

Tennis elbow

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Dear Colleague

RE: Your patient with a painful elbow on the lateral side: lateral epicondylitis

Thank you, for your referral of your patient Mr. R N a forty-five year old right handed researcher, whom for the last seven months complains of pain over the lateral epicondyle. He also experiences pain in the elbow joint. This pain radiates proximally and distally. He has discomfort especially when reaching out for an object and carrying his brief case. He has had non-steroid anti-inflammatory drugs, which did not make much of an impression. He was also injected with cortisone into the region of the lateral epicondyle, which gave him relieve for about three days. After that the pain recurred. This pain interferes with his activities of daily living, and especially when he attends gym.

On **examination** one finds a tender spot over the lateral epicondyle. Furthermore, when he extends his elbow, wrist and fingers, a sharp uncomfortable pain is experienced when the middle finger is pushed down against resistance (fig 1). The radial head and the elbow joint (fig2), as well as the radial nerve (fig 3) which curls around the lateral border of the radius, do not reveal any abnormalities.

Special investigations included X-rays of both elbows. These did not reveal any abnormalities.

The **diagnosis** is so-called tennis elbow or lateral epicondylitis.

Management

Since many of the extensor of the wrist and fingers originate from the lateral epicondyle a logical way of relaxing these muscles is to prescribe a wrist extension splint. The pain is mostly relieved immediately. Furthermore, he should sleep with the splint on, since his symptoms are aggravated during the night when the wrist and fingers are held in flexion.

This flexed position tightens the extensor tendons and effectively pulls further on the lateral epicondyle. Since he only had one steroid injection, I decided to repeat the injection. I prefer to inject as deep as possible, i.e. against the bone directly onto the lateral epicondyle, as well as the surrounding area. The size of infiltration is about the size of a two rand piece. I've also given him a non-steroidal anti-inflammatory drug for a week. He should

wear the splint for a month, day and night, and he may only removed it when washing himself. The splint is comfortable and allows him to do most of his activities of daily living.



Figure 1: A diagnostic sign of tennis elbow is excruciating pain when the extended middle finger is pushed down.



Figure 2: The radial head may be tender due to osteo-arthritis and the radio-humeral joint may be painful due to sinovial impingement.

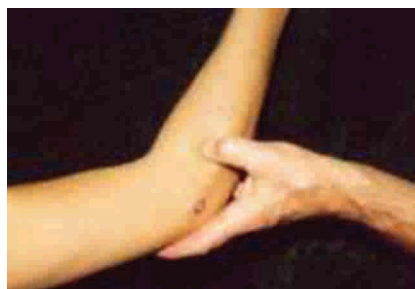


Figure 3: The radial nerve is palpated for tenderness (compression) between M. brachio-radialis and M. extensor carpi radialis longus.

Should the pain recur my suggestion would be to release the extensor origin from the bone. I prefer to use a cautery which minimizes bleeding. Once the extensor origin has been released from the lateral epicondyle, the bone is decorticated. This has the effect of releasing the venous pressure and denervating the area. After

this the fascia over the extensor muscle group is sutured over the lateral epicondyle.

Postoperatively the patient receives a splint to keep the elbow in extension. This could be in the form of a pop splint, or a so-called Robert Jones bandage, i.e. three successive layers of cotton wool and crepe bandage. This allows stability, comfort and slight movement. This splint is usually worn for two to three weeks postoperatively. Of course the patient still has to wear his wrist extension splint during this time, as well as another four weeks after that. The patients should be aware that they will have a sensitive elbow for at least three months postoperatively since the origin has to re-establish itself. This takes time.

Discussion

Lateral epicondylitis or tennis elbow can start spontaneously without any triggering factor. However, one sometimes sees this condition in over-enthusiastic DIY weekenders who for example would tile their kitchen floor. The spreading and extension of the wrist and fingers causes a tendonitis at the lateral epicondyle.

Why this condition is called a tennis elbow is unclear since tennis players suffer more from medial epicondylitis. In the past radiation therapy was advocated which is strongly discouraged, since it affects the soft tissue for a long time after the radiation, rendering it very atrophic and difficult to manage. The results are in any case unpredictable.

Regarding the number of cortisone injections, one should not repeat this more than two or at the very most three times. Repeated injections are only warranted if the affect is dramatic and last for a longer period of time, such as a few months. If the first, and/or second injection lasts only a short time i.e. few days, further injection is not advised. Cortisone should never be injected subcutaneously. This causes atrophy of the fat and skin. The skin becomes very thin, vulnerable and discoloured.

Conservative management could further be augmented by a tight band/bandage around the arm just distal to the lateral epicondyle. This in effect shifts the "origin" of the extensor tendons more distally thereby relieving the lateral epicondyle from the direct pull.

With sincere regards

Ulrich Mennen