

The woman's hand

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INTRODUCTION

Women represent more than 50% of the Brazilian population and deserve special health care. Due to their caring and organizing nature, they often have a double shift, at work and at home, taking care of their children, other family members, and even members of the community where they live¹. The hand is the human's main tool, an extension of the brain, playing a critical role, especially in women. It is a work, care, affection, expression, and support tool.

Although women have more diseases than men and seek for care more frequently, they statistically live longer than men² and, therefore, have more conditions that are typical of aging, such as arthroses, which can affect many areas of the body, including the hands.

Women's hormone pattern is very different from men's³, with sudden changes in pregnancy, puerperium, and menopause, in whom the changes are more pronounced than in men. These changes favor specific disorders in the upper limbs, such as compressive syndromes and tenosynovitides.

In this article, we will highlight the main conditions that more frequently affect women in our specialty hand surgery.

IN THE MEDICAL FIELD

Female surgeons and interventionists experienced more musculoskeletal pain in the upper limbs than male counterparts. Some of the characteristics found in the studies were that women were generally shorter, wore smaller glove sizes, and were younger than their male counterparts. Furthermore, the size and design of the instruments and equipment handled by physicians are

developed to meet the characteristics of the man's hand rather than the woman's for performing the same procedure^{4,5}. We believe that such elements of harm to the health of the upper limbs in women may be present in several other occupations.

CARPAL TUNNEL SYNDROME

Carpal tunnel syndrome is the most common compressive peripheral neuropathy, which affects up to 1% of the general population⁶. It is characterized by compression of the median nerve at the wrist, inside the carpal tunnel, through which nine flexor tendons of the fingers and thumb also pass (Figure 1).

It affects more women in the climacteric period due to hormonal changes⁶. The patient reports tingling in the hands, at first only during the night or in some specific activities, until symptoms become continuous. As the condition worsens, the sensitivity of the fingers decreases and there is a loss of grip strength in the hand, more selectively in the thumb. Initially, we treat with medication, orthoses, hand therapy, and hormonal correction. In patients with severe compression or in cases of failure of conservative treatment, we indicate surgical treatment, which can be performed using the open or endoscopic method.

TRIGGER FINGER

Trigger finger is caused by the friction of the flexor tendons on the pulleys, mainly the A1 pulley, located at the base of the finger, at the level of the metacarpophalangeal joint, resulting

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in an inflammatory process called stenosing tenosynovitis (Figure 2). It is one of the most frequent affections in our specialty. It is more frequent in women after the fourth decade of life⁷, and the most affected fingers are the thumb, middle, and ring fingers.

Treatment is based on rest, anti-inflammatory medication, orthoses, steroid injections, and, when clinical treatment fails, surgery using the conventional open method or needle tenolysis, both with good results.

DE QUERVAIN'S STENOSING TENOSYNOVITIS

De Quervain's stenosing tenosynovitis is an inflammatory process located on the lateral aspect of the wrist, just above the thumb, which affects the tendons of the abductor pollicis longus and extensor pollicis brevis muscles, which cross an osteofibrous tunnel where they get inflamed due to friction (Figure 3). It preferably affects women in a ratio of 3:1⁸. It is often associated with hormonal changes⁹ and vicious positions with the wrist, and flexion and ulnar deviation, exactly the position adopted by mothers during breastfeeding, bathing, and the act of removing the baby from the crib or stroller.

Treatment consists of correcting posturing and the hormonal profile, hand therapy, use of orthoses, and infiltration with corticosteroids, bearing the difficulty of the puerperal woman in mind, when she has to leave home to undergo hand therapy and leave her small child and perform the multiple mother functions with the use of orthoses. In cases where clinical treatment fails, surgery to decompress the extensor tunnel is indicated.

RHEUMATIC DISEASES

Rheumatic diseases often affect the hand and wrist, causing deformities and destruction of the joint and tendon and capsuloligamentous structures. Unlike gout and ankylosing spondylitis, among others, rheumatoid arthritis and osteoarthritis commonly affect women¹⁰. The most common features are deformities in the fingers, with rheumatoid arthritis frequently affecting the proximal interphalangeal joints (Bouchard's node), while arthrosis preferentially affects the distal interphalangeal joints. The treatment is multidisciplinary, and the hand surgeon is responsible for preventing deformities through synovectomy and, when the deformities are already present, performing various corrective procedures, arthrodesis, and joint prostheses.

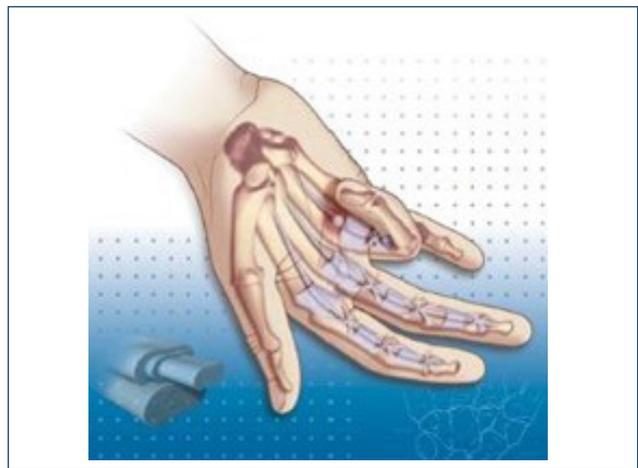


Figure 2. Graphical representation of the trigger ring finger, showing a nodule in the flexor tendon and the A1 pulley.



Figure 1. Graphical representation of the carpal tunnel with the presence of the median nerve and its ramifications to the fingers.

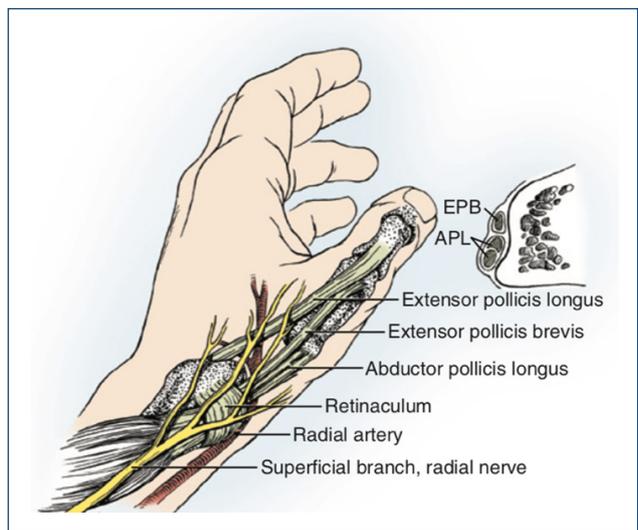


Figure 3. Anatomy of the lateral aspect of the wrist and hand, showing the first tunnel of the extensors and their anatomical relationships. EPB: extensor pollicis brevis; APL: abductor pollicis longus.

ARTHROSIS

Hands and wrists arthrosis mainly affects two regions: the distal interphalangeal joints of the fingers and the trapeziometacarpal joint of the thumb. With regard to sex, it affects women three times more than men¹¹.

Trapeziometacarpal arthrosis, also known as rhizarthrosis, can have a degenerative, inflammatory, traumatic, or idiopathic origin. It is a frequent condition, especially in women after the fifth decade of life, which causes weakness, pain, and deformity in the thumb, generating disability and a negative impact on the performance of daily and work activities. After the age of 55 years, rhizarthrosis affects 33% of women and 11% of men¹². Initially, the joint becomes painful, and in the final stage, complaints of joint stiffness and deformity of the thumb in adduction arise.

Treatment consists of anti-inflammatory medication, orthoses, hand therapy, infiltration, and surgery in cases that do not respond to clinical treatment.

Arthrosis of the distal interphalangeal joints, which are the ones closest to the fingertips, causes a progressive, albeit slow, increase in volume and deformation of the joint (Heberden's nodes) with the appearance of occasional translucent mucous cysts. They are limiting because of the deformity and, mainly, of pain. It is usually clinically treated due to the lower potential for functional impairment compared to rhizarthrosis and, occasionally, surgically treated in refractory cases¹³.

OCCUPATIONAL DISEASES

The demands of work for both sexes are usually similar, despite the bodily difference. Another factor is adaptation after a certain age, where postmenopausal changes are more evident in women¹⁴. Tenosynovitis and compressive syndromes, as mentioned before, are generally more common in women and in the postmenopausal period.

FRACTURE OF THE DISTAL END OF THE RADIUS

The radius is the most fractured bone in the human body, accounting for approximately 18% of fractures¹⁵, and is considered a sentinel fracture, which indicates an osteoporotic process. Osteoporosis is described as a microstructural degenerative process of the bone that leads to a decrease in bone mass, leading to bone fragility. Over the years, there is an increase in osteoporosis and a consequent increase in the incidence of fractures. Women after menopause, due to

estrogen deficiency, are twice as likely to have fractures of the end of the radius¹⁶. The worse the bone quality, the greater the fracture comminution and the more unstable the fracture, requiring surgical treatment. There are many possibilities for surgical treatment, with plate and screw fixation being the most popular method¹⁷.

FIBROMYALGIA

Another condition that virtually affects the entire body, including the hands and wrists, is fibromyalgia. Often, due to the rich clinical picture, it simulates many common affections of the upper limbs. It is a condition with a multidisciplinary approach, which is much more frequent in women, representing 80–90% of cases¹⁸.

COMPLEX REGIONAL PAIN SYNDROME/REFLEX SYMPATHETIC DYSTROPHY

Complex regional pain syndrome, which is also known as reflex sympathetic dystrophy, is a not very frequent complication, but with very bad consequences after surgical treatment of affections of the hands or even after trauma to the hand or wrist. It is as if the organism had a disproportionate response, much greater than the tissue aggression would require. The affected limb becomes edematous and painful, with changes in trophism and skin color. It is more common in women in the fifth decade of life and is probably related to the emotional state¹⁹. The treatment of this condition is a great challenge for us. It shall be addressed by a multidisciplinary team that includes a hand surgeon, a pain specialist, a physiotherapist, a hand therapist, and a psychotherapist²⁰.

Finally, the hand surgeon shall often differentiate and individualize the treatment when the patient is a woman, due to her different demands, her physiological pattern, and her social role.

AUTHORS' CONTRIBUTIONS

ACD: Data curation, Funding acquisition, Investigation, Methodology. **ATNF:** Data curation, Supervision. **RSMB:** Formal Analysis, Writing – original draft, Writing – review & editing. **RKO:** Project administration, Visualization. **SAMG:** Software. **LRN:** Validation. **MPR:** Validation. **SCAS:** Visualization. **ACC:** Writing – original draft, Writing – review & editing.

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