

The Hand Patient

A Selection of Case Studies of Quick Reference

Having had the pleasure to teach and train students for many years, and the privilege of having patients referred to me by ex-student General Practitioners, one realizes that medical school training can only impart but a general overview of knowledge. It is impossible and unfair to expect of any medical student to "know it all".

For this reason continuing medical education, or Continuing Professional Development (CPD) as it is now known in South Africa, is imperative. This post-graduate training should however, be presented in such a way that the busy practitioner readily has access to the relevant information in a succinct form and in an understandable jargon.

Communication between the referring doctor and the specialist should not only include information regarding that particular patient, but should also contain some informative detail on the pathology and management. This continuing education is part of the responsibilities of a consultant specialist. It is sincerely hoped that this edited collection of selected case reports will promote a well-informed communication between the practitioner and his/her "hand patient".

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Carpal Tunnel Syndrome

YOUR PATIENT WITH PAIN, NUMBNESS AND PINS AND NEEDLES IN THE RIGHT HAND

Thank you for your referral of Mrs C T, a 50 year old right dominant typist who complains of numbness, burning sensation, pins and needles and weakness of the right hand for about three months.

These symptoms are worst at night and tend to wake her up. Painkillers are of no benefit to her. Shaking the hand or dipping the hand in warm water gives some relieve. She notices that during the day the symptoms improve. However, she has dropped many of her kitchen utensils because of reduced sensation, or in her words, the hand feels "stupid". She also maintains that she has difficulty in picking up and manipulating small items such as doing needlework. To her the whole hand feels involved.

On **examination** the hands look normal with a healthy skin and strong structure. She has early signs of osteo arthritis of the distal interphalangeal joints (DIP joints) and a slight thickening of the 1st carpo-metacarpal joint of the thumb. The vascular status is normal. Sensation is within normal limits. However, she has a "different" feeling to light touch in the median nerve distribution, i.e. the radial three and a half fingers. The muscle function of the hand is normal. Comparing the two hands one notices a slight flattening of the thenar muscle eminence. Opposition of the thumb is normal. The median nerve is hyper sensitive with percussion over the carpal tunnel area but especially so just proximal to the wrist fold. She also experiences pins and needles when the nerve is tapped.

Special investigations included an X-ray on both hands on one film so

that an easy comparison could be made. The only observation of note is early osteo arthritic changes of the DIP joints and the first carpo-metacarpal joint. Since the history and clinical examination clearly points to median nerve compression syndrome at the wrist level, it was decided that it was not necessary to confirm the diagnosis with electro conduction tests of the nerve.

The **diagnosis** is a carpal tunnel syndrome of the right hand which has reached a level where conservative management will not improve the condition.

The **management** therefore is a surgical release of the flexor retinaculum, i.e. carpal tunnel. This should preferably be done by an open method, since the indirect method with a scope is not only technically demanding, but has a high morbidity risk. Once the median nerve has been

identified an epineurolysis may be indicated if the covering layer of the nerve is thick and shows obvious

compression or if the nerve has a dull, dry appearance. It is only necessary to suture the skin. A volar POP slab is

applied for five days. The patient may return back to her typing duties within a week.

Discussion

Carpal tunnel syndrome usually appears in the post-menopausal woman and may be part of the osteo arthritic syndrome, i.e. osteo arthritic of the first carpo-metacarpal joint and DIP joints. At the DIP joints one might see osteophytes (Heberden nodules) and mucoid cysts. Triggering of the fingers may be part of the syndrome. The cause for the carpal tunnel syndrome is speculative. Hormonal changes may be the reason. Hypo thyroidism should be excluded. More likely, reduced cartilage height of the carpal bones results in a tighter carpal tunnel.

The reason for the increase in symptoms during the night is because of muscle inactivity which leads to

swelling and therefor compression in the carpal tunnel.

The carpal tunnel consists of the carpal bones with the flexor retinaculum which spans the four pillars namely the pisiform and the hook of the hamate on the ulnar side and the tubercle of the scaphoid and the trapezium on the radial side. One has seen too many incisions for so-called carpal tunnel release, which are based in the distal part of the forearm. The carpal tunnel is in the hand.

Classically once the carpal tunnel has been released the bothersome symptoms are immediately relieved. This is usually a sign of adequate surgical release.

Other causes of carpal tunnel syndrome include pregnancy, which could be dealt with conservatively by splinting and diuretics. In the male with carpal tunnel syndrome, one should exclude gout and previous wrist injuries. Rheumatoid arthritis with synovitis of the flexor tendons may be another cause of carpal tunnel syndrome.

It should be noted that patients might complain of pain in their arms, elbows, shoulders and even necks. This is a referred pain and would disappear after the tunnel release. One has seen cases of unnecessary cervical surgery due to referred neck pain from carpal tunnel syndrome, which has disappeared only after the median nerve was released.



Carpal Tunnel Syndrome

The thenar muscle atrophy is obvious, especially when the thumb is opposed to the small finger. Also note the lack of rotation of the thumb, again indicating loss of opposition. In severe cases an opponens plasty may be indicated.