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CORR Insights®: Lateral-compartment Osteophytes are not Associated With Lateral-compartment Cartilage Degeneration in Arthritic Varus Knees

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Where Are We Now?

Patients with medial compartment osteoarthritis who opt for surgical treatment often choose between (1) TKA, (2) unicompartmental knee arthroplasty (UKA), and (3) osteotomy. There is a commonly held belief among knee surgeons that knee radiographs which reveal the presence of

osteophytes in the lateral compartment or in the patella-femoral compartment, reflect arthritic change within those compartments, and therefore, constitute an almost absolute indication for TKA and a contraindication for either UKA or osteotomy. This notion (what I call the “osteophyte myth”) has resulted in subjecting many patients to a TKA who might well have been better served with UKA or osteotomy.

The biology and science of osteophyte formation is complex. It is likely that osteophytes develop as a result of a loss of joint homeostasis. This osteophytic response affects the entire joint not just regions adjacent to arthrosis [3].

The current study by Waldstein and colleagues helps discredit the osteophyte myth. In a series of patients undergoing TKA for medial compartment varus knee arthrosis, the authors search for the presence of degenerative articular cartilage in the lateral compartment of those patients with lateral joint osteophytes. Their search is not trivial. The study questions are stated clearly: Do lateral osteophytes correlate with lateral compartment biomechanical evidence of degeneration of lateral articular cartilage? Answer: No. Do lateral osteophytes correlate with histological evidence of degeneration of lateral articular cartilage? Answer No. This important and well-designed paper helps dispel the myth that osteophytes indicate adjacent degenerative cartilage.

Where Do We Need To Go?

This evidence opens the door to the possible recommendation for alternative surgery to TKA. We need to

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recognize that osteophytes alone do not define the state of adjacent articular cartilage. Disregarding osteophytes adjacent to normal articular cartilage should encourage greater selection of UKA or osteotomy as an alternative to TKA for patients with varus knees and medial compartment arthrosis. One study [2] suggests that the improvement in activity is much greater and residual pain much less in a matched group of patients receiving UKA compared with TKA. Another study by Floerkemeier and colleagues [1] suggests that results after high tibial open-wedge osteotomy are equivalent to UKA. Both operations may have the potential for greater patient satisfaction as we learn more about the fine points of each.

This is an important paper as it provides evidence that perhaps the most commonly used test for evaluating the

severity of arthritis in the asymptomatic compartment of a knee with medial compartment osteoarthritis is invalid and is not supported by their evidence. But in a broader perspective it raises the possibility that osteophytes may not be as useful in classifying arthritic severity as is currently thought.

How Do We Get There?

A careful review of patients undergoing UKA or osteotomy with validated measure of lateral joint osteophytes who subsequently require revision for lateral compartment disease would be a start. However, progression of lateral compartment disease may be due to factors unrelated to osteophytes and revision is often undertaken for unexplained pain, which may be unrelated

to lateral compartment osteoarthritic progression. The conclusion that a single common radiographic finding (osteophytes) is pathognomonic for the presence of disease and predictive of its progression is foolish.

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