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No More Tennis Elbow

At the 1999 U.S. Open, the hard-serving, longhaired Patrick Rafter, nicknamed “Warrior Pat” by his Australian countrymen, was 26-years-old and the world’s number one player.



He was the event’s two-time defending champion and the first Aussie to be ranked number one in the world since John Newcombe in 1974.



He’d lose both those distinctions within a week, becoming the shortest tenured number one in tennis history. Shoulder problems forced Rafter to forfeit his opening round match during the fifth set. The injury required rotator cuff surgery that ended his 1999 season and rendered him a spectator for Australia’s Davis Cup victory in December.



A little over two years later, he was out of tennis entirely.

If Alan Mishra has his way, the time when shoulder and elbow injuries can destroy a player’s career may be over. A professor of orthopedic surgery at Stanford University Medical Center, Mishra has developed an experimental treatment that encourages the body to heal wounds quickly and effectively.

The technique, called platelet-rich plasma (PRP) treatment, works by drawing blood from a patient and running it through a centrifuge, distilling the blood to a platelet concentration level five times as rich as regular blood. That plasma is then injected into the damaged tendon or muscle, overloading the area with healing cells and encouraging natural repair.

Yoshiteru Kajikawa, a professor at the Kyoto Prefecture University of Medicine, dyed bone marrow cells with a green fluorescent protein to follow their movements, and found that PRP injections attract bone marrow cells to a damaged area, focusing the body’s healing power.

That’s a good thing, because injuries wrought by repeated 120-mph serves need as much help as possible. Muscles and tendons can wear down with repeated use and are often not given enough time to recover due to competition schedules. A pro athlete playing through the pain of tendinitis or a nagging injury will often increase their chances for a serious tear.

Surgical treatment for these injuries may cause a player to miss a year of play while they’re in rehab, and it could easily cost up to \$25,000, all while they’re not playing and winning tournament prize money.

Less effective are cortisone shots, which are, at best, stop-gap treatments. Millions have been spent on stem cell research aimed at tendon and ligament



stem cell derived therapies for functional recovery and cuts 25% off the rehab time of surgery. That's not to suggest PRP is a silver bullet, or that it can replace surgery for the most severe tears. But it's an attractive alternative, due to its shorter recovery time and lower risk of causing further career-ending damage.

Trials are ongoing, and PRP has yet to be approved by the Food and Drug Administration (FDA), but that doesn't mean it's off-limits to U.S. athletes. They won't be reimbursed for PRP treatment, but at \$2,500, that shouldn't trouble a top-flight professional.

The treatment started out as a therapy of last resort for injured amateurs who tried cortisone shots, physical therapy or surgery and still weren't improving. But as results came back from those trials, it became clear PRP had value for elite athletes.

More tests are needed before PRP is ready to undergo the FDA approval process, but the treatment has already become a worldwide subject of research. Mishra's current testing is focusing on a wider range of athletes and has expanded to include Achilles heel and hamstring tear injuries, which plague track, football, soccer and baseball players.

So far, no elite athlete has publicly undergone PRP treatment. But as Mishra's results continue rolling out over the next year, it's not difficult to see that changing—especially for the next Patrick Rafter.

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