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Short-term results following two-stage revision for periprosthetic joint infection (Du Plessis J, Greeff R, Singh V, Fang N, Frey CT)

1. According to the host classification by McPherson, which of the following scenarios represent a type C host?

- | | |
|---|---|
| a. A 73-year-old male with hypertension and gout, presenting with a draining sinus two months after total hip arthroplasty | A |
| b. An 84-year-old female with diabetes and chronic obstructive pulmonary disease presents with an active draining sinus for four months following total knee arthroplasty | B |
| c. A 54-year-old male with HIV infection for the last two years and on antiretrovirals. His CD4 count is 300 and viral load undetectable. He presents three weeks following total hip arthroplasty with pain and erythema | C |
| d. A 74-year-old female with previous bicolunar plating of a tibial plateau fracture through two incisions presents with wound breakdown following total knee arthroplasty two weeks ago | D |
| e. A 62-year-old male with chronic alcoholism develops a draining sinus four weeks following total hip arthroplasty for avascular necrosis | E |

2. Which of the following do not represent an increased risk of reinfection following a two-stage revision at one year?

- | | |
|--|---|
| a. Type C host | A |
| b. Pus found at reimplantation stage | B |
| c. Positive frozen section at time of reimplantation | C |
| d. Positive alpha defensin at reimplantation | D |
| e. Limited debridement | E |

3. The current gold standard for the management of Tsukayama 4 periprosthetic joint infection includes:

- | | |
|---|---|
| a. Two-stage revision with explant and antibiotic cement spacer, six weeks targeted antibiotics, two weeks antibiotic-free period and reimplantation when no signs of infection | A |
| b. Single stage revision with thorough debridement and empiric antibiotics for six weeks | B |
| c. Thorough debridement with antibiotics and implant retention (DAIR) followed by six weeks of antibiotics | C |
| d. Wound debridement followed by six weeks of targeted antibiotics | D |
| e. Explant and debridement followed by arthrodesis | E |

Low dislocation rates achieved when using dual mobility cup hip implants for femur neck fractures (Erasmus LJ, Fourie FF, Van der Merwe JF)

4. Which of the following is not a risk factor for hip dislocation after total hip arthroplasty?

- | | |
|----------------------------|---|
| a. Dementia | A |
| b. Alcohol abuse | B |
| c. Age older than 60 years | C |
| d. Psychiatric disorders | D |
| e. Neuromuscular disorders | E |

5. Which of the following is true regarding dual mobility cups:

- | | |
|---|---|
| a. Has three articulations | A |
| b. Has two articulations | B |
| c. Only available in cemented options | C |
| d. Only available in non-cemented options | D |
| e. None of the above | E |

6. The study in this journal looking at dual mobility cups used for femur neck fractures found (at one year after surgery) a dislocation rate of:

- | | |
|---------|---|
| a. 0% | A |
| b. 1.3% | B |
| c. 2.2% | C |
| d. 4.3% | D |
| e. 8.5% | E |

Percutaneous intra-articular tranexamic acid following total knee arthroplasty without drainage to reduce blood loss (Gericke E, De Beer J, Deacon M, Marais LC)

7. Which of the following methods of administering tranexamic acid are preferred, considering outcome and possible side effects?

- | | |
|--------------------|---|
| a. Intravenous | A |
| b. Intra-articular | B |
| c. Oral | C |
| d. Topical | D |
| e. Inconclusive | E |

8. Blood loss is a common and challenging complication in total knee replacement and has been reported to range from:

- | | |
|-----------------|---|
| a. <300 ml | A |
| b. 300–500 ml | B |
| c. 500–700 ml | C |
| d. 700–1 700 ml | D |
| e. >1 700 ml | E |

9. Regarding the biomechanical effect of tranexamic acid reducing blood loss, which is the most appropriate statement?

- | | |
|---|---|
| a. Clot formation at the surgical site is promoted due to prevention of the formation of plasmin by blocking the conversion of plasminogen to plasmin | A |
| b. Tranexamic acid is a synthetic antifibrinolytic, blocking plasminogen directly | B |
| c. Fibrin degradation and breakdown of clots are prevented due to prevention of the formation of plasmin by blocking the conversion of plasminogen to plasmin | C |
| d. Tranexamic acid has a higher coagulation effect given intravenously | D |
| e. Tranexamic acid potency to reduce blood loss is due to the high concentration that is achieved at the target location | E |

The use of three-dimensional models in tibial plateau fractures (Joubert JA)

10. According to the author, can we improve the reliability of tibial plateau fracture classification by utilising a 3D printed model (in addition to 3D CT scans)?

- | | |
|--|---|
| a. Yes, for both the Hohl and Moore and the Schatzker classification systems | A |
| b. No, 3D printed models do not improve the reliability of fracture classification | B |
| c. Yes, but only when using the Schatzker classification | C |
| d. Yes, but only when using the Hohl and Moore classification | D |
| e. No, except for the AO classification system | E |

11. Taking into consideration that this is a level 4 study, are 3D printed models useful when managing tibial plateau fractures?

- a. Yes, because the reliability of classification is improved A
- b. Yes, the use of 3D models resulted in decreased length of hospital stay and less surgical blood loss B
- c. No, 3D printed model manufacturing only contributes to patient radiation exposure C
- d. Yes, observers found 3D models superior to 3D CT in terms of spatial awareness and one's ability to estimate how much bone graft is required D
- e. No, 3D printed model use resulted in more patients theoretically receiving surgical management than needed E

Correlation of Soft tissue Projection in Injured NEcks (CSPINE): Prevertebral soft tissue measurement in paediatric cervical spine trauma (McCaul J, Horn A, McCaul M, Dix-Peek S)**12. A 10-year-old female falls off her bunk bed and presents to your emergency department with a distal radius fracture. Which statement is correct?**

- a. C-spine injuries are common in the paediatric population and therefore this patient should definitely have a full C-spine X-ray series A
- b. Intubation will significantly increase the appearance of the soft tissue shadow on the upper part of the C-spine on lateral X-ray B
- c. In children, the lower C-spine is much more likely to be injured than the upper C-spine C
- d. Soft tissue swelling on lateral C-spine X-ray correlates well with bony injury D
- e. Soft tissue swelling on lateral C-spine X-ray cannot be measured as a ratio of vertebral body width E

13. In this patient, you suspect that the prevertebral soft tissue is swollen by its appearance on the lateral C-spine X-ray. Which of the following measurements would alert you to the possibility of injury and prompt further investigation (e.g. CT scan or MRI)?

- a. The soft tissue in front of the C6 vertebral body is 65% of the width of the C7 vertebral body A
- b. The soft tissue in front of C2 is more than 20% of the C3 vertebral body B
- c. The soft tissue in front of the C6 vertebral body is more than 55% of the width of the C7 vertebral body C
- d. The soft tissue in front of the C2 vertebral body is 38% of the width of the C7 vertebral body D
- e. The soft tissue in front of the C2 vertebral body is more than 55% of the width of the C7 vertebral body E

14. You apply the CSPINE rule to interpret her X-ray. This rule has a sensitivity of about 33–45% and a specificity of around 82–93%. This means:

- a. It is a good screening tool A
- b. It will have a good positive predictive value as C-spine injury has a high prevalence B
- c. It is useful to rule in the chance of cervical spine injury C
- d. It has a low false negative rate D
- e. It is useful to rule out the chance of cervical spine injury E

Epidemiology of paediatric and adolescent fractures admitted to a South African provincial hospital (Strydom S, Hattingh C, Ngcelwane M, Ngcoya N)**15. Which of the following is not a risk factor to identify child abuse?**

- a. Unplanned pregnancy A
- b. Children less than 5 years of age B

- c. Unemployed parents C
- d. Femur fracture in children less than 1 year of age D
- e. Multiple fractures in different stages of healing E

16. Which of the following strategies may best decrease the number of children admitted with fractures?

- a. Better gun control A
- b. Improved playground supervision at school B
- c. Build pedestrian sidewalks in communities C
- d. Home traction treatment of femur fractures D
- e. Enforce the use of child seats in cars E

17. Regarding PVAs in children, which of the following statements is true?

- a. Most fractures occur in the upper limbs A
- b. Educational programmes have not been proven to reduce the incidence B
- c. Most accidents occur at night C
- d. The majority occur in pre-school children D
- e. These children tend to suffer more severe injuries E

The risk of early complications in patients with hand infections (Verhoef H, Marais LC, Ryan PV, Rollinson PD)**18. The following are all independent risk factors for development of early complications in hand infections, except:**

- a. Polymicrobial infections A
- b. Human bites B
- c. Diabetes mellitus with HBA1C 7.8% C
- d. HIV infection with CD4 count 180 cells/mm³ D
- e. Diabetes mellitus with HBA1C 10.1% E

19. Regarding the bacteriology of hand infections, which one of the following statements is correct?

- a. Polymicrobial infections are found more frequently than isolated *S. aureus* infections in HIV-positive patients A
- b. Polymicrobial infections are found more frequently than isolated *S. aureus* infections in diabetic patients B
- c. *S. epidermidis* is the most frequently isolated organism C
- d. *Eikenella corrodens* is the most frequently isolated organism in HIV-positive patients D
- e. HIV-positive patients and poorly controlled diabetic patients are more likely to be affected by polymicrobial infections than patients who are HIV negative and non-diabetic E

Management of femur neck fractures in young adults under the age of 60 years (Blake CA, Van Staden GF, Van der Merwe JF, Matshidza S)**20. The most important aspect of hip-preserving surgery in young adults under the age of 60 years with femur neck fractures is:**

- a. Capsulotomy A
- b. Surgical timing B
- c. Open reduction C
- d. Quality of reduction and fixation D
- e. Choice of internal fixation E

21. Which surgical implant should be avoided in Pauwels type 3 fractures?

- a. Cannulated screws A
- b. Proximal femoral locking plate B
- c. Dynamic hip screw C
- d. Cephalomedullary device D
- e. Hybrid plate E

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