Successful Treatment of Thumb Arthritis

When you stop to think about how much you use your thumbs, it's easy to see why the joint where the thumb attaches to the hand can suffer from wear and tear. This joint is called the carpometacarpal or CMC joint. The CMC is the joint that allows you to move your thumb into your palm, a motion called opposition. The CMC joint is sometimes referred to as a "universal joint" because of the wide range of movements possible.

The place where the CMC joint of the thumb attaches to the wrist is at the trapezium bone. This joint is sometimes referred to as the basal joint of the thumb. The CMC or basal thumb joint suffers a lot of stress over the years. This can lead to painful osteoarthritis of this joint that may require surgical treatment as the arthritis progresses.

One of the more successful surgical procedures for CMC joint arthrosis is to remove the trapezium bone completely, a procedure referred to as a trapeziectomy. Taking a bone out of the wrist does leave a space or hole. Surgeons usually put something in that hole to keep the bones from shifting. They may use a tendon graft from the patient or a synthetic (manmade) spacer made of silicone rubber, gelfoam, animal donor tissue, or zirconia.

In this brief review, two hand surgeons from Columbia University in New York City provide an update on the use of nonautogenous spacers. Nonautogenous means the material used was not taken from the patient but rather from a tissue bank (a biologic material) or from one of several synthetic products available.

Nonautogenous products have the distinct advantage of no donor site pain, infection, or other problems that can occur from harvesting the patient's own tissue. Using a nonautogenous source (either synthetic or biologic materials) also reduces surgical time.

But what about the results? How well do they work? Is there an advantage of one type of nonautogenous material over the others? By reviewing the results of studies published in this area, the authors provide surgeons with some data and some guidelines.

Let's take a look at the nonautogenous biologic materials studied. The use of pig skin to fill in the gap (a product called porcine dermal collagen xenograft) often creates an immune reaction as the body recognizes pig skin as foreign (decidedly not human). Efforts to continue researching pig graft as a potential spacer have been dropped.

A human-based product called Graft-Jacket has had some good success. This material is taken from cadavers (human bodies preserved after death for study) and treated in a way to prevent an immune response. This approach works well but there are concerns that there could be disease transmission from the cadaver to the patient. It is also possible that in time the body will find a way to get rid of this tissue.

Surgeons comparing the use of interspacers versus removal of the bone without filling in the gap made a surprising discovery. They found the results were just as good (and often even better) if they just left the gap unfilled. There was less risk of infection, inflammation, and no risk of graft material moving out of the space or spreading disease to the patient.

It is possible that inserting something into the void left by removing the trapezium just isn't necessary. If this is the case, it would be a cost savings with no risk of foreign body reaction. The authors suggest further studies are needed to take a closer look at this phenomenon. Studies comparing autogenous with
nonautogenous grafts would be helpful along with efforts to compare these two approaches with no interspace filling.