



## Online Orthopaedics Manifesto Regarding Arthroscopic Surgery Of The Knee For Arthritis

As a practicing orthopaedic surgeon with considerable experience in the field of arthroscopic surgery I feel compelled to comment from a personal standpoint on the bomb shell, which has exploded on the orthopaedic horizon recently regarding the use of arthroscopic surgery in knees affected by osteoarthritis.

An article was published in the New England Journal of Medicine July 11, 2002 entitled ***"A Controlled Trial of Arthroscopic Surgery for Osteoarthritis of the Knee"***. The New England Journal of Medicine is an extremely prestigious medical journal. The content of the article was picked up immediately by the print media and multiple articles have appeared in the Wall Street Journal, Time magazine, and almost every large daily newspaper that uses the associated press as one of its sources. The article has also been discussed extensively in the professional orthopaedic publications that I receive.

Briefly, the study was conducted at the Houston, Texas V.A. Medical Center and studied one hundred eighty patients with arthritis of the knee. The surgery group received standard arthroscopic treatment for their problem and the placebo group was subjected to skin incisions and did not actually have arthroscopic treatment. None of the one hundred eighty patients knew which group they were in and the people assessing the patients' outcomes were also unaware of the form of treatment.

Outcomes were studied over a twenty-four month period with the use of five self-reported scores, three on scales for pain and two on scales for function, and one objective test of walking and stair climbing.

The American Academy of Orthopaedic Surgeons, of which I am a member, is the largest and most respected orthopaedic surgery organization in the world. It is the leader in all areas of orthopaedic surgery and its integrity is absolutely unquestioned.

The American Academy of Orthopaedic Surgeons responded to the New England Journal of Medicine article stating the following: *"In the recent study on the role of arthroscopy and osteoarthritis of the knee we applaud the authors and the patients who participated in this placebo controlled investigation. Evidence based medicine should be a guiding light in today's health care delivery and this study confirms the conventional orthopaedic wisdom on the limited value of arthroscopic cleansing of arthritic knees."*

*"The strengths of the study include the large size of patient groups, and excellent control group and the long-term patient assessment. The weaknesses include a potential selection bias caused by the number of patients who decided not to participate and the non-specific indications for arthroscopy. Additionally, data were not stratified for body weight, mal-alignment of the knee, and mechanical symptoms that existed. Arthroscopic surgery may relieve mechanical symptoms (buckling, locking) thus delaying the need for more aggressive surgery such as total knee replacement."*

The conclusion of the study stated *"In this controlled trial involving patients with osteoarthritis of the knee, the outcomes after arthroscopic surgery were no better than those after a placebo procedure."*

To a non-medical person reading the Wall Street Journal, Time magazine, or almost any daily newspaper it made arthroscopic surgery for arthritis of the knee appear to be totally worthless.

I am not in any way trying to be defensive about the use of arthroscopic treatment in arthritis of the knee. Before we go any further, you must understand it isn't that easy. It is much more complicated than the articles, at least as written up in the lay press, make it sound. The articles would lead the



casual reader, which would include almost all of our patients, to think that arthroscopic surgery is useless for any type of knee surgery involving arthritis.

One article in a large Michigan daily newspaper declared in its headline:

### **Study: Knee Surgery for Arthritis is Worthless**

The article went on to say that patients who underwent "*fake surgery*" performed better. The article further pointed out that arthroscopic knee surgery for osteoarthritis cost roughly \$5000 or a total of 1.5 billion per year in the United States. It quoted a researcher at the Houston V.A. Medical Center who led the study as saying "*We think that money could be better spent*".

Another article in its headline declared:

### **The Five Thousand-dollar Surgery Your Knees Don't Need: Rethinking Scoping.**

The article said an estimated 650 thousand patients each year undergo arthroscopic surgery for arthritic knees at a cost of \$5000 each or more than 3 billion total for the procedure.

The problem is more complicated than it appears to be in that as I like to refer to it, arthritis is a very large umbrella under which there are many different conditions of the joint, in this case the knee. In fact, most patients call anything around a joint that hurts arthritis. There are many soft tissue conditions of inflammation, which can be very painful and to most patients would seem to be arthritis. They almost always refer to these painful conditions as "arthritis". True arthritis is a wearing away of the articular cartilage in the joint, which causes the joint to gradually narrow and the bones to come closer together. This can occur on both sides of the joint that is the inner side and the outer side also referred to as medial and lateral and also in the joint between the femur and the kneecap.

It can occur in one or two of the compartments or all three of them. It usually is not the same degree in each compartment. When the articular cartilage is completely worn down the bones actually begin to touch and there is friction between the bones leading to further acceleration of the deterioration or arthritis process.

To add to the complexity, the menisci or shock absorbers in the joint can also undergo their own degeneration and even tear causing further problems in the joint. There can be loose pieces referred to by patients as bone chips in the joint, and these can cause mechanical blockage as can torn cartilage. We do know that arthritis is more common in women than in men. The exact reason for this is open to speculation.

There is no exact way to gauge the degree of arthritis that a patient has in a particular knee joint. I have found in my experience that the plain x-rays are a guide, but far from a totally reliable guide about the degree of arthritis that a patient may have in the joint. We frequently will take x-rays of the knee with the patient standing and this gives a somewhat better assessment than if the person is lying down because the standing pictures give a truer representation of the remaining articular cartilage. However, many patients with reasonably normal looking knees or perhaps with mild changes at the time of arthroscopic surgery are often noted to have major articular cartilage disease also known as chondromalacia.

Chondromalacia is graded visually at the time of arthroscopic surgery. It has often amazed me how patients will have relatively good looking x-rays and very significant roughness and damage to the articular surface of the joint. Even on MRI studies, which we most always get prior to arthroscopic surgery of the knee, there is a large gap between surface changes in the knee and what the MRI study actually sees. The MRI study is fairly accurate in predicting a torn meniscus or ligament damage, but in many cases will not give a very good picture of the true joint surface.

Often when we are operating, we will be operating for a fairly well demonstrated tear of the meniscus



on MRI. Additionally we often find major chondromalacia changes in the joint, which we were not expecting to, see because we had no way of knowing that these changes were there. Often the symptoms from these chondromalacia changes can overlap with torn meniscus symptoms.

### **Mechanical symptoms**

Many of our patients have what surgeons refer to as mechanical symptoms in the knee. These are symptoms such as the knee locking up or giving way as patients refer to it and these symptoms often come from damage to the meniscus or "cartilage" as patients refer to the structure. A loose piece moving about in the joint can also give locking or give way sensation as can significant rough areas on the surface of the joint. All of these findings can exist with or without "arthritis changes" on plain x-rays.

Most surgeons, including myself, feel fully justified in proceeding with arthroscopic surgery for these symptoms that I have described, even if the patient has some joint changes characteristic of mild arthritis changes in the knee.

**This is a key point.** What is mild arthritis change, what is moderate arthritis change, and what is advanced or severe arthritis change? I think we all know what severe arthritis change is from symptoms, exam, and also the x-rays that we see in the office. Frequently when I am looking at x-rays with patients in the office it is completely obvious to them that they have advanced arthritis of the knee and nothing less than a total knee joint replacement would help them.

On the other hand, they may have some mild narrowing of the joint and some of the mechanical symptoms, which I have previously described. Therefore, technically the patient does have "arthritis" of the knee. The patient also may have a torn meniscus, which has developed in addition to the arthritis changes that have already been present.

**The question exists then do you deny the patient arthroscopic surgery because arthritis exists?**

**According to the study this patient would do just as well if they had a sham operation!**

This of course is ridiculous. Any arthroscopic surgeon knows that patients' symptoms are usually significantly relieved when a definite torn meniscus is found and treated (usually removed). The arthritis changes are observed and in some cases can be helped by what we call a shaving chondroplasty or smoothing of the rough articular surface. This often occurs in the same area as the torn meniscus and/or under the kneecap.

### **Advanced arthritis**

There are very few arthroscopic surgeons who would see a patient in the office with what we usually refer to as advanced arthritis and tell that person that they should have an arthroscopic procedure to try to improve their condition. The reason for this is because the amount of improvement that could be obtained from an arthroscopic procedure would usually be so minimal or so brief in duration that it would be wrong to subject the person to surgery and anesthesia for this minimal improvement.

Therefore, in my practice, I have very well in mind which patients I feel I could help by doing arthroscopic surgery and those who could not be benefited and I tell them this of course when we are evaluating them in the office.

Ultimately each surgeon needs to use his own criteria for patients he feels he can help. Some surgeon's indications for surgery are different than other surgeons. Everyone does not look at things in the same way. There are many factors that should go in to deciding who would benefit from surgery. I do not feel that everyone who comes into my office should have surgery. That is one of the



most difficult parts of surgical practice, to decide who you can help if you recommend surgery and who could not be helped by surgery, and who perhaps should be referred to another surgeon for treatment if you feel someone else could help them. Some surgeon's surgical results are better than other surgeons because they are very skilled in deciding who they can help and who they cannot.

## Management

Osteoarthritis of the knee should be managed in most cases in the following way.

Non operative management before surgery is recommended if the person has not had any treatment before they are seen. Medical treatment including medication and physical therapy might be very helpful to a patient with arthritis of the knee.

If this management is not helpful surgery might be suggested depending on the patient's age and general medical condition. If the arthritis is severe it may be that only a total knee replacement would help the patient. If arthritis appears to be mild and mechanical symptoms exist in the knee, possibly representing a torn meniscus, then arthroscopic surgery might be a reasonable approach.

Also available at this time are agents, which are thought of as a lubrication substance also known as Hyaluronan.

These have been very beneficial in my experience and we have used them extensively in the office in patient's who are having significant pain, but do not desire a total knee replacement.

Please refer to **Hyalgan** and **Synvisc** articles in the *Online Orthopaedics Library* for more information about these substances.

I have treated countless patients with painful arthritis of the knee who do not have mechanical symptoms with these lubrication agents. In **most** cases they do work.

**The key to the successful use of these procedures is careful selection of patients.**

It must be remembered that the study of the one hundred eighty patients at the Veterans Administration Hospital in Houston was looking purely at arthritis. The fact is that osteoarthritis of the knee is only a very small segment of those who have arthroscopic knee surgery and for the much larger group with torn meniscus, ligaments, and other conditions arthroscopic surgery remains effective, less invasive, and more cost effective than other types of surgical treatment.

## Conclusion

I think what the study has done for me, is to examine even more carefully my criteria for which knees should have arthroscopic surgery and which should not. I have never felt that because I am a surgeon everyone who comes to me can be helped by surgery. This can lead to many sub-optimal surgical results and many unhappy patients.

I will continue to assume that those patients who have not been treated by any of the usual means may benefit from conservative treatment of the condition if it is not in a very advanced state. If conservative treatment is not successful then the patient and I will need to mutually decide what other options exist.

We can always make the correct decision for a patient if we treat the patient as an individual and their problem as unique.

I hope that by reading the foregoing you will realize that while the article in the New England Journal of Medicine entitled *"A Controlled Trial of Arthroscopic Surgery for Osteoarthritis of the*



**Knee**" seemed to discredit arthroscopic surgery, you have to view the situation in a larger context.

To carry the conclusion of the article to the point of invalidating the procedure, which has helped so many, gives the public misinformation and is a distinct disservice.

The study must also be viewed in the context that it came from a single group of patients namely veterans with very few women, even though arthritis of the knee is more common in women. Additionally, anyone in their medical training who has worked in a V.A. Hospital realizes that veterans are a unique population in the delivery of health care.

As I said, the problem is not as easy as what it appears nor is it black and white. I hope these thoughts will be somewhat helpful in clarifying the information that most patients will read in the print media.

There has been a very interesting additional development in the controversy concerning arthroscopic surgery of the knee for arthritis.

The Department of Veteran's Affairs issued an advisory on August 14, 2002 to it's Veteran's Administration surgeons that arthroscopic surgery to relieve pain of osteoarthritis in the knee should not be done.

In the August 14 advisory it was stated that the operation is not indicated solely for the relief of pain without clear clinical evidence of significant derangement symptoms due to anatomic and mechanical abnormalities.

That is what I am talking about in the article that precedes this. We certainly also have had the clear impression from doing arthroscopic surgery over many years that those patients whose surgery was done mainly for pain did not always have their pain relieved.

The indication for surgery in the osteoarthritic knee for many surgeons has been pain alone. They have felt that cleaning out the knee so to speak would be of benefit and relieve the patient's pain. It is obvious that arthroscopic surgery has not always done this. The article in the New England Journal of Medicine does make that point clear.

This directive from the Department of Veteran's Affairs could only exist in a controlled situation where the doctors are working for the Veteran's Administration and can be directed to stop doing a procedure.

In private practice there is no such control over surgeons who have different indications for doing surgery.

It will be very interesting, as the problem is studied further, to see what the eventual place will be for arthroscopic surgery in pure osteoarthritis of the knee.



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