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Case # 2 - Carpal Tunnel Syndrome

Presentation: MB, a 26 year-old female, visits her physician with the complaint of intermittent numbness and tingling in her hands. She states that she experiences the tingling whenever she is driving her car, and that she often is awakened from sleep because of it. She is in her 3rd trimester of pregnancy, but is otherwise in good health. On examination, you determine that the tingling is localized along the first 3 digits. She also has difficulty gripping or making a fist, and seems to be prone to dropping things.

Activities:

- I. Review the bones and joints of the wrist and fingers.
 - Provide a diagram of, or demonstrate on an articulated wrist and hand, the arrangement of the carpal bones, metacarpal bones, and phalanges.
 - Name the bones of the wrist and hand.
 - Classify and describe the movements that can occur at the wrist, metacarpophalangeal, and interphalangeal joints.
 - Classify and describe the movements of the 1st carpometacarpal joint. How does this joint differ from the other carpometacarpal joints in both form and function?
- II. Discuss the attachments of the intrinsic and extrinsic muscles that act on the thumb and fingers.
 - Define the attachments of the thenar muscles.
 - Describe how you would test the strength and function(s) of these muscles.
 - Demonstrate the muscles that are used in performing a power grip and a precision grip.
- III. Review the innervation of the wrist and hand.
 - Identify the nerves that supply cutaneous innervation to the hand and also provide innervation to the muscles acting on the wrist and hand.
 - Discuss the formation, spinal segments and the main results of a lesion to these nerves.
- IV. Define Carpal Tunnel Syndrome
 - Discuss the boundaries of the Carpal Tunnel.
 - Define the contents of the Carpal Tunnel.

Conclusions:

- Describe 2 tests one can apply to confirm Carpal Tunnel Syndrome.
- Discuss how you would test to determine if there was loss of function of the thenar muscles.
- Relate the anatomy of the Carpal Tunnel to the symptoms that are associated with this syndrome.
- Why can pregnancy result in Carpal Tunnel Syndrome?