

A Stress Fracture of the Ulna in a Female Non-Professional Golfer

— A Case Report —

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= Abstract =

Stress fractures have been well documented in the lower extremity. Stress fractures of the upper extremities are uncommon. We report a case of an ulna stress fracture in a 32 year old female non-professional golfer.

Key Words : Ulna, Stress fracture

INTRODUCTION

Devas³⁾ defines the stress fracture as "a fracture occurring in the normal bones of the healthy people doing every day activities without injuries." The sites of these fractures vary with age and activity. They are often seen in healthy athletes and armed forces recruits. There are a few reports of the ulnar stress fracture in athletes and tennis players. We reported a case of an ulna stress fracture in a female non-professional golfer.

CASE REPORT

A 32-year-old, right-handed, female patient

came to our institute complaining of pain in the left forearm. She had begun to play golf eight months before coming to us. She practiced playing golf three times or four a week, and went to the golf course every three weeks. One month before coming to us, she had noticed gradually increased pain while playing golf. The pain had been steadily increased and she became unable to swing. Examination revealed mild swelling of the left forearm. Tenderness was noted from the middle third of the ulna. Pronation and supination elicited pain. Neurovascular examination was within normal limit and strength was good. Plain roentgenograms of the forearm(Fig.1A-1B) demonstrated a discrete area of periosteal reaction in the middle third of the ulna. The cortex was intact, and the medullary canal was unchanged. We could diagnose her case as a stress fracture with the positive roentgenograms.

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Fig. 1. A and B. Roentgenograms of a 32-year-old female patient demonstrate periosteal elevation in the middle third of the ulna.

DISCUSSION

Stress fractures are most commonly seen in military installations where recruits, unaccustomed to vigorous activity, are exercised. Recently, many stress fractures are associated with sports activities.

The mechanism is that tremendous repetitive stresses on various areas of the musculoskeletal system lead to fatigue of tissues. The cumulative effect of such repetitive jarring blows typically results in stress fracture in bone⁸. They occur predominantly in the lower limb and are associated with high-mileage running. Stress fractures of the upper limb do occur, however, and have been reported in association with a number of sports as diverse as gymnastics¹⁰, body building⁴ and tennis^{1,2,7}.

The frequency of golf injuries has not received much attention in the literature. There have been reports of fractures of the carpal bones, especially the hook of the hamate secondary to impact with the end of the club⁹. In a recent study on professional golf injuries⁵, the left wrist was most common site of injuries followed by the lower back, left hand, left shoulder, and left thumb.

Stress fractures of the ulna have previously been reported in tennis players^{1,2,7} and athlete⁶. The mechanism of ulna stress fracture can only be postulated. Stress fractures at the ulna in the nondominant arms were associated with the same technique, the double-handed backhand stroke^{1,2,7}. Bollen et al.² suggested that these injuries are torsionally induced. They presumed that pronation occurred the phase of ball strike and follow-through in the double-handed backhand stroke of

tennis players, and caused tortional stress in the middle third(an area of smallest cross-section) of the ulna. In our patient, fracture occurred in the middle third of the ulna. As the golfer starts to hit the ball during the phase of impact, the right wrist is in maximum dorsiflexion, the left thumb is hyperabducted, the left ulnar nerve, elbow, and forearm muscles are under tension. After hitting the ball while pivoting, the left forearm supinates. We believe this injury occurs in a mechanism similar to that reported in tennis players using a double-handed backhand stroke by Bollen et al²⁾ without conditioning her body. She was free from the pain in two months only with rest. We report a case of an ulna stress fracture in a female non-professional golfer.

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= 국문 초록 =

여자 비프로 골퍼에서 척골의 피로 골절

- 증례보고 -

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노 권 재 · 김 동 욱

피로골절은 심한 육체단련을 하는 군인에게서, 또한 스포츠와 관련되어 발생함이 자주 보고되었다. 주로 하지에 많이 발생하며, 상지에 발생한 피로골절은 매우 드문 상태이다. 척골의 피로골절은 테니스 선수에게서 발생되었음이 보고된 바 있으나, 저자들은 내원 8개월 전부터 골프를 시작한 32세 여자 비프로 골퍼에서 척골의 피로골절이 발생한례를 경험하였기에 문헌 고찰과 함께 보고하는 바이다.