** Anteroposterior and **B** lateral radiographs reveal severe DRUJ and radial lunate fossa–lunate bone degenerative changes (black arrows). **C, D** Computed tomography imaging confirms severe degeneration (black arrows) and shows joint line preservation between the distal lunate bone and the proximal capitate bone (white arrows).

trauma and the patient had no family history of Madelung deformity. The patient reported the onset of deformity at the age of 13, and a subsequent diagnosis of Madelung deformity. She previously sought medical attention and was treated with anti-inflammatory drugs, orthotics, and physiotherapy. The symptoms had worsened over the last 2 years, particularly in the left wrist, with gradual loss of motion and pain. The symptoms related to the right wrist were less prominent. Examination of the left wrist revealed a dorsal bulge on the distal aspect of the ulna, without any evident deformity of the radiocarpal joint. Range of motion was decreased to flexion of 30°, extension of 35°, pronation of 40°, and supination of 30°. Grip

strength on the left was 7.1 kg and on the right 11.3 kg with the Jamar dynamometer (Asimov Engineering Corp, Santa Monica, CA). Radiographs and computed tomography demonstrated the typical features expected in cases of Madelung deformity: severe degeneration between the radial lunate fossa and the lunate bone, and ulnocarpal impingement signs at the DRUJ (Figs. 1, 2).

Following the failure of nonsurgical treatment, proximal row carpectomy together with a Sauvé-Kapandji procedure was recommended.

The procedure was performed through a dorsal longitudinal incision. Complete destruction of the articular cartilage of the lunette fossa was identified.

Download English Version:

<https://daneshyari.com/en/article/8799912>

Download Persian Version:

<https://daneshyari.com/article/8799912>

[Daneshyari.com](https://daneshyari.com)