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Lead Article

THE PLACE OF SURGERY IN ARTHRITIS THERAPY
A RHEUMATOLOGIST'S PERSPECTIVE

By Norman S. Koval, MD

There are many types of arthritis that progress relentlessly even in the face of expert medical care. Surgery for arthritis is aimed at reconstructing a deformed joint, preventing destruction of a joint, or salvaging a joint from gross deformity. The orthopaedic surgeon will weigh the delicate functional balance between stability of a joint, mobility of a joint and the relief of pain of a joint.

There are several surgical procedures that are available for the treatment of arthritic joints. Arthroplasty is the term used for rebuilding a joint to re-establish stability, motion, and relieve pain. The three types of arthroplasty are outlined below.

Total Joint Arthroplasty - this has become one of the principal techniques for reconstructing arthritic joints. This involves the resurfacing or replacing of both halves of the joint. This is accomplished with the use of a highly polished metal surface opposed to a surface of high density plastic. The materials used in the prosthetic replacements today include chrome, cobalt metal, titanium alloys, and a high density polyethylene plastic. The most successful joints for arthroplastic total joint replacement are the hips and the knees. The prosthetic device may be fixed to the bone with a bone cement (methyl methacrylate cement), or a porous coating may be utilized on the surface of the prosthesis allowing for the ingrowth of bone which eliminates the need for cement. Many hundreds of thousands of knee arthroplasties, as well as hip arthroplasties, are performed in the United States each year. The success rates are very satisfactory for these two procedures.

Hemiarthroplasty - a procedure in which part of the joint is replaced. The prosthesis most commonly used is the Austin-Moore prosthesis which is used in patients who have had fractures of the femoral head and have good hip sockets. With this procedure only one part of the joint is restored.

Resection Arthroplasty - the rebuilding of a joint by removing the adjacent ends of bone that make up the joint. Historically, this was one of the first surgical procedures performed and is now used around the hip for salvage if an infection destroys the hip. A surprisingly good, stable, pain free joint can be achieved with this technique.

Synovectomy - chronic inflammation of the lining of the joint (inflammation of the synovium = synovitis) progressing unchecked, eventually destroys the joint. Synovitis is the hallmark of rheumatoid arthritis and other inflammatory arthritides. The knees, wrists and large knuckles of the hands are suited for synovectomy. This often will provide relief of pain and possibly prevent

rapid progression or deformity of the involved joint.

Arthrodesis - fusion of the bones about the joint. This procedure is performed if there are severe deformities that are not compatible for reconstructive surgery. This procedure is best performed in joints that bear weight such as the ankle or the joints of the midfoot. In these areas motion is not as essential and may be sacrificed for stability and pain relief.

Arthroscopic Surgery - the arthroscope is about the size of a pencil and can be inserted into a joint in order to inspect, remove, or repair structures within the joint. Various instruments can be inserted into the joint and observed by direct visualization through the arthroscope. The principal advantages of arthroscopic surgery are the
low level of post-operative complications and pain and the ability to perform this procedure in an out-patient surgical setting.

Surgery may also be performed on structures next to, rather than directly inside, the joint. Capsulotomy, (the removal of the surrounding capsule of the joint) to release contractures of a joint, ligamentous reconstruction for stretched or torn joints, and excision of osteophytes (bone spurs) that may impede motion and cause pain are examples of such procedures.

Tenosynovectomy - synovium can be found not only in the lining of joints, but also along the tendon sheaths and in bursae. The synovium in rheumatoid arthritis may grow to such a degree that it overgrows, erodes, encircles the tendon, and produces destruction of a tendon to the point where it will rupture. Persistent synovitis in the tendon sheaths which do not respond to medical therapy, including corticosteroid injections, often benefit from early synovectomy to prevent tendon rupture.

Bursectomy - a bursa is a sac-like cavity that is filled with a fluid and is situated at places in the body where friction would otherwise develop. The most common areas for bursitis are the shoulders, elbow pads and outside portions of the hip. Patient's with or without rheumatoid arthritis may develop inflamed bursa in various parts of their body that do not respond to general medical care. The most common bursitis is at the area of the elbow pad. This is usually a cosmetic problem rather than a functional disability. A bursectomy (removal of the bursa) may be performed should the bursitis not respond to standard medical care.

Osteotomy (cutting of bone) is another type of surgery. The surgeon straightens deformed bone resulting in better alignment and therefore reduction of pain.

Tendon Surgery - the tendons that cross a joint and effect motion are subject to rupture or imbalance from the inflammation caused by synovitis (inflammation of the synovium), trauma, or malalignment. Surgery on these tendons can relieve pain and improve the function of a joint. The types of surgery under the heading of tendon surgery are:

Tenotomy (the cutting of the tendon), such as that performed in the Achilles tendon region if one has a tight heel cord (Achilles tendon contraction).

Tenorrhaphy (the repair of a ruptured tendon) which is most commonly performed about the wrist when there is severe rheumatoid arthritis which causes tendon rupture.

Tendon transfer which is the redirecting of an intact tendon from one functional position to another if there has been destruction due to an inflammatory process. Here the transposed tendon picks up the slack caused by the loss of function of a destroyed tendon.

Tenolysis which is the release of a tendon that is deeply imbedded in scar tissue.

Neurolysis is the release of a nerve that has become entrapped around an arthritic joint such as one sees in the entrapment phenomena called carpal tunnel syndrome.

The numerous surgical procedures and artificial joint replacements available extend well beyond the scope of this general review. Surgical intervention has added immeasurably to the health and well-being of the arthritis patient. The rheumatologist and orthopaedic surgeon work in concert to provide a team approach to management of joint disease.

Points on Joints

LYME DISEASE - A Pound of Prevention and an Ounce of Cure
By Evan L. Siegel, MD

Lyme Disease is an infection caused by an organism in the spirochete family, known as Borrelia Burgdorferi. Human infection occurs after the bite of an infected Ixodes Dammini tick, commonly known as a deer tick. Infected deer ticks have become endemic in the greater Maryland area over the last three years. Extensive coverage in the mass media has heightened awareness of this increasingly prevalent, but still relatively uncommon, disease. Even so, there remains a great deal of confusion about the manifestations of Lyme Disease, the likelihood of contracting the disease, the role of blood tests, and the timing and type of therapy required.

The risks of contracting Lyme disease are greatest in the late spring/early summer and late summer/early fall. This is when the infected nymphal and mature deer ticks, respectively, are most likely to be encountered. It si also the time most conducive to forays out of doors, into areas of tall grasses and brush where ticks may be transferred onto human skin. Of note, it takes 24 to 48 hours of continuous attachment for the organism to be transferred from insect to man, so early detection and removal of ticks is one of the most important means of prevention. Only very careful inspection will reveal the nymphal ticks which are dark colored and less than the size of the head of a pin. Pulling straight out with tweezers is the safest and most effective means of removing the tick.

Prevention of tick attachment is still the best method of avoiding Lyme Disease. While it may not always be possible to avoid tick infested areas, thinking ahead and following a few common-sense suggestions may help decrease the risk of being bitten. All of Maryland is now considered endemic for Lyme, but the counties most heavily affected are Anne Arundel, Baltimore and Montgomery in that order. Cases have been reported from every county, however.

Tall grasses, brush, and forest areas should be avoided if possible. When going into these areas, light colored clothing should be worn, so ticks can be seen easily. Long sleeves and pants should be worn, with pant legs tucked into socks. Insect repellent containing permethrin should be sprayed on clothing. If you cannot bear to wear so much clothing in summer, then at least adequate amounts of insect repellent containing DEET should be sprayed on the exposed skin. Children and animals should be examined very closely after they have been in potentially infested areas.

Once a bite has occurred, only a very small percentage of people will become infected, even in endemic areas. Therefore, no prophylactic antibiotics are recommended for tick bites in the prevention of Lyme Disease. The area surrounding the bite should be watched for the typical rash of Stage I Lyme disease known as Erythema Chronicum Migrans.

Lyme Disease is divided by manifestations into three stages, I - III. Stage I disease consists of Erythema Chronicum Migrans (ECM), and sometimes associated fever, fatigue, malaise, lethargy, headache, and other flu-like symptoms. About two-thirds of patients with Lyme

Disease will recall ECM +/- a flu-like syndrome. Erythema Chronicum Migrans is found most typically in the groin, thigh or armpit regions, and appears as a small flat or raised circular red rash which enlarges over a period of days to weeks usually leaving a centrally cleared area. There can occasionally be associated blistering, necrotic, or hive-like lesions. The rash is usually painless, but may itch, burn, or hurt.

Stage II and III Lyme Disease may occur if Stage I goes untreated. These are potentially more dangerous stages of the disease, consisting of neurologic, cardiac, and arthritic manifestations. It is postulated that factors other than just untreated infection, such as a genetic predisposition to an abnormal immune response, may play a role in the progression to late stage Lyme manifestations such as chronic Lyme arthritis. These manifestations and their treatment will be discussed more fully in a more comprehensive article on Lyme in a future issue of Rheumors.

Cure of Stage I Lyme Disease is generally easily accomplished with oral antibiotics, an important reason for early detection and intervention. The drug of choice is Doxycycline, but tetracycline or Ampicillin may be used. It is important to note that for the first two to four weeks Lyme serologies (blood tests) may be negative, and treatment should not be withheld in the face of a typical rash and clinical scenario. It is essential to remember that the diagnosis of Lyme Disease is based on a variety of clinical parameters, of which serologies are only one. Both positive and negative serologies can at times be misleading.

Thus, although we have gained much experience in treating and eradicating Lyme Disease, the best therapy remains never getting it all. In this wonderful warm-weather season of beautiful hikes and country-road walks, please don't forget your grandmother's warning: An ounce of prevention is worth a pound of cure.

Questions & Answers

Q.
I HAVE HEARD THAT FISH OIL MAY HELP MY ARTHRITIS, IS THERE ANY TRUTH TO THIS?

A.
There may be. Studies have shown a decreased incidence of rheumatoid arthritis, heart attack and asthma among certain Eskimo populations whose diets are high in fish oil. Clinical studies of fish oil dietary supplements in Rheumatoid Arthritis have shown modest signs of improvement. Generally, benefit has occurred after several weeks of treatment with high doses of MaxEpa - a commercially available fish oil preparation (up to 20 grams/day). Given the lack of dramatic effects, the expense of this agent and the need to take such large doses, it is premature to recommend fish oil supplements as part of the treatment regimen for Rheumatoid Arthritis. However, it would seem reasonable to increase your fish intake (to 2 or 3 times per week) and thus replace foods high in saturated fats with healthier fare.

Q.
I HAVE RHEUMATOID ARTHRITIS AND TAKE 12 ASPIRIN TABLETS DAILY AS PART OF MY TREATMENT. DOES IT REALLY MATTER WHICH TYPE OF ASPIRIN I TAKE FOR MY ARTHRITIS?

A.
Yes. Not all aspirin is alike. Although plain and buffered aspirins are more rapidly absorbed, when high dose aspirin is given for rheumatoid arthritis, these preparations frequently cause stomach lining irritation, erosion and ulcer. Coated aspirin decreases the risk of stomach erosion by 85%! The coating allows the tablet to bypass the stomach, where it can do direct harm to the stomach lining, and dissolve more safely in the small intestine. Furthermore, not all coated aspirin is effective. Some preparations do not dissolve well and pass whole in the stool. We tend to prefer Ecotrin and disdain the use of generic coated aspirins. In any case, aspirin taken in high doses must be closely supervised. Check with your doctor.

Q.
I HAVE GOUTY ARTHRITIS. I HAVE BEEN ADVISED AGAINST DRINKING ANY ALCOHOL. WHY IS THIS?

A.
Gout is caused by an overabundance of uric acid in the blood which eventually precipitates onto joint cartilage. The person with gout usually has had several years of an elevated serum uric acid. The gouty attack is characterized by the sudden onset of excruciating pain, associated with intense swelling and redness of a joint. The attack usually lasts two to four days with treatment and as long as two weeks without. Alcohol interferes with the excretion of uric acid by the

kidney, which will cause the uric acid level to rise. Since an attack may be precipitated by a recent rise or fall of the serum uric acid level, it is advisable to curtail drinking alcohol.

Rheuminations

ARE YOU A CANDIDATE FOR OUR CLINICAL RESEARCH STUDIES?

Rheumatoid Arthritis (RA) and Osteoarthritis (OA) Patients: Our clinical research division is active with several new studies. We invite you to participate in these potentially beneficial therapies.

RA patients may benefit from an investigational new drug developed as a possible anti-rheumatic therapy. Patients who currently take, or took previously, medications such as Methotrexate, Gold, Penicillamine or other DMARDS without adequate therapeutic effect, may be eligible.

OA patients, look forward to a new study in early September. Patients with a diagnosis of OA of the knee for at least three months, who also take an anti-inflammatory drug, may be eligible to enroll in this 4 week study.

Patients who participate receive office visits, laboratory tests and study medication at no cost.

If you are interested in either of the above studies, or would like more information on these or future studies, ask your ARA physician or call our study coordinator, Shari Hoffman.

Rheuminations

Have you wondered what this label means? You've seen it in our examining rooms and nurses stations, and probably other physician's offices as well. It means that we fully comply with OSHA standards in protecting our staff and our patient's health.

The emblem signifies that the labeled waste has to be disposed of according to very specific standards because it may contain blood or a material that is potentially infectious (such as a bloody gauze pad or a syringe).

Please help us, help you, by using a regular waste basket when you discard any trash or used gowns in our office. Only our doctors and staff should use containers marked with the Biohazard label.

FUN RHEUM

WORD FINDER

Circle the answers that match the clues in the Word Finder.
Answer key is on page .

- Technique to look at bones
- Carries Lyme Disease organism
- Arthritis Treatment that glitters
- Joint pain
- Common term for arthritis
- Crystal arthritis
- SLE
- Named after town in Connecticut
- Early arthritis medicine
- Steroid medication
- Joint swelling
- Skin condition associated with arthritis
- Arthritis, conjunctivitis, skin rash
- Early NSAID, now over the counter
- Thin bones
- Dry mouth and arthritis

A	I	O	S	E	S	G	T	S	C	K	L	G
B	R	S	R	S	Y	K	D	J	C	M	U	L
N	A	T	R	T	N	E	V	O	F	W	P	X
D	B	E	H	G	O	U	T	G	N	O	U	P
R	S	O	E	R	V	N	I	R	I	P	S	A
F	I	P	U	T	I	C	K	E	Y	X	Z	S
G	S	O	M	A	T	T	G	N	Z	R	T	S
U	A	R	A	B	I	D	I	S	Y	A	X	R
I	I	O	T	E	S	G	F	S	G	Y	W	E
Z	R	S	I	M	M	O	T	R	I	N	P	T
K	O	I	S	I	H	L	Y	M	E	J	I	I
P	S	S	M	H	J	D	G	U	V	F	E	E
M	P	R	E	D	N	I	S	O	N	E	D	R

Word Finder Answers

ARTHRITIS
RHEUMATISM
GOUT
GOLD
LUPUS
LYME
ASPIRIN
PREDNISONE
SYNOVITIS
PSORIASIS
REITERS
MOTRIN
OSTEOPOROSIS
SJOGRENS
XRAY
TICK

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