

Editorial Commentary: “Elbow-to-Elbow” Capitellar Osteochondral Autologous Transplantation for Osteochondritis Dissecans—Are We Closer to the Holy Grail of Osteochondral Graft?



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Abstract: The knee or rib has been used routinely as a donor site for capitellar osteochondral autologous transplantation (osteoarticular transplantation) procedures with promising results. However, donor-site morbidity is a bitter truth that has led surgeons to pursue alternatives to the ipsilateral elbow. The non-articulating radial head and the lateral olecranon tip show acceptable topography and histology. However, size limitations require additional and clinical study.

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The Hippocratic Oath has told us the one and most important thing as a physician is to abstain from doing any harm: *Primum non nocere* (First do no harm). This aphorism has been handed down from generation to generation of trained orthopaedic surgeons as the most commonly used fundamental principle in practicing medicine.

Osteoarticular transplantation (OATS) from a non-weight-bearing chondral surface, first described for focal chondral and osteochondral defects of the knee, has been adapted to treat capitellar osteochondritis dissecans (OCD) lesions.¹ Regarding OATS for large unstable capitellar OCD lesions with closed physes, surgeons harvest osteochondral graft from the non-articulating femoral condyle and costo-osteochondral junction.^{2,3} These options have been considered to offer the closest match to the native cartilage in terms of its curvature and thickness. However, the still bitter truth regarding donor-site morbidity is not to be taken lightly. Basically, the cure should not be worse than the disease itself.

OCD can be a detrimental problem in young adolescents involved in overhead sports. Many of these young athletes undergo OATS to restore the cartilage integrity as one of the factors in returning to sports. In the article “Histologic Analysis of 2 Alternative Donor Sites of the Ipsilateral Elbow in the Treatment of Capitellar Osteochondritis Dissecans,” Bexkens, Hilgersom, Britstra, Savci-Heijink, van den Bekerom, de Boer, and Eygen-daal⁴ seek donor alternatives to decrease graft morbidity issues in a cadaveric model. The study mainly focused on comparing the histologic characteristics of the proposed alternative grafts from the ipsilateral elbow, namely, the non-articulating part of the radial head and lateral olecranon tip. This study confirmed histologic similarities between the native capitellum and the proposed alternative donor sites regarding cartilage thickness and shape (convexity) and cartilage features (cell and matrix morphology). Furthermore, the same research group has shown that the alternative donor sites have an appropriate topographic surface to match the native capitellum in their previous work.⁵ This superior compatibility may ease the healing process or, should I say, is “a match made in heaven.”

The current study by Bexkens et al.⁴ assures us that ipsilateral elbow-to-elbow OATS can be used to minimize donor-site morbidity. It provides valuable results to be applied to a centrally located capitellar OCD, which may eliminate the need to harvest from another source. We still consider the autologous knee-to-elbow transfer

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to be our first choice to treat capitellar OCD owing to its capacity to accommodate a large plug. Furthermore, we have noted that persistent knee pain is not that remarkable (1.6%, or 1 of 62 patients), which also has been shown by a systematic review and meta-analysis by the same research group.⁶ On the other hand, some OCD lesions that are expanding to the lateral capitellar wall will probably become “too big to treat” with “autologous elbow-to-elbow” OATS.⁷ The current findings mean that we have a basis to proceed with in vivo studies to refine the surgical techniques and instrumentation with caution.

Finally, as said before, *Primum non nocere*. Our next query will be “What is the largest osteochondral plug we can obtain from the elbow safely?” Cadaveric studies also must be translated to clinical outcomes to properly evaluate morbidity. We look forward to seeing this work in the near anticipated future!

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