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European Board of Hand Surgery (EBHS) Examination Questions

Question 1 The radial artery

A	Is of wider calibre than the ulnar artery	T/F
B	In the mid forearm runs medial to the superficial branch of the radial nerve (SBRN)	T/F
C	Supplies the median nerve in the mid forearm	T/F
D	Passes radial to the origin of the first dorsal interosseous muscle	T/F
E	Palmar carpal branch anastomoses with the anterior interosseous artery	T/F

Question 2 Pyoderma gangrenosum

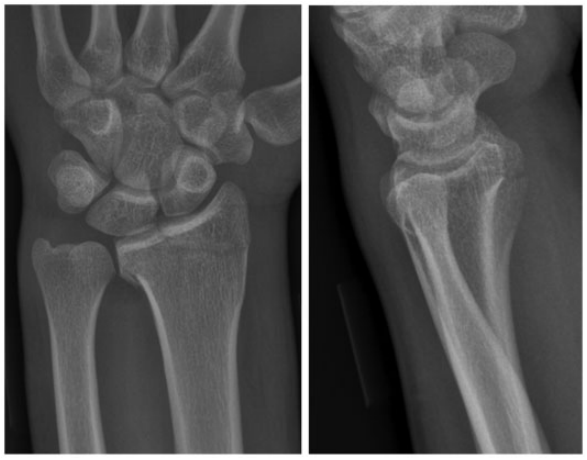
A	Is caused by Streptococcal infection	T/F
B	The characteristic appearance is of an ulcer with an overhanging purplish border	T/F
C	The diagnosis should be confirmed by biopsy	T/F
D	The prevalence in patients with ulcerative colitis is 5%	T/F
E	Typically responds to oral steroid therapy	T/F

Question 3 Intrinsic tightness

A	Is characterized by MCP (metacarpophalangeal) extension and IP (interphalangeal) flexion	T/F
B	May be secondary to compartment syndrome of the hand	T/F
C	In the presence of intrinsic tightness, passive IP joint flexion improves with MCP flexion	T/F
D	The side of predominant tightness may be evaluated by performing the intrinsic tightness test with the finger in ulnar then radial deviation	T/F
E	May be helped by release of the sagittal bands at the level of the MCP joint	T/F

Clinical case

A 50-year-old, fit and healthy right-handed warehouse man sustains this left wrist fracture as an isolated injury in a simple fall at work.



You decide to treat this non-operatively by plaster cast immobilization. You remove the cast at 5 weeks and discharge him to the physiotherapy department.

He asks for another fracture clinic appointment at 8 weeks saying that he is having difficulty in moving his thumb.

What is the likely diagnosis? What clinical test would you use to demonstrate this clinically? What investigations would you order to confirm your diagnosis? How would you manage this problem?

EBHS questions March 2023 Answers

Question 1 The radial artery

A	Is of wider calibre than the ulnar artery	F
B	In the mid forearm runs medial to the superficial branch of the radial nerve (SBRN)	T
C	Supplies the median nerve in the forearm	T
D	Passes radial to the origin of the first dorsal interosseous muscle	F
E	Palmar carpal branch anastomoses with the anterior interosseous artery	T

The ulnar artery is wider than the radial artery. The radial artery runs medial to the SBRN in the forearm (Henry's approach runs between the two) (Henry, 1995). The artery passes under the tendons of abductor pollicis longus (APL) and extensor pollicis brevis (EPB) before crossing the anatomical snuffbox. It passes between the two heads of the first dorsal interosseous before forming the deep palmar arch (Yu et al., 2004). The ulnar artery supplies the median nerve just above the wrist, but in the forearm the predominant supply is from the radial artery (Blunt, 1959). The palmar carpal branch runs distal to the pronator quadratus and joins the palmar carpal branch of the ulnar artery and the anterior interosseous nerve. This is the branch on which is based the graft described by Kuhlmann et al. (1987).

Question 2 Pyoderma gangrenosum

A	Is caused by Streptococcal infection	F
B	The characteristic appearance is of an ulcer with an overhanging purplish border	T
C	The diagnosis should be confirmed by biopsy	F
D	The prevalence in patients with ulcerative colitis is 5%	T
E	Typically responds to oral steroid therapy	T

Pyoderma is not an infectious condition, although it is commonly mistaken for such. It is an ulcerative neutrophilic dermatosis. It is more common in the lower limbs (70–80%) than in the upper limbs (16%). In 20 reported cases in the English literature none were initially diagnosed correctly. It is associated with an underlying immunological or inflammatory bowel disease in greater than 50% of cases. Biopsy will cause an idiopathic pathergic response with extension of the disease and is thus best avoided. Response with oral steroids may occur within 1 week (Sabapathy et al., 2022).

Question 3 Intrinsic tightness

A	Is characterized by MCP (metacarpophalangeal) extension and IP (interphalangeal) flexion	F
B	May be secondary to compartment syndrome of the hand	T
C	In the presence of intrinsic tightness, passive IP joint flexion improves with MCP flexion	T
D	The side of predominant tightness may be evaluated by performing the intrinsic tightness test with the finger in ulnar then radial deviation	T
E	May be helped by release of the sagittal bands at the level of the MCP joint	T

In intrinsic tightness, flexing the MCP will relax the intrinsics and thus allow increased IP flexion. Bunnell described this test, expanding on work by Finochietto (1920).

Intrinsic tightness may be caused by adhesions, contractures, displacement or spasticity of the musculature from a variety of causes (Tosti et al., 2013).

If there is more tightness with the finger in ulnar deviation, the contracture is likely to be greater on the radial side, and vice versa (Smith, 2002).

Treatment in the first instance may be with physiotherapy. For patients with spasticity, botulinum toxin may be considered. For mild cases, resection of the ulnar or radial lateral bands can improve proximal interphalangeal (PIP) range of movement.

Clinical case

The likely diagnosis is rupture of extensor pollicis longus (EPL) tendon. This occurs in 0.007–0.88% of distal radius fractures in adults (Song et al., 2013). The mechanism has been postulated to be damage on the edge of the fracture or ischaemic necrosis of the tendon (Christophe, 1953).

This may be demonstrated by asking the patient to place his palm flat on the table and perform retropulsion of his thumb. In case of doubt an ultrasound scan may be indicated, but normally this diagnosis may be made clinically. *(It is perfectly acceptable in the exam to say that you would not order any investigations if the diagnosis is not in doubt.)*

How would you manage this problem? You will wish to discuss operative and non-operative management. The most common treatment is extensor indicis proprius (EIP) to EPL tendon transfer. However, other tendon transfers (extensor carpi radialis brevis (ECRB) and brachioradialis (Ganon et al., 2020) have also been described, together with Z turndown and intercalary tendon graft (Lo et al., 2021; Magnell et al., 1988). Primary repair of the ruptured EPL tendon is usually not possible. The proximal tendon is likely to have retracted significantly, thus precluding the two ends coming together.

We would expect you to know how to approach the operation of an EIP to EPL tendon transfer in detail. Critical points are determining if the patient has an EIP, incisions (how many and where, mention the radial nerve and how you will avoid damage to this), which tendon to harvest after exposure of EIP and extensor communis (EDC) to the index, how to tunnel the EIP tendon to pass it to the EPL stump.

You will need to have a clear idea of your chosen tendon anastomosis. You may consider a Pulvertaft weave (how many passes – Graham et al. (2022) suggest that three is the optimal number, exact

technical details) or a Friden weave or alternative (Graham et al., 2022; Pulvertaft, 1956). A knowledge of the literature comparing the various suture techniques will gain extra marks (for instance Bidic et al., 2009; Brown et al., 2010; Wilhelm et al., 2021). You will need to know what suture to use and how you are going to judge the tension of repair. Low et al. (2001) suggest that the thumb should be in full extension and wrist in neutral during the tendon suturing, although other authors suggest otherwise (Jung et al., 2014). You will also need to be able to explain your postoperative regime.

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