

Evaluation and Management of the Hand and Wrist: Review Questions

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QUESTIONS

Choose the single best answer for each question.

1. A 23-year-old left-handed woman presents with a recurrent dorsal ganglion cyst on her right wrist that has returned several times despite splinting and aspiration. It is 1.5 cm in size and bulges near the scapholunate ligament between the third and fourth extensor compartment. The patient has come primarily for cosmetic reasons and reports no pain but has discomfort while her hand is at rest. What is the treatment method for this patient's recurrent ganglion cyst?

 - (A) Aspiration followed by addition of sclerosing agents
 - (B) Continue serial aspirations using multiple needle punctures of the cyst site
 - (C) Superficial surgical excision of the ganglion cyst sac
 - (D) Surgical excision of the cyst by cutting the cyst stalk at the dorsal scapholunate ligament
 - (E) Traumatic rupture of the cyst with a direct blow
2. A 43-year-old woman presents with an extremely tender tip of her right index finger. The fingernail bed appears bluish, and she does not tolerate cold temperature (assessed by using an ice pack) during physical examination. She experiences pinpoint pain over the underlying mass that is well localized to the tip and does not radiate to joints. She also experiences sudden spasms of sharp pain at the site. She does not remember any penetrating injury to the finger. What is the most probable diagnosis for this patient's finger injury?

 - (A) Enchondroma
 - (B) Glomus tumor
 - (C) Hemangioma
 - (D) Pyogenic granuloma
 - (E) Schwannoma
3. A 22-year-old tennis player slips and falls awkwardly on her left wrist during a match. Plain radiographs taken in the emergency department on the day of the injury show a nondisplaced fracture in the middle third of the scaphoid bone. All of the following statements regarding management methods for successful union after a nondisplaced scaphoid fracture are correct EXCEPT:

 - (A) Closed reduction and percutaneous fixation offers a relatively short healing time of 8 to 12 weeks
 - (B) Middle third scaphoid fractures have better prognosis for healing than proximal pole fractures because of the vascular anatomy
 - (C) Partial removal of the scaphoid is only used as a last resort in select conditions because of resultant mechanical imbalances
 - (D) Radiographs are the primary resource for assessing union within the first 12 weeks
 - (E) The average postsurgical union rate after closed reduction for nondisplaced scaphoid fractures is approximately 90%
4. A 2-year-old child is brought to his pediatrician by his mother to have his fingertips examined. His right thumb appears red and swollen at the perionychium and seems to bother the child slightly. The pad of his thumb is neither swollen nor red, and there are no visible breaks in the skin. The child does not cry from pain when the thumb is palpated. While questioning the mother, the child sucks on the same thumb, and the mother admits he does this often. The redness and edema have appeared only over the last 4 days. Which of the following is the most likely cause of this patient's red, swollen thumb?

 - (A) Bacterial paronychia
 - (B) Felon

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- (C) Fungal paronychia
- (D) Herpetic whitlow
- (E) Tumor of the perionychium

ANSWERS AND EXPLANATIONS

1. **(D) Surgical excision of the cyst by cutting the cyst stalk at the dorsal scapholunate ligament.** Surgical excision of the ganglion cyst involves tangentially cutting the entire cyst stalk at its base. The stalk is exposed by blunt dissection and then cut free from its most common attachment site, the dorsal scapholunate ligament. Recurrence rates with this procedure are low as compared with nonsurgical methods. If the cyst sac is removed superficially, the preserved stalk may cause recurrence. Traumatic rupture of the cyst is no longer performed because of the risk of vascular damage and high recurrence rates. Although serial aspirations and aspirations followed by methylprednisolone have shown promising results, aspiration with multiple needle punctures or sclerosing agents is not recommended.¹
2. **(B) Glomus tumor.** Glomus tumors are neurovascular masses usually found at the fingertips and nail beds where there are numerous thermoregulatory glomus bodies. These bodies act as arteriovenous shunts. The triad of symptoms for glomus tumors includes cold hypersensitivity, pinpoint pain, and paroxysmal or spasmodic sharp pain. These masses also result in a bluish appearance of the fingernail bed. Pyogenic granuloma is an unlikely diagnosis, as these tumors are usually caused by penetrating injuries and foreign bodies, which cause a rapidly growing solitary lesion. Hemangioma is a congenital condition that appears in the first 4 weeks of life. Enchondromas are tumors of cartilage that commonly affect bones and joints of the hand. Schwannomas are usually asymptomatic swellings along axons of peripheral nerves.²
3. **(D) Radiographs are the primary resource for assessing union within the first 12 weeks.** Radiographs cannot accurately depict bone healing in the first 12 weeks after surgical procedures. Plain radiographs

are unreliable and are often a source of error in assessing scaphoid union. The best tool for assessing union at 12 weeks is computed tomography scan.³ Proximal pole scaphoid fractures are more likely to end in avascular necrosis than middle third fractures because of the vascular anatomy; therefore, middle third fractures have a better prognosis for healing. For nondisplaced scaphoid fractures, closed reduction and percutaneous fixation are favored because they offer a high postsurgical union rate of 90% and can allow return to activity in 8 to 12 weeks or sooner.⁴ Open reduction and internal fixation are preferred for displaced fractures. In all cases, partial removal of the scaphoid is a last resort and is generally not performed for athletes.³

4. **(A) Bacterial paronychia.** The location (perionychium) and rapid onset (4 days) of this patient's infection is consistent with an acute paronychia. Generally, bacterial infections are more acute, and fungal infections are chronic. Thumb-sucking is a common cause for such infections. This presentation is unlikely to be a felon because felons cause severe pain and develop in the pads of the fingers and near the distal interphalangeal joints. Herpetic whitlow, caused by a herpes simplex virus, causes pain and swelling and leaves small clear vesicles or cysts. A tumor is unlikely because of the location of infection and age of the child.⁵

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