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3D-printed cable tie-assisted static progressive splints for fixed flexion contractures of the proximal phalangeal joint: a proof of concept study (Rocher A, O'Connor M, Marais LC)

1. PLA (polylactic acid) 3D-printable material:

a. Is relatively expensive compared to other printable plastics — A
b. Is toxic to humans — B
c. Can only be printed on expensive commercial 3D printers — C
d. Is biodegradable — D
e. Has a tensile strength of 370 megapascals — E

2. Regarding the use of a cable tie to effect stretch:

a. A cable tie allows dynamic tension — A
b. The cable tie will stretch over time — B
c. The cable tie should be applied parallel to the lever arm of the contracture — C
d. Cable ties are used in commercially available splints — D
e. The cable tie allows re-application at the same amount of tension — E

3. Which of the following proposed benefits of utilising 3D printed splints in practice is *incorrect*?

a. 3D-printed splints are good for prototyping different design ideas — A
b. Learning to design splints on 3D software is easy — B
c. Design files can be easily shared for use at other centres — C
d. Designs can be easily scaled for different finger dimensions — D
e. 3D-design software is open source — E

4. 3D splints for the hand have been used previously for which application, as discussed in this article?

a. Burn contractures — A
b. Dupuytren's disease — B
c. Finger amputations — C
d. Mallet fingers — D
e. Jersey fingers — E

Let's talk business: a public-private partnership in soft tissue knee surgery (Yu WC, Le Roux J, Von Bormann R, Held M)

5. What is the primary goal of public-private partnerships (PPPs) in South African orthopaedic surgery departments?

a. Increase patient volumes in private hospitals — A
b. Reduce waiting time for surgery in public hospitals — B
c. Generate revenue for non-profit organisations — C
d. Improve efficiency and infrastructure in public hospitals — D
e. Enhance the training capacity of private hospitals — E

6. What was the most common procedure performed during the study period?

a. Anterior cruciate ligament reconstruction — A
b. Medial patellofemoral ligament reconstruction — B
c. Meniscus debridement ± repair — C
d. Osteochondral autograft transfer (OAT) — D
e. Manipulation under anaesthesia — E

7. What percentage of the total surgical training time was provided by the private hospital?

a. 16% — A
b. 30% — B
c. 39% — C
d. 51% — D
e. 64% — E

8. Which domain had the lowest patient satisfaction score in the Hospital Consumer Assessment of Health Providers and Systems (HCAHPS) survey?

a. Nurse communication — A
b. Doctor communication — B
c. Communication about medicines — C
d. Cleanliness of hospital environment — D
e. Discharge information — E

The use of a mobile software application to improve the management of open tibia fractures in a resource-constrained environment (Mzamo S, Rajpaul J, O'Connor M, Arnold J, Marais LC)

9. What was the statistically significant difference in time from referral to assessment at the tertiary centre between the two groups?

a. 5 hours VULA group and 6 hours HWRL group — A
b. 10 hours VULA group and 6 hours HWRL group — B
c. 5 hours VULA group and 20 hours HWRL group — C
d. 20 hours VULA group and 4 hours HWRL group — D
e. 6 hours VULA group and 6 hours HWRL group — E

10. Comparing referral methods and complication rates, our study showed a statistically significant association between using the VULA app and a reduced complication rate. This may be due to:

a. Improved initial management — A
b. Reduced timing of referral from injury — B
c. Reduced timing of referral from the base hospital — C
d. Early antibiotics administration — D
e. None of the above — E

11. What was the primary outcome of interest of this study?

a. Initial management and referral delays between the two groups — A
b. Efficiency of orthopaedic patient transfer — B
c. Quality of orthopaedic referrals — C
d. Initial management of open tibial fractures — D
e. Referral delays between the two groups — E

Unexpected high prevalence of Gram-negative pathogens in fracture-related infection: is it time to consider extended Gram-negative cover antibiotic prophylaxis in open fractures? (Ferreira N, Tsang S-TJ, Jansen van Rensburg A, Venter R, Epstein GZ)

12. The most common causative pathogen of post-traumatic infections is:

a.	*Proteus mirabilis*	A
b.	*Streptococcus pyogenes*	B
c.	*Pseudomonas aeruginosa*	C
d.	*Staphylococcus aureus*	D
e.	*Escherichia coli*	E

13. Gram-negative associated fracture-related infections (FRI) appear to be increasing. The prevalence of Gram-negative associated FRI in the current presented series was:

a.	15%	A
b.	25%	B
c.	35%	C
d.	45%	D
e.	55%	E

14. It is widely accepted that Gram-negative antibiotic cover should be added in which of the following clinical scenarios?

a.	Fracture surgery lasting more than three hours	A
b.	Higher-grade open fractures (Gustilo-Anderson 3)	B
c.	As preoperative prophylaxis in all fracture surgery cases	C
d.	As postoperative prophylaxis in all open fracture surgery cases	D
e.	As prophylaxis in shoulder arthroplasty cases	E

15. Which percentage of open fracture cases only received coverage against Gram-positive pathogens, according to a multicentre audit of major United Kingdom trauma centres?

a.	83%	A
b.	78%	B
c.	73%	C
d.	67%	D
e.	33%	E

The role of bioceramics in the management of osteomyelitic voids (Ferreira N, Epstein GZ)

16. What advantage does the use of bioceramics have over cement spacers in the management of dead space when treating chronic osteomyelitis?

a.	They have far better long-term outcomes	A
b.	They do not need to be removed	B
c.	They elute much higher concentrations of antibiotics	C
d.	They are cheaper	D
e.	They have broader antimicrobial activity	E

17. Which dead space management strategy is *not* currently available in South Africa?

a.	The Lautenbach technique	A
b.	Cement spacers and cement nails	B
c.	Osteoset-T	C
d.	Cerament-V	D
e.	Cerament-G	E

18. Which statement regarding bioactive glass is *not* true?

a.	They are effective against Gram-positive and Gram-negative organisms.	A
b.	Cation exchange leads to a high local pH	B
c.	They are highly versatile and can be moulded to assist in the management of voids following segmental resections of necrotic bone	C
d.	They stimulate angiogenesis by an increase in vascular endothelial growth factor	D
e.	They are osteoconductive and osteoinductive	E

A case of tenofovir-induced extreme osteopaenia (Theron M, Harrison WD, Ferreira N)

19. Tenofovir is form of:

a.	Nucleoside reverse transcriptase inhibitor	A
b.	Non-nucleoside reverse transcriptase inhibitor	B
c.	Protease inhibitor	C
d.	Fusion inhibitor	D
e.	Integrase strand transfer inhibitor	E

20. Osteopaenia is a common complication of tenofovir use, with a frequency of around:

a.	30%	A
b.	40%	B
c.	50%	C
d.	60%	D
e.	70%	E

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