

Don't Give Away Things You Might Need: Safe Tendon Autograft Sources In High Level Athletes

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INTRODUCTION: Hockey is a high-speed collision sport in which athletes regularly sustain injuries requiring surgical treatment. In cases where primary repair of injured structures is not possible, tendon autograft or allograft is frequently used for reconstructive surgery. In the upper extremity, the palmaris longus is largely vestigial and, when it is present, it can provide approximately 15 cm of allograft tendon. The flexor carpi radialis tendon is often utilized for reconstruction and stabilization of the first ray, specifically the carpometacarpal joint. Unfortunately, there is a paucity of studies regarding the role of the flexor carpi radialis in hockey specific activities, specifically, shooting a puck. We hypothesize the flexor carpi radialis will be active in both the leading and trailing hands while executing a wrist shot, and thus is not an ideal source of autograft.

METHODS:

We used a video-synchronized dynamic electromyographic monitoring system to record the relative activity of the brachioradialis, flexor carpi radialis, and flexor carpi ulnaris in the lead and trailing hands of high level male and female hockey players while executing a wrist shot. Five male and five female players participated.

Inclusion criteria was having played professional and/or college level hockey at NCAA division III or higher and exclusion criteria were a history of prior elbow, wrist, or hand injury requiring surgery.

Players were asked to execute twelve wrist shots, six each of the leading and trailing upper extremities, while they were monitored.

RESULTS: In all cases, the flexor carpi radialis had a high level of relative activity during both extremities while executing a wrist shot. The leading or top hand was more active during the wind up and the trailing or bottom hand demonstrated more activity during puck strike and follow through.

DISCUSSION AND CONCLUSION:

Harvesting all or part of the flexor carpi radialis tendon may have negative effect on performance, and, therefore, it is not an ideal source of tendon autograft in high level hockey players.