JHS(E)

Journal of Hand Surgery
(European Volume)
2022, Vol. 47(11) 1187–1189

DOI: 10.1177/17531934221130915
journals.sagepub.com/home/jhs
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European Board of Hand Surgery (EBHS) Examination Questions

These questions reflect the type of questions that come up in the European Board of Hand Surgery (EBHS) Diploma exam.

For the multiple choice questions (MCQ) the marking has negative marks. Correct answer: +1 point; leave blank: 0 points; incorrect answer: –1 point.

The viva question is typical. Usually the candidate will be shown one or more photos of a clinical case, sometimes with X rays. There is then a list of points that the examiners expect to be discussed and mentioned by the candidate. This is termed minimum expected knowledge. I have not rehearsed all of the possible answers here in detail. But form your own opinion and discuss with colleagues.

The marking scheme is based on the Intercollegiate Marking Scheme, by kind permission of the joint committee on intercollegiate examinations (JCIE).

Further information is available at https://fessh.com/examination-committee/examination-2023/.

EBHS questions September 2022: questions

Question 1

In respect of the flexor tendons of the fingers, flexor digitorum superficialis (FDS) and flexor digitorum profundus (FDP)

A	At the level of the wrist, the FDS tendons to the index and middle fingers lie volar to the tendons to ring and little	T/F
B	FDP is innervated solely by the anterior interosseous nerve	T/F
C	FDP arises from the proximal one-quarter of the anterior and ulnar surfaces of the ulna, and from the ulnar half of the interosseous membrane	T/F
D	The excursion of FDS is 50 mm	T/F
E	The muscle belly of FDP to the index may be separate, the so-called flexor indicis profundus	T/F

Question 2

In amputations of the fingers

A	In an amputation at the level of the DIP (distal interphalangeal) joint, the flexor and extensor tendon ends should be sutured to one another wherever possible	T/F
B	In the 'lumbrical plus' finger, attempts at extension cause paradoxical flexion of the finger	T/F
C	In amputation at the level of the proximal phalanx, MCP (metacarpophalangeal) joint flexion may be improved by FDS tenodesis	T/F
D	In index finger ray amputation, hyperaesthesia may occur in the thumb/middle finger web space in over 50% of patients	T/F
E	Following ray amputation of the index finger, pronation and supination power are diminished equally	T/F

Question 3

Acute compartment syndrome (ACS)

A	The early phase is defined as a duration of pathological elevation of tissue pressure of less than 8 hours.	T/F
B	Neonatal compartment syndrome may present with a skin lesion on the lateral proximal arm ('sentinel lesion')	T/F
C	In the surgical management of a flexor compartment ACS, incision of the skin and of the underlying superficial muscle fascia will reliably decompress the flexor muscles of the forearm	T/F
D	Surgery should not be performed for upper limb ACS presenting more than 24 hours after onset	T/F
E	Creatinine kinase levels are of prognostic value in ACS	T/F

EBHS questions September 2022: answers

Question 1

In respect of the flexor tendons of the fingers, flexor digitorum superficialis (FDS) and flexor digitorum profundus (FDP)

A	At the level of the wrist, the FDS tendons to the index and middle fingers lie volar to the tendons to ring and little	F
B	FDP is innervated solely by the anterior interosseous nerve	F
C	FDP arises from the proximal one-quarter of the anterior and ulnar surfaces of the ulna, and from the ulnar half of the interosseous membrane	F
D	The excursion of FDS is 50 mm	F
E	The muscle belly of FDP to the index may be separate, the so-called flexor indicis profundus	T

At the level of the wrist the tendons to the middle and ring lie volar to the index and little. FDP is innervated by the anterior interosseous and ulnar nerves. FDP arises from the proximal three-quarters of the anterior and ulnar surfaces of the ulna, ranging from the coracoid process of the ulna to the proximal edge of pronator quadratus; from a common aponeurosis that is attached on the proximal three-quarters of the posterior surface of the ulna with the flexor carpi ulnaris (FCU) and extensor carpi ulnaris (ECU); from the ulnar half of the interosseous membrane of the forearm. There may be an origin from the radius, mostly for the muscle to the index. The excursion of the finger flexors is 70 mm. (Wolfe and Kozin, 2022; Yu, 2004).

Question 2

In amputations of the fingers

A	In an amputation at the level of the DIP (distal interphalangeal) joint, the flexor and extensor tendons should be sutured to one another wherever possible	F
B	In the 'lumbrical plus' finger, attempts at extension cause paradoxical flexion of the finger	F
C	In amputation at the level of the proximal phalanx MCP (metacarpophalangeal) joint flexion may be improved by FDS tenodesis	T
D	In index finger ray amputation, hyperaesthesia may occur in the thumb/middle finger web space in over 50% of patients	T
E	Following ray amputation of the index finger, pronation and supination power are diminished equally	F

Suturing the flexor and extensor over the end of the middle phalanx will lead to stiffness in the finger. In the lumbrical plus finger, the lumbrical retracts with the flexor. The lumbrical is an intrinsic extensor of the PIP (proximal interphalangeal) joint. Thus, the PIP joint extends as the patient attempts to flex. FDS tenodesis may improve MCP flexion from 45° to nearer 90°. The FDS is sutured to the distal end of the proximal phalanx. Digital nerve sensitivity has been reported in up to 59% of patients (Murray et al., 1977). It may be of delayed onset. Pronation is diminished by 50%, supination by only 20% (Wolfe and Kozin, 2022).

Question 3

Acute compartment syndrome (ACS)

A	The early phase is defined as a duration of pathological elevation of tissue pressure of less than 8 hours	F
B	Neonatal compartment syndrome may present with a skin lesion on the lateral proximal arm ('sentinel lesion')	T
C	In the surgical management of a flexor compartment ACS, incision of the skin and of the underlying superficial muscle fascia will reliably decompress the flexor muscles of the forearm	F
D	Surgery should not be performed for upper limb ACS presenting more than 24 hours after onset	F
E	Creatinine kinase (CK) levels are of prognostic value in ACS	T

The early phase of ACS is defined as up to 4 hours from onset of raised intracompartmental pressure. The sentinel lesion was present in all 24 patients

with neonatal forearm compartment syndrome studied retrospectively by Ragland (Ragland, 2005). In the management of flexor compartment syndrome, it is important to decompress the deep flexor compartment. Incising only the superficial fascia will not achieve this. Late decompression may still be worthwhile in the upper limb. Creatine kinase (CK) levels of >300 units/litre are strongly suggestive of ACS following forearm injury. Levels higher than 10,000 U/L are predictive of a poor outcome (Stevanovic and Sharpe, 2022).

Clinical case

This 27-year-old right-handed car salesman has fallen on his outstretched hand playing football.

He presents acutely to your emergency service in significant pain.

He is otherwise fit and well.

Here is the posterior-anterior (PA) radiograph of the wrist.

Questions

What is the diagnosis?

What other radiological signs are you looking for?

How would you manage this patient?

Answer

Minimum expected knowledge.

1. Recognize that the lunate is not normal. Suspect perilunate dislocation and *ask for lateral film*.
2. Recognize the following radiological signs and say you will look out for these:
   - Confirm the diagnosis.
   - Discuss the radiological findings that would be expected in acute ligament injury in the carpus (including widened scapholunate interval, 'piece of pie' sign in the lunate, ring sign in the scaphoid, disruption of Gilula's lines).
   - Be aware of the risk of an associated scaphoid fracture.
3. Pertinent clinical history and examination:
   - Assess median nerve function.

Management

1. Describe the Mayfield and Johnson concept of carpal ligament injury (Mayfield et al., 1980).
2. Be able to describe the Tavernier manoeuvre to reduce this.
3. Comment on the urgency of surgery in your view.
4. Describe your management of this injury. Surgical or non-surgical? If surgical, dorsal or volar or combined approach. Which structures are you aiming to repair (Kinghorn et al. 2021)?
5. Postop management.

Comment. This is a bread-and-butter case that we would expect you to score well on. Although these injuries are not common, they will end up in your clinic and need skilful and prompt attention. The diagnosis is there in the first radiograph.

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