

Watch Those Hands

Hand it to your hands: they do a lot. Our hands serve many purposes. Hands help us eat, dress, write, earn a living, create art and do many other activities. The hand is a unique area of the human body that is made up of bone, joints, ligaments, tendons, muscles, nerves, skin and blood vessels. These elements must all be in good working order for the hand to function well. Hand surgeon Dr Tan Puay Ling of Infinity Hand, Wrist & Reconstructive Surgery Centre talks about the common conditions that affect our hands and helps us to understand hand ailments a little better.



Hand pain can be caused by disease or injury affecting any of the structures in the hand, including the bones, muscles, joints, tendons, blood vessels, or connective tissues. To function, our hands require sensation and movement in the joints, tendons and muscles. The relationship between all these structures is delicate and refined. An injury or disease can affect any or all of these structures and impair the use of the hand. When a problem takes place in the hand, care must be given to all the different types of tissues that make function of the hand possible. And when they hurt too much to do their job, seek relief.

Dr Tan said, "The common conditions include trigger fingers, carpal tunnel, wrist and finger joint ligament injuries, fractures and nerve compression problems. The majority of the problems are trauma based – open wounds, cuts, falls, wrist and hand pain from injuries. In many of such cases, patients either have an open wound, or complain of pain or numbness in the affected areas."

She added that treatment options for such conditions – if they are treated promptly – are more straightforward, with simple repair and decompression procedures. Delayed treatment will entail salvage procedures and treating complications and infections from neglected wounds.

If your hand is impaired in any way, surgery may improve your condition. This type of very specialised surgery can treat diseases that cause pain and impair the strength, function and flexibility of your wrist and fingers.

Dr Tan explained it this way, "Surgery seeks to restore to near normal, the

function of fingers and hands injured by trauma or to correct abnormalities that were present at birth."

According to Dr Tan, "Workplace injuries are common, especially in marine, shipyard and construction workers. Simple crush injuries to the fingertips are most common, followed by fractures and amputation injuries. Many of such injuries are usually caused by carelessness in work processes or a lack of adequate supervision."



Carpal tunnel syndrome

This condition is caused by pressure to the median nerve within the wrist, or carpal tunnel. The sufferer feels pain, a tingling sensation, numbness of the fingers, weakness or aching. Carpal tunnel syndrome is associated with multiple conditions including repetitive motion or overuse, fluid retention during pregnancy, injury to the nerve in the carpal tunnel or rheumatoid arthritis.

Dr Tan explained, "There are many other underlying factors: It may be

related to repetitive movements such as typing all day. Hormonal changes, pregnancy, a thyroid condition, diabetes, and other conditions have also been associated with carpal tunnel syndrome."

The first step is to determine the cause of the pain, tingling, weakness, or numbness that are often the first clues to carpal tunnel syndrome. "Such symptoms are more apparent when the person is driving, blow-drying their hair or when something's vibrating. Sufferers also commonly report symptoms at night – with hand pain that may make it difficult to get a good night's sleep." Diagnosis will likely involve a physical examination, medical history, X-rays, and possibly lab tests to eliminate any underlying conditions. Early, mild cases may be treated with activity modification and possibly nighttime splinting. Cortisone injections may be used if other therapies do not provide relief. Outpatient surgery is an option when other treatments are not effective or if the symptoms are severe.

For more serious cases, Carpal tunnel release surgery can help. Such patients are usually able to return fully to normal activities within a few weeks. It may be several months before they get all the strength back in the affected hand.

Paediatric Conditions

According to Dr Tan, paediatric conditions are less prevalent nowadays due to the numerous screening procedures performed. In fact, finger anomalies can be detected intra-uterine. The complex conditions are associated with higher morbidity problems, so these foetuses may sometimes be aborted for these reasons.

Common problems include

- Carpal Tunnel Syndrome
- Tennis elbow
- Wrist pain
- Trigger finger
- Sports injuries of the hand and wrist
- Fractures of the hand, wrist, and forearm
- Other problems include arthritis, nerve and tendon injuries, and congenital limb differences (birth defects).

Not all problems treated by a hand specialist need surgery. Hand specialists often recommended non-surgical treatments, such as medication, splints, therapy, or injections.

In paediatric conditions, if detected early, simple conservative measures can be done. Surgical intervention is warranted for syndactyly (the condition of having some or all of the fingers or toes wholly or partly united, either naturally or as a malformation). For polydactyly (a condition in which a person or animal has more than five fingers or toes on one, or on each, hand or foot, surgery is determined on a case by case basis.

Satisfying Moments

Dr Tan admits that she is a visual person and the results of her work are visible externally. Therefore it gives instant gratifications if the procedures done on patient helps restore normalcy. "What makes my cup of tea is when I see a big smile or receive a big hug after they see what has been done. Seeing them integrate back to society and back on their feet makes it rewarding."

Of all the procedures that Dr Tan has done, one stands out. She said, "The most memorable to date will be the Kallang robbery in May 2010 – I was the consultant on call that day and all three victims who were alive were my patients. The Singaporean was the last to be brought to the hospital, with the most severe hand injury. His hand was badly damaged and needed a procedure known as hand replantation. Although the hand replantation was not successful in the end as we only managed to save the palm, the patient's determination and enthusiasm was heartening. He managed to go on to win competitions, representing Singapore in the international Paracanoe competition despite the disabled hand and is currently pursuing his degree in US."

What made you decide to pursue medicine?

There was no one in the family who was trained in the medical field, so I was curious and wanted to be different.

What led you to specialise in hand surgery?

I enjoyed my postings in Orthopaedic and Plastic Surgery. Hand Surgery allowed me to have the best of both worlds. The mentors in Hand Surgery were all very approachable and friendly as well. Therefore, I wanted very much to be a part of such a community.

Outside of work, what do you do to relax?

Besides work, I have to devote the rest of the time to my family and kids. I have three children age 4, 6 and 8. The eldest is a girl in Primary 2. The younger 2 boys are in nursery and kindergarten. There is very little "me time". I used to play golf and swim at least once a week, but my erratic schedule plus kids' enrichment classes do not permit me to do so anymore. My parents are the main caregivers, but I involve them in my work, especially when I need to leave them to attend to an emergency.



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