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Therapeutic Injection of PRP

PRP is an abbreviation for **P**latelet **R**ich **P**lasma. Plasma is what's left when blood cells are separated from the liquid component of human whole blood. The plasma portion contains numerous biologic factors that have been shown to enhance healing in animal and human studies. Some of this work dates back to the early 90's. Clotted whole blood has been used and studied for improving the success of meniscus cartilage repair in the knee joint of humans since that time.

At this very moment there are many applications where human serum factors are being used to enhance tissue and bone healing. Reasons for the increased interest in PRP injection therapy for the treatment of tendonitis are:

1. It contains entirely natural products from a patient's own blood.
2. Traditional treatments for tendonitis are unreliable.
 - a. Repeated cortisone injections into tissue can destroy and weaken it
 - b. Cortisone injections into tendons of the lower extremity can lead to rupture of those tendons
 - c. Long term anti-inflammatory pills only mask symptoms and do not heal tissue and often cause gastrointestinal and cardiovascular problems
 - d. The surgical management of tendonitis requires a more significant recovery and also have risks associated with the procedures
3. There is little if any risk for injecting one's own blood product back into their body.

The future of medicine and orthopedics is increasingly looking to gene therapy and utilizing "biologic" solutions to common problems such as bone, ligament, cartilage and tendon healing.

The Food and Drug Administration has approved the use of PRP in other applications within the field of orthopedic surgery. Studies proving the efficacy of PRP injection for the treatment of tendonitis are currently underway and early results are promising. Currently, FDA approval is pending and these injections are considered "off label use". However, this is not an artificial or manufactured product that requires long term safety evaluation. It is not a chemical that was produced in a lab to treat a condition with its inherent short and long term risks. As mentioned, it is merely injection of one's own blood after it has been separated into its different components by spinning it in a centrifuge.

Candidates for PRP injection would be:

1. Adult patients (over the age of 18) who have long standing problems with tendonitis
 - a. who have failed previous treatment
 - b. or have the inability to tolerate oral anti-inflammatory medications due to medical problems or allergies.
2. These candidates should have sufficient symptoms to be considering surgery or repeated injections.

Patients who are **NOT** candidates for PRP injection

1. Patients who are on blood thinners for medical problems such as history of blood clots or atrial fibrillation
2. Patients who are unable to comply with the post procedure instructions of rest and immobilization due to personal or occupational demands
3. Patients who are unable to remain off of aspirin or other anti-inflammatory products before or after the procedure
4. Patients who will not allow removal and injection of blood products into their bodies
5. Patients who are allergic to any of the medications used (marcaine with epinephrine and sodium bicarbonate)

The Procedure

The injection of PRP for tendonitis is an office based procedure. It is scheduled differently from a standard office consultation. 30-50cc's of blood is drawn from the patient's arm. It is prepared and placed in a sterile single use container where it is spun in a high-speed centrifuge. The portion of the blood that contains the platelet rich plasma is drawn off into a syringe. The area to be injected is prepared using standard sterile technique. The area is anesthetized and then anywhere from 3-5cc's of the material is injected into the affected tendon. There is a protocol for aftercare that may involve use of a walker boot, knee brace and crutches for the lower extremity or a sling for the upper extremity. Stretching and light resistance training instructions will be given. Formal physical therapy may follow. Follow up appointments will be at 2 weeks, 6 weeks, 3 months and 6 months. No sports for at least the first 3 months and then activities can be accelerated after that until full return.

Insurance coverage and cost of the procedure may preclude widespread use at this time. Insurance companies are often "skeptical" of new or "unproven" treatments or technology. This is probably a good policy. However, when weighed against the costs, risks and success of traditional treatments available for tendonitis currently, it should not be very controversial to cover this advance in treatment. Still, there is reluctance. At this time, therefore, the procedure is coded as an "unlisted procedure". Insurance contracts do not typically cover those without known procedure codes. The cost of the materials, procedure for procuring blood and injection, as well as the follow up visits for the first 90 days is all included in a single price, which will be on a cash only basis. Formal physical therapy if needed, treatment after the first 90 days, subsequent diagnostic studies, injections, medications or future surgery are **NOT** covered by the fee for this procedure.

We will provide all documentation needed to help you obtain reimbursement through your insurance company. This may or may not be successful. All patients considering this procedure must be seen in the office for examination, proper medical and medication history taking and have diagnostic studies as needed (often just x-rays). An informed consent for the procedure must be signed.

There can be no guarantees of success with PRP injections. Currently, this is a single injection and not a series. If one does not work, there is no current information that further procedures are helpful. Neither can there be any guarantee with cortisone injections, braces, physical therapy or surgery. All of these other modes of treatment have costs involved as well and financial obligations due to co-pays and deductibles required by the insurance contract. In studies going on right now in the United States and elsewhere around the world, the success rate for PRP injections seems to be better than cortisone and often more successful with less risk than surgery. Surgery remains an option for patients who do not respond, and PRP injection does not burn any bridges for patients who still have disabling pain from tendonitis.

Preparation for injection

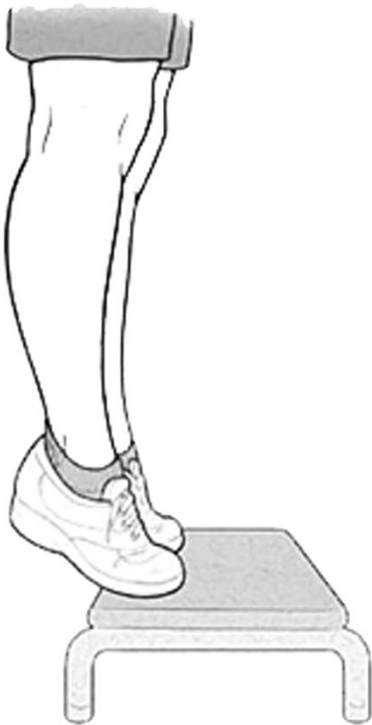
1. Patients who have scheduled an injection should stop all anti-inflammatory medications for 1 week prior to injection. This includes; aspirin (regular and mini-dose 81mg pills), Advil, Aleve, Motrin (anything that contains ibuprofen), arthritis pills such as Celebrex, Naprosyn, Arthrotec, Mobic, etc.
2. Patients should be prepared to take it easy for about 1-2 days after the injection. The lower extremity brace will be needed for the first 2-3 weeks.
3. Patients should bring some reading material and prepare to spend approximately thirty to sixty minutes in the office the day of the procedure.

After care following PRP injection

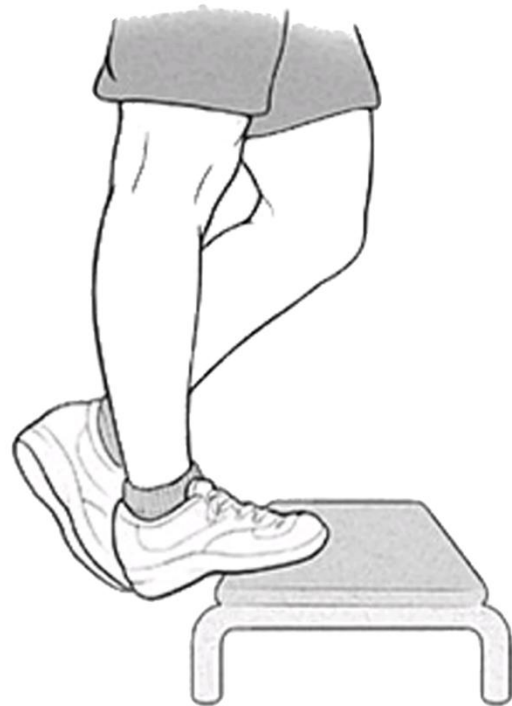
1. Following the procedure the patient will be asked to remain for 15 minutes to insure that the procedure was tolerated well.
2. It is suggested to go home and not go back to work or do errands.
3. Ice should be applied to the area of injection for about 20 minutes, 3 times per day for the next 48 hours.
4. DO NOT TAKE anti-inflammatory medications for the next two weeks.
5. Pain can make the patient fairly uncomfortable. Pain pills are prescribed for this purpose (no driving while taking narcotic medication!!). It usually resolves in the first few days.
6. Use of a brace is mandatory and not for comfort only. It is to be used at all times except when showering or dressing. If the right lower extremity is involved then the brace may be removed for driving only and then replaced ASAP.
7. After 2-3 days, normal activities are allowed with the brace.
8. A follow up post procedure exam will be scheduled for about 2 weeks.
9. Start the attached exercise programming 2 weeks after the injection

Achilles Tendon Eccentric Strengthening Exercise

- 1) Warm up with gentle stationary cycling, walking, or marching in place for several minutes.
- 2) Stretch your Achilles tendon.
- 3) Eccentric program includes three sets of 15 repetitions on each leg twice each day
 - a) Stand on the balls of your feet on the edge of a sturdy box or step, keeping your heels free.
 - b) Maintain control at all times and slowly lift up as high as you can on both toes (Picture 1).
 - c) Move your weight to one foot and slowly begin to lower yourself (this is the eccentric contraction phase) until your heels are just below the step (Picture 2).
 - d) Repeat each step until 15 repetitions have been complete switch legs



Picture 1



Picture 2