COMMENTARY & PERSPECTIVE

Ulnar Collateral Ligament Reconstruction with Allograft: Is It a Home Run?

Commentary on an article by Felix H. Savoie III, MD, et al.: "Medial Ulnar Collateral Ligament Reconstruction Using Hamstring Allograft in Overhead Throwing Athletes"

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Since its original description by Jobe et al. in 1986¹, ulnar collateral ligament reconstruction has become the standard treatment for ulnar collateral ligament deficiency in throwing athletes. There have been several modifications of the original procedure that aimed to maintain the integrity of the flexor pronator mass insertion on the medial humeral epicondyle and to improve the biomechanical strength of graft fixation^{2,3}. Regardless of surgical technique, reported clinical outcomes have shown a rate of return to competition of 80% to 90% for throwing athletes^{4,5}. One common thread in studies evaluating outcomes of ulnar collateral ligament reconstruction is the use of autograft for the reconstruction.

Until now, there have been no reports of outcomes using allograft for ulnar collateral ligament reconstruction. In this issue of *The Journal of Bone and Joint Surgery*, Savoie et al. report the first case series, to my knowledge, on the use of allograft for ulnar collateral ligament reconstruction. In their study, the authors retrospectively reviewed outcomes in 116 patients who were treated with an ulnar collateral ligament reconstruction using either gracilis or semitendinosus allograft tissue. Their cohort included twenty-three professional athletes, forty-eight college athletes, and forty-five high-school athletes. The surgical techniques used for the reconstruction varied, but all were performed using techniques with documented success in the literature. They reported that, at the time of the two-year follow-up, 110 of 116 patients had returned to competition, with 88% returning to their previous level of sport or better. The average time for return to competition was 9.9 months. They reported an overall complication rate of 6%.

The authors reported that one reason to consider allograft is to reduce the potential for donor site complications and morbidity. Although donor site complications do occur, they are rare and typically transient. Cain et al. reported a donor site complication rate of 4% in a series of 942 patients who underwent an ulnar collateral ligament reconstruction, with most complications being superficial infection⁵. In their systematic review of ulnar collateral ligament reconstruction, Vitale and Ahmad reported only a 1% rate of donor site complications⁴. More common complications include saphenous neuritis from hamstring harvest, donor site scar tenderness, and superficial infections, which can be minimized by using allograft tissue. Perhaps most importantly, rare but catastrophic donor site complications such as erroneous nerve harvest would be avoided with allograft.

Savoie et al. should be commended for evaluating allograft performance in ulnar collateral ligament reconstruction in athletes for whom the return-to-play stakes are high and failure can cost important time lost from their sport. Their outcomes rival the success seen in studies using autograft. One advantage of using hamstring allograft tissue may be the consistency in the size of the graft. Palmaris longus, plantaris, and toe extensor autograft tendons can vary widely from patient to patient. Hamstring grafts are typically more robust and may provide better resistance to the stresses placed on the ligament during throwing. Also, some athletes are concerned about using hamstring autograft because of fears about weakening the leg and disrupting their throwing mechanics. Although these are real concerns to athletes, these factors have not been shown to affect outcomes or performance and should not prevent the use of autograft tissue.

According to the data presented by Savoie et al., allograft appears to be a good option for ulnar collateral ligament reconstruction in throwing athletes. A longer duration of follow-up for these patients would help to establish the durability of allograft tissue with the repetitive stress of throwing. Despite the success of ulnar collateral ligament reconstruction with allograft reported in this series of 116 patients, ulnar collateral ligament reconstruction with autograft remains the gold standard because of the reported success in >1000 patients across several studies. A prospective study would be helpful to compare the outcomes between allograft and autograft for ulnar collateral ligament reconstruction.

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