Dr. Frank Jobe, Tommy John and the Surgery That Changed Baseball Forever

By
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Stephen Strasburg and the Tommy John elbow. (B/R photo illustration for the Tommy John Surgery special report.)
Jonathan Daniel/Getty Images
Imagine baseball without Adam Wainwright, Stephen Strasburg or Anibal Sanchez. Imagine that in the not-so-distant past, John Smoltz and David Wells’ careers would have just stopped, while many pitchers would never have made it to the majors at all.

The more than 1,000 pitchers who have had careers extended or even enabled by Tommy John surgery all owe a tip of the cap to Dr. Frank Jobe, the man who did the ligament replacement on Tommy John himself in 1974.

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At age 88, when Jobe stands at the podium in Cooperstown on July 27, he can reflect on his legacy in sports medicine. Not just Tommy John surgery and thousands of rebuilt elbows, but similarly significant arm treatments that changed the careers of pitchers such as Mariano Rivera and Orel Hershiser, as well as programs to help prevent injuries and a legion of doctors who’ve made their own names in the field.

This article is one of four in a package that Bleacher Report is presenting to highlight Jobe and Tommy John surgery. The other articles detail the surgery and key issues surrounding it, discuss the most notable pitcher patients through the years and address the startling number of current pitchers who’ve had the operation.

Jobe, born in 1925, grew up not in Los Angeles, the city that he’s become so associated with through his medical practice, but in rural North Carolina. His voice still retains a slight twang today as he talks about his days there. He left only because he was forced to, put on a path that would lead to his life’s achievements.

"I got drafted right at 18," Jobe said. "I was healthy, and we didn’t have many of those left. All the strong men had already gone to war."

Jobe didn’t get easy duty, becoming part of the famous 101st Airborne division of the U.S. Army. It was there that fate intervened: He was put in charge of delivering medical supplies to the front—a task that would win him several medals, including the Bronze Star.

"We would bring them down in gliders," he explained, "and I got to know the doctors. At the end of the war, one of the doctors asked me what I was going to do, and I didn’t know. I was 20. He suggested I try medical school, and so I did."
Like many people in the immediate postwar period, he decided to head west. He ended up in medical school at Loma Linda University near Los Angeles on the GI Bill. For the ensuing three years, Jobe was a family practice doctor.

The Beginning of a Great Team
Very few medical professionals have influenced a sport as much as Dr. Jobe has done in baseball. Dr. Jobe has saved, prolonged and improved baseball pitchers' careers for years. Thousands of players' careers would have ended, but thanks to the surgery, they were able to play again. It's just incredible that Dr. Jobe has changed baseball forever.
— Kevin Wilk, DPT, Champions Sports Medicine.

Deciding on family practice was a fortunate choice for Jobe, as it allowed him to cross paths with another future giant in sports medicine, Dr. Robert Kerlan. Kerlan saw something in Jobe and not only encouraged him to go back and do a residency in orthopedics, but he waited for him to complete it before opening up his clinic.

The clinic we now know as the Kerlan-Jobe Orthopaedic Clinic started as the Southwestern Orthopaedic Medical Group. It had some advantages besides having two of the top doctors in an emerging field and in an emerging metropolis.

The Dodgers and Kerlan-Jobe grew up together and became almost symbiotic. As the Dodgers became a national power and a part of Los Angeles' new identity, Kerlan-Jobe was growing along with the franchise. The doctors received valuable experience working with athletes and got visibility
Perhaps their most famous patient through that first decade, the '60s, was Sandy Koufax.

There was no better pitcher at the time than Koufax, but he also could barely pitch. Koufax's arm was so bad off that in Jane Leavy's excellent biography of him, *Sandy Koufax: A Lefty's Legacy*, she detailed how he used so much of a capiscum substance on his arm that his teammates couldn’t bear to be around him. Capiscum is the substance that gives hot peppers their heat. Even his uniforms had to be washed separately!

Kerlan and Jobe worked hard to keep Koufax healthy, and they certainly kept him effective. When Koufax walked away at the top of the game, few had an idea of just how injured his elbow was. But Jobe knew.

"Sandy always says that if I’d thought of the surgery just a couple years earlier, we'd be calling it Sandy Koufax surgery!" Jobe said recently.

He’s not wrong.

Koufax’s arm barely held together during his 12-year career, and it’s unclear how long he pitched without a functional ligament in his elbow. The technology both to see it (MRI) and to fix it (Tommy John surgery) simply did not exist. Koufax was one of hundreds, maybe more, who saw their careers end because their elbows failed them.

**Germ of a Baseball Revolution**

Having spent the last 25 years studying baseball biomechanics, I have extraordinary appreciation for the contributions of Dr. Frank Jobe to baseball. When an elite pitcher throws the ball, he produces extreme elbow velocity and tension in the ulnar collateral ligament in excess of what most people’s elbow can handle.

With an understanding of this science, today's orthopedic surgeon, physical therapist and athletic trainer have a reasonable chance in the prevention, diagnosis and treatment of UCL injuries. But such biomechanics was unknown when Dr. Jobe treated Tommy John and other patients in the 1970s, making Dr. Jobe's breakthrough insight and technique in successful treatment of pitchers nothing short of amazing. — Dr. Glenn Fleisig

Prior to 1974, injured pitchers just faded away. While many remember the heavy workloads managed by Don Drysdale, Bob Gibson and others from Koufax’s era, it’s harder to remember those that fell by the wayside.
Johnny Podres, another Dodgers pitcher, was never the same after 1963 at the age of 30. Joe Moeller was a 19-year-old prospect on the Dodgers' 1962 team, but his arm never recovered from an early workload, and he developed control problems. It's possible he could have been saved by Tommy John surgery.

The surgery had entered Jobe's mind a few years before he first tried it. He knew several hand surgeons who were doing work transplanting ligaments and giving people back the use of their fingers after a severe injury.

"I'd wondered whether the same could work in the elbow, but no one had done it," he said.

Repairs of major ligaments, like those of the knee, could be done. The surgery was extensive, and the repair never got the player back to the normal level. Even with surgery, the injury itself was often career-ending.

It took an opportunity like Tommy John for Dr. Jobe to try something.

It was July of 1974, and John had just pulled himself from a game. A quick examination by the Dodgers' trainer indicated a severe sprain. John was 13-3 on the season and was given the standard orders: rest for a month.

At the end of the month, John still couldn't throw. He was 31, and he considered heading back home to Terre Haute, Ind., or maybe going into coaching. Then again, he knew something in particular about his situation.

"The arm had always hurt," John said.

"I was 13, and that's the year you move from the Little League field to the normal baseball field. The pitcher's mound moves back 15 feet and, man, I can remember how much it would swell up."

John had pitched all of his career with a damaged, perhaps a completely torn, ligament. Knowing that gave him just enough confidence to take what Jobe offered him next.
"I told him there was a chance to put the elbow back together, but that it was going to take the rest of the season," Jobe said.

This was a solid Dodgers team, one that would go on to win 102 games and the pennant that year, but John was their ace.

John looked around the room, then down at his arm. That arm had over 2,000 major league innings on it, 124 wins and had brought him from small-town Indiana to the bright lights of Hollywood.

"Let's do it," he said.

Jobe: "Those words changed baseball."

The surgery itself was relatively simple. Jobe opened John's arm and peered in for a while. He talked with Dr. Herbert Stark, a hand surgeon that he'd brought in for advice.

"It was Stark that had suggested the palmaris," Jobe explained.

The palmaris tendon in the wrist is often used in surgeries because it isn't needed. Removing it has no real effect on function.

Frank Jobe was the leading contributor and developer of baseball medicine. Without his contributions both clinically and scientifically, none of us would be where we are today. The careers he has saved is a landmark that probably will never be duplicated. — Dr. James Andrews
Explaining Tommy John surgery (NSFW warning: not safe for the squeamish).

Jobe drilled a couple of holes through the elbow bones and looped the harvested tendon through a couple of times, in figures of eight, locking it in with anchors. The surgery is done almost identically today, down to the loops.

In a few months, John was throwing, and things looked very positive. There was even some thought that he could pitch by the end of the season.

Instead, there was a setback. John began having severe pain in the elbow, requiring Dr. Jobe to go back inside the elbow. The ulnar nerve, often called the "funny bone," had become trapped inside scar tissue and was causing pain.

The palmaris tendon. Photo from Wikimedia Commons.

Dr. Jobe moved the nerve in a common surgery called transposition, though the setback cost John the whole of the 1975 season. Today, some surgeons move the ulnar nerve during the operation, even though only about 20 percent of surgical cases will have the issue that transposition alleviates.

What Jobe had done was amazing, but he knew at the time that there was a lot he didn’t know.

"I didn’t do any more [surgeries] for two years to see how [John] came out, then I started doing a few more. At that time, I thought I shouldn’t do this on anyone that’s going to be a pitcher, due to the year of rehab," he said.

**One Giant Leap for Pitching Kind**

Tommy John surgery was the most dramatic change in the history of baseball. Dr. Jobe doesn’t get the credit he deserves for the genius of the procedure or the careers he saved. Doctors today still haven’t caught up. Sports medicine and the game of baseball owe Dr. Jobe more than I can say. — Dr. Tim Kremchek
The surgery in 1974 and the surgery in 2013 look much the same, passed on to other prominent sports surgeons like Jobe's protege, the late Dr. Lewis Yocum, and Dr. Neal ElAttrache, the current Dodgers team physician. It uses the same opening portal. The holes are put in the same places. The same palmaris tendon is often used.

Even with arthroscopy changing the landscape of orthopedics over the last 40 years, it's barely touched Tommy John surgery, in large part because Jobe designed it to be as minimally invasive as he could.

What advances there are, such as special jigs to locate the proper drill points and specialized tools to draw the grafted tendon through, are only used as aids to the surgery. They have not changed it. The reduction in the healing time is more a result of the rehab protocols and a more aggressive nature of orthopedics. A pitcher today would not be in a sling for a month before starting rehab. Instead, that rehab would start about the same time the pitcher woke up from surgery.

Jobe's elbow-restoring invention is just the most famous part of his contributions to the game of baseball, some of which are aimed at preventing exactly what he's best known for.

Jobe created what is now known as the "Thrower's 10" or "the Jobe exercises." This series of 10 motions has saved an untold number of pitchers from the rotator cuff problems that were as problematic as elbow injuries.

"The shoulder is far harder to put back together," Jobe said, "so prevention is even more important." The shoulders he couldn't save, he could attempt to put back together. His most famous shoulder surgery was on Dodgers great Orel Hershiser.

The slightly built right-hander had destroyed his shoulder over the course of a Koufaxlike run in the late 1980s, leaving Hershiser with records, a ring and a shoulder that had likely ended his career.

Jobe was able to work a miracle, renovating the structure of the shoulder and giving Hershiser another 10 years in the game.

Mariano Rivera might never have had a major league career at all were it not for an elbow procedure performed by Jobe. When he went into Rivera's elbow, he found that the ulnar collateral ligament was damaged, but not beyond repair. Instead of performing Tommy John surgery on Rivera, Jobe
performed a simpler procedure.

That was in 1992, when Rivera was in the low minors of the Yankees farm system. It's safe to say that the procedure worked. Rivera has gone on to become baseball's all-time saves leader with 638 and counting.

Jonathan Daniel/Getty Images
Nolan Ryan.

But Jobe would rather never have to perform any kind of surgery, groundbreaking or not. He is a staunch advocate of pitch counts, especially at the youth level.

"So many of these are simple overuse injuries," he said. "They throw harder now, I think, though we had guys like [Don] Drysdale and [Nolan] Ryan years ago too."

The Hall of Fame Legacy

The impact on baseball as a result of the Tommy John surgery pioneered by Dr. Jobe is truly too large to comprehend. Over several decades, this operation has withstood the test of time, over and over again successfully returning high-level throwers back to baseball. ...

There are very few procedures, products or even companies with such longevity that have withstood the test of time. The impact on baseball in fact has been so large that it is now taken for granted that a professional thrower can successfully return back to his career as a result of this surgery. What a wonderful thing! — Dr. Ralph Gambardella
Perhaps Jobe’s greatest legacy is the clinic he helped build. The Kerlan-Jobe Orthopaedic Clinic is one of the world's top facilities, one to which sports teams have no hesitation sending their million-dollar assets. In addition, Kerlan-Jobe has created a fellowship program that has trained hundreds of doctors, many of whom find themselves around baseball and other sports.

"He doesn't get the credit he deserves," said Dr. Tim Kremchek, the Reds' team surgeon and one of the doctors who has built on Jobe's work.

Dr. James Andrews agreed, saying, "Without his contributions both clinically and scientifically, none of us would be where we are today. The careers he has saved is a landmark that probably will never be duplicated."

At 88 years old, Jobe is still as sharp as ever. He goes to a lot of Dodgers games and remains a consultant to the team. And his work with the game of golf has been so important that the PGA Tour named him its emeritus physician after 26 years of working with the best in the game.

Dr. Frank Jobe's legacy is safe, with or without honors at the Baseball Hall of Fame. Cooperstown’s tribute is certainly something to be celebrated, but at some point, the Lords of Baseball need to consider putting Jobe in the very Hall of Fame itself, where he could be side by side with some of his patients.

The first Tommy John patient to be inducted probably will be John Smoltz, who is eligible for the Class of 2015. Several more pitchers won't be far behind. It would be only fitting that Jobe get a plaque in the Hall with them. Without him and his work, those pitchers wouldn't have made it back to the mound, let alone Cooperstown.

This article is part of a package of multimedia stories about Tommy John surgery. Click these links for more:

- How the surgery is done and the key questions surrounding it.
- The most notable Tommy John pitchers over the past 40 years.
- The surprising number of current pitchers who've had Tommy John surgery.
Will Carroll has been writing about sports injuries for 12 years. His work has appeared at SI.com and ESPN.com. His book "Saving The Pitcher" was published in 2004.

All interviews and research conducted firsthand, unless otherwise noted.

Training Camp Injury Updates Hint: you can use arrow keys to navigate through this channel.