Questions for this month's clinical challenge are based on articles in this issue. The style and scope of questions is in keeping with the MCQ of the College Fellowship exam. The quiz is endorsed by the RACGP Quality Assurance and Continuing Professional Development Program and has been allocated 4 CPD points per issue. Answers to this clinical challenge will be published next month, and are available immediately following successful completion online at www.racgp.org.au/clinicalchallenge. Check clinical challenge online for this month's completion date. **Kath O'Connor**

**SINGLE COMPLETION ITEMS**

**DIRECTIONS** Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the most appropriate statement as your answer.

### Case 1 – Bill Carroll

Bill Carroll, 40 years of age, is a house painter. He has been working long hours, trying to finish a job before the completion date. He presents with pain in his right shoulder for approximately 4 weeks. You take a full history including 'red flags', and identification of biological and psychosocial risk factors (yellow flags).

### Question 1

**Which of the following might indicate a 'red flag' condition:**

A. work above shoulder height
B. psychological distress
C. pain which is worse with movement
D. constant pain in the upper humerus
E. a history of epilepsy.

### Question 2

**There is no history of injury and no history to suggest a 'red flag' condition. Bill's pain is worse with overhead activities. You suspect rotator cuff dysfunction. His painting requires him to work above shoulder height much of the time. He is a self employed subcontractor and has had to take time off work over the past 4 weeks. He is worried he might lose his current contract. You take note of these important psychosocial factors and perform an examination. Which of the following findings on examination would support your suspicion of rotator cuff dysfunction:**

A. positive apprehension test
B. painful adduction
C. painful abduction 60–120 degrees
D. winging of the scapular
E. pain on external rotation in adduction.

### Question 3

**On examination of Bill's shoulder joint, inspection, passive range of movement and strength testing is normal. Bill is tender over the supraspinatus tendon and complains of pain on active abduction particularly between 60 and 120 degrees. Hawkins impingement test is negative. You organise the following investigations:**

A. X-ray
B. none
C. ultrasound
D. FBE, ESR, ANA, rheumatoid factor
E. X-ray, ultrasound and MRI.

### Question 4

**You educate Bill and negotiate a management plan. Which treatment modalities are indicated:**

A. rest for at least 3–4 weeks
B. subacromial space lignocaine injection
C. exercises and modification of duties if possible
D. prednisolone 25 mg/day
E. reassurance that shoulder pain rarely becomes chronic; he can tell his employer he will be back on site within the week.

### Case 2 – Anita Mazzetti

Anita Mazzetti, 25 years of age, is a student. She presents complaining of pain in the front of the knee increasing over 5 weeks. There is no history of injury.

### Question 5

**What is the likely diagnosis:**

A. anterior cruciate ligament (ACL) tear
B. patellofemoral syndrome
C. excessive posterior pelvic tilt
D. rheumatoid arthritis
E. idiopathic scoliosis.

### Question 6

**You make an assessment of Anita's gait. What in particular are you looking for on examination to confirm your suspected diagnosis:**

A. increased lumbar lordosis
B. decreased knee flexion at heel strike and mid stance
C. increased swing phase of the contralateral leg
D. decreased rear foot pronation
E. excessive arm swing.

### Question 7

**During your examination you notice an asymmetry of posture including increased lumbar lordosis, forward leaning of the body and increased forward tilt of the pelvis. This pattern occurs in:**

A. shoulder (proximal) cross syndrome
B. tight gluteus maximus, medius and minimus
C. pelvic (proximal) cross syndrome
D. medial pelvic shift
E. tensor fascia lata weakness.

### Question 8

**Which of the following will NOT form part of your management plan:**

A. X-rays
B. explanation
C. stretching and core strength building exercises
D. referral to a physiotherapist (or osteopath, or chiropractor)
E. addressing ergonomic factors.

### Case 3 – Wayne Nalingu

Wayne Nalingu, 22 years of age, is a football player who has just started playing for the Brisbane Lions reserves. He presents with central groin pain worse with exercise over the past 6 weeks.

### Question 9

**You perform a physical examination. He has tenderness over the pubic symphysis and pain on squeeze and adduction testing. What is the likely diagnosis:**

A. osteitis pubis (+/- incipient hernia)
B. adductor tendon pathology
C. osteoarthritis of the hip
D. labral tear
E. gluteus medius tendonitis.

### Question 10

**Which of the following is the appropriate investigation and result to confirm the diagnosis:**

A. X-ray showing avulsion of the adductor tendon
B. CT showing a 'bump' on the superior femoral neck adjacent to the margin
C. ultrasound showing tendinopathy of the gluteus medius minimus or tensor fascia lata tendons
D. arthroscopy showing loose bodies
E. CT or MRI showing degenerative changes to cortical bone.

### Question 11

**You discuss a management plan with Wayne including:**

A. increased training intensity and frequency
B. advice to avoid preseason training
C. advice to avoid quadrant positioning
D. core stabilisation exercises
E. endoscopic hernia repair.

### Question 12

**Wayne asks when he can return to training. You suggest:**

A. immediate return to full training
B. a graduated return to sport with rest from weight bearing exercise for about 12 weeks
C. return to training once the pain has been controlled with nonsteroidal anti-inflammatory drugs
D. complete rest for 3 months
E. wait until after joint replacement.

## Case 4 – Shelley and Bob Watson

Shelley Watson, 24 years of age, presents with pain in her Achilles tendon after landing awkwardly during a netball match. You take a history and examine her and suspect Achilles tendonitis. You explain that you would like to do an ultrasound in order to rule out a tear of the tendon.

### Question 13

**Shelley is worried about exposure to radiation and asks about the safety of ultrasound. You tell her that:**

A. ultrasound exposes the patient to some radiation but it is minimal and only harmful if repeated scans are performed
B. ultrasound involves no exposure to radiation
C. ultrasound is contraindicated in patients with a pacemaker
D. the safety of the test is operator dependent
E. ultrasound can make the pain worse.

### Question 14

**Shelley agrees to the ultrasound and presents the next day for the report, this time accompanied by her father who says he has a 'sore right big toe'. You explain that Shelley's ultrasound reveals a partial rupture of the Achilles tendon. The report indicates that the operator has allowed for anisotropy. Anisotropy refers to:**

A. the white perimysium
B. neovessel development within tendons
C. the property of a tendon whereby reflection of soundwaves at different angles is variable
D. the use of an ultrasound scanner with a transducer frequency of less than 7 MHz
E. comparison to the other side using identical landmarks.

### Question 15

**Shelley's father Bob, 60 years of age, has poorly controlled type 2 diabetes. He takes metformin 500 mg three times per day and glibenclamide 7.5 mg/day. He denies any other past history. He works casually as a truck driver and is worried about missing too much work. Examination reveals classic gout of the right great toe. Which of the following is true:**

A. colchicine is first line treatment for gout
B. GI side effects of colchicine are uncommon
C. if there are no contraindications, indomethacin 50 mg orally three times per day is indicated
D. urate level should be performed before starting treatment
E. colchicine is contraindicated as he is diabetic.

### Question 16

**You notice that NSAIDs are in the warning box on Bob's Medical Director file. You ask him about this and he remembers that he vomited blood last year and was found to have a stomach ulcer. Choose the most correct option:**

A. oral corticosteroids would be the best option for Bob
B. colchicine 1.0 mg followed by 0.5 mg three times per day may be suitable
C. colchicine 1 mg orally followed by 0.5 mg every 2 hours has high efficacy and low side effect profile
D. indomethacin with PPI cover if safe for Bob
E. diclofenac is safe for Bob as a short term treatment.

## ANSWERS TO MAY CLINICAL CHALLENGE

### Case 1 – Dayani Dissinyake

**1. Answer C**
The ideal time for patients to present for travel advice is 6–8 weeks before travel.

**2. Answer B**
Patients visiting friends and relatives (VFR) are at higher risk of acquiring travel illness. Travel insurance is indicated for all travellers. Dayani may be naturally immune to hepatitis A but this must be checked with serology.

**3. Answer A**
DEET containing insect repellent is indicated to avoid mosquitoes even if she takes malaria chemoprophylaxis. Local water should be avoided if possible no matter what her vaccination status. She may decide to drink bottled water or use water purification tablets or a filter. Acetazolamide is used for prophylaxis against altitude sickness when travelling above 3000 m. Travel vaccinations and medications are relatively expensive. Recommendations for vaccinations depend on the traveller's illness epidemiology in the location of travel.

**4. Answer D**
A 'gastro kit' containing rehydration solution, loperamide, tinidazole and norfloxacin is recommended for travellers to less developed countries.

### Case 2 – Daniel O'Reilly

**5. Answer C**
Enterotoxogenic *E. coli* is the most common bacterial cause of traveller's diarrhoea.

**6. Answer C**
Identification is necessary as the diarrhoea is bloody, profuse and prolonged. Daniel does not require blood culture or thick and thin films as he does not have a fever.

**7. Answer C**
Daniel has bacillary dysentery and requires antibiotic treatment according to culture and sensitivities. EIEC is often sensitive to ciprofloxacin.

**8. Answer B**
Daniel's symptoms are consistent with transient lactose intolerance, which results from damage to intestinal mucosa and usually resolves after a couple of weeks.

### Case 3 – Sally Fellowes

**9. Answer C**
If immunisation courses have been interrupted, continue where left off regardless of the time since the last injection. Multiple vaccines can be co-administered, although this may increase the risk of local side effects. Hepatitis B vaccine does not cover for hepatitis A.

**10. Answer B**
A dTpa booster is indicated for travellers if it is 10 years since the last dose. Pneumococcal vaccine is only indicated in high risk travellers. Incidence of pertussis is increasing so a booster containing pertussis vaccine is preferred.

**11. Answer C**
In standard doses, the oral and injectable forms of typhoid vaccine are of similar efficacy; in the order of 50–70%. Oral typhoid vaccination provides better and longer protection if four capsules are given. Two 3 dose packs must be purchased. The hepatitis A vaccine offers immediate protection after a single dose. A single dose of hepatitis A vaccine gives better protection than a single dose of Twinrix (hepatitis A and B). Hepatitis A is more common than typhoid.

**12. Answer B**
Meningococcal vaccination is indicated, as Sally will be trekking in a remote area. A polio booster could be offered but polio is not endemic in Borneo. Cholera, yellow fever, Japanese encephalitis and rabies vaccination are not indicated in this case.

### Case 4 – Margaret Malcolm

**13. Answer C**
Malaria prophylaxis is indicated for travel to Central and Eastern Africa. Mosquito bite prevention including with a DEET containing insect repellent is important even in those taking malaria prophylaxis.

**14. Answer D**
Pregnancy, breastfeeding, allergy to tetracycline, psychiatric history, history of epilepsy and cardiac conduction disorders are all important to identify before deciding on appropriate malaria prophylaxis. History of oculogyric crisis with stemetil is not relevant.

**15. Answer E**
Doxycycline is contraindicated as Margaret has a history of tetracycline allergy. Mefloquine is contraindicated in patients with a history of depression, anxiety or other psychiatric illness. Malarone is the most appropriate medication in this case.

**16. Answer A**
Current information is freely available on WHO and CDCP websites, specifically:

- World Health Organisation. International travel and health. Available at www.who.int/ith/en/
- Centers for Disease Control and Prevention. Health information for international travel. Available at www.cdc.gov/travel/yb/index.htm.

Information is available travel medicine specific databases but these are expensive. Infectious diseases textbooks may be out of date.

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