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## CASE REPORT

## Unusual cause of wrist pain in a golfer

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Wrist injury is common in golfers and normally occurs at the impact of the club with the ball. The unusual case is reported of a low handicap golfer with wrist pain aggravated by the putting stroke. The condition was resolved with treatment. The likely mechanism for the injury is discussed.

Injury to the wrist is common in golfers.<sup>1-4</sup> Owing to the forces produced by the golf swing and the fact that the wrist and hand form the anchor point of the body to the club, wrist injuries in golfers normally occur at the impact of the club with the ball.<sup>5</sup> Injury can be insidious, resulting from poor swing mechanics or overuse.<sup>1-4, 6, 7</sup> It can also be traumatic, resulting from hitting the ground or an unseen object such as a tree root in the rough.<sup>1-4, 6</sup> The purpose of this paper is to (a) report a case of a low handicap golfer with wrist pain aggravated by the putting stroke, which was resolved with treatment, and (b) discuss the likely mechanism for the injury.

## CASE REPORT

A 56 year old male golfer, handicap 6, presented with a nine day history of right anterolateral wrist ache, which was mild in nature (visual analogue scale pain score 3/10). This right handed golfer, who played once a week and practiced twice a week at the driving range, was also a recreational tennis player who spent much time as a sedentary office worker. Putting practice induced the pain, and this started happening 4-5 weeks after a change in putting grip to obtain more consistency in the putting stroke. This change involved "strengthening" the right hand so that the palm faced more towards the ball (fig 1). This was produced by supination of the forearm. The patient had abruptly increased putting practice just under two weeks previously (two days before pain onset) from twice a week to everyday in preparation for playing for his club in an interclub competition. Similar previous abrupt increases in putting practice before he had modified his grip had not produced wrist pain. He reported that the pain only occurred during the putting stroke and not during the swing. It was described as a dull ache which was worst at the start of practice/play and gradually improved over the course of five minutes practice or six holes of playing. It did not affect his golf game.

On examination, there was no pain or restriction of active, passive, or resisted range of motion. There were also no changes in strength and no night pain. On palpation, there was mild tenderness of the myofascia of the wrist extensors (muscular hypertonicity) and a point of tenderness at the anterolateral wrist just anteromedial to the anatomical snuffbox, corresponding to the insertion of the flexor carpi radialis (FCR) and surrounding connective tissue. Further investigations/imaging were not conducted because of the mildness and short duration of the symptoms. A working diagnosis of grade 1 tendinopathy/strain at the insertion of the FCR was made.

A multimodal treatment plan was devised which included soft tissue therapy, mobilisations, exercises, and grip modification. Treatment consisted of soft tissue therapy to the insertion of the FCR and the wrist flexors and extensors. Mobilisations of the distal radioulnar articulation and the carpometacarpal joints were also performed. The patient was instructed to avoid aggravating the pain. This required partial return to the original putting motion together with active pain free range of motion exercises before golf. He was given stretches for the wrist flexors and extensors. Three days later at the time of the second treatment, he reported playing golf without any pain. In addition to the protocol given at the first treatment, the patient was given strength exercises with an elastic therapy band to strengthen the wrist musculature. He was seen after one week and reported no exacerbation of the pain. At the final visit two weeks and three games later, the pain was completely resolved despite heavy use of the wrist. He was instructed to continue with the stretching and strengthening programme and discharged from care.

## DISCUSSION

This is the first report of a wrist injury in a golfer that was the result of the putting stroke, in particular an injury to the right wrist in a right handed golfer. A review of the literature shows that wrist injuries are common in golf, particularly the left wrist, with most golfers playing right handed.<sup>1, 7</sup> Wrist injury rates depend on the sex and status of the player<sup>1-4</sup>: 18-28% in male golfers and 12-36% in female golfers; 13-20% in amateur golfers and 20-27% in professionals.<sup>1-4</sup> Wrist injury is reported to occur during the golf swing (usually at impact with the ball).<sup>5</sup> Our patient reported the injury to his right wrist as the result of putting, when he subtly changed his grip. The grip modification caused his right forearm to be supinated more during the putt, resulting in an increase in extension and ulnar deviation of the wrist (fig 1; changes highlighted by arrows). This position created increased strain on the FCR and surrounding connective tissue.

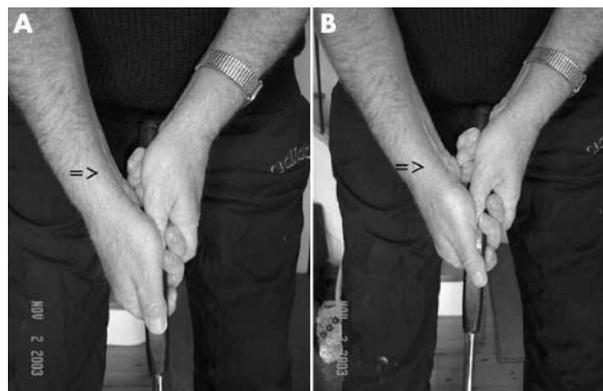


Figure 1 (A) Putting grip before modification. (B) Modified putting grip.

The aim of the change in grip position was to create a more consistent putting stroke. In the normal putting grip, wrist movement can be a source of uncontrolled movement (usually into extension) leading to a loss of control in the putt. The patient attempted to reduce this movement by supinating the forearm and creating slight extension with ulnar deviation of the wrist. The wrist was less able to move during the putt, thereby creating a more consistent putting stroke. However, as described above, this placed more strain on the radiocarpal joint and surrounding connective tissue. An increase in putting practice resulted in increased stress, which resulted in microtrauma to the area. The frequency of play led to the development of an inflammatory state which was incomplete before its subsequent reaggravation, resulting in pain on putting. There was no pain during the full golf swing as the grip change did not extend to it and therefore there was no aggravation of the FCR insertion even though larger forces are produced than in the putting stroke.

In summary, this case of wrist pain in a golfer is unusual, as it occurred in the right wrist of a right handed golfer and was the result of a change in putting grip. Furthermore, the pain only occurred during putting and not during the full golf swing.

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**Authors' affiliations**

**A J McHardy, H P Pollard**, Macquarie University, Sydney, NSW 2109, Australia

Correspondence to: Dr Pollard, Macquarie University, c/o PO Box 448, Cronulla, NSW 2230, Australia; [hpollard@optushome.com.au](mailto:hpollard@optushome.com.au)

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