

TRAINING of CORE TRAINERS CPG

Antibiotic Prophylaxis in Oral And Maxillofacial Surgery for Prevention of Surgical Site Infection (3rd Edition)

CASE DISCUSSION 3

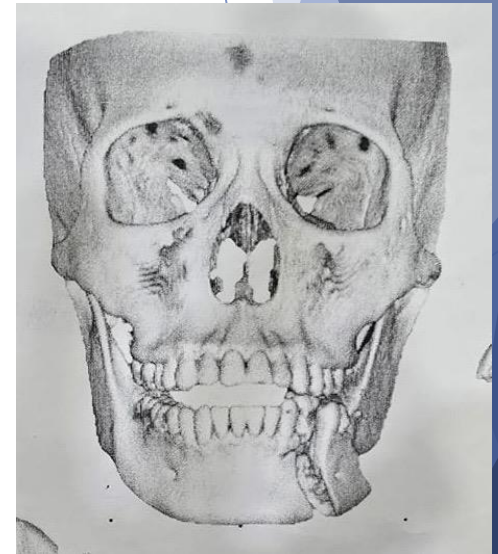
- i. Diabetes Mellitus
- ii. Patient underwent chemotherapy
- iii. Patient underwent radiotherapy
- iv. Prosthetic joint patient



Scenario

01

A 58-year-old male with Type 2 DM (HbA1c: 8.5%) is scheduled for mandibular fracture repair. He has a history of hypertension and peripheral neuropathy.



Question 1



What are the factors to consider
in this patient ?

Answer 1



- ▶ Factors to be considered :
- ▶ Type 2 Diabetes: Poor control (HbA1c > 7.5%) can be associated with increased risk for infections and delayed wound healing, even in the absence of systemic symptoms.
- ▶ Complexity of procedure: **Increased risk of wound infection**, especially if the patient's blood glucose remains poorly controlled during the procedure and in the post-operative period

Although the preceding systematic review did not suggest AP for DM patients, the CPG DG opines AP is generally unnecessary for well-managed diabetic patients undergoing simple procedures. Clinicians should consider other factors, such as age, smoking habits, presence of local infection and presence of co-morbidities that weaken the patient's defensive ability.

Question 2



Is antibiotic prophylaxis indicated in this patient?

Answer 2



YES

Recommendation 11

- Among uncontrolled diabetes mellitus patients (BGL >10 mmol/L and HbA1c >7.5%), antibiotic prophylaxis should be provided prior to any oral surgical procedure.

Question 3



Which antibiotic regimen would be most appropriate for this patient?



Table 5: Antibiotics Spectrum

ANTIBIOTIC CLASS	GRAM POSITIVE COCCI			ANAEROBES		GRAM NEGATIVE	
	Methicillin Sensitive Staphylococcus aureus (MSSA)	Methicillin Sensitive Staphylococci spp	Streptococcus	Clostridium	Bacteroides	E.coli	Klebsiella spp
PENICILLINS			Penicillin				
	Cloxacillin						
			Amoxicillin				
			Ampicillin				
	Amoxicillin-clavulanate						
	Ampicillin-sulbactam						
LINCOSAMIDE	Clindamycin						
IMIDAZOLE				Metronidazole			
CEPHALOSPORIN	Cefazolin					Cefazolin	
	Cefuroxime					Cefuroxime	
MACROLIDES	Azithromycin						
TETRACYCLINE	Doxycycline						

Answer 3



The most common AP regime:

Timing	Medication	Dosage	Frequency
Pre-op	IV Amoxycillin- Clavulanate	1.2g stat	Once
Post-op	*IV Amoxycillin- Clavulanate	1.2g	TDS
Post-op	Tab Amoxycillin- Clavulanate	625mg	TDS

Duration will depend on clinical judgement.

Or

Timing	Medication	Dosage	Frequency
Pre-op	IV Ampicillin-Sulbactam	3g stat	Once
Post-op	*IV Ampicillin-Sulbactam	1.5g	TDS (3 times daily)
Post-op	Tab Ampicillin-Sulbactam	375mg	TDS (3 times daily)

Duration will depend on clinical judgement.

Or

Timing	Medication	Dosage	Frequency
Pre-op	IV Cefuroxime + IV Metronidazole	1.5g stat 500 mg stat	Once
Post-op	*IV Cefuroxime + IV Metronidazole	1.5g 500mg	TDS (3 times daily)
Post-op	Tab Cefuroxime + Tab Metronidazole	250mg 400mg	TDS (3 times daily)

Duration will depend on clinical judgement.

If allergic to Penicillins

Timing	Medication	Dosage	Frequency
Pre-op	IV Azithromycin	500 mg stat	Once
Post-op	*IV Azithromycin	500mg	OD (once daily)
Post-op	Tab Azithromycin	500mg	OD (once daily)

Duration will depend on clinical judgement.

Scenario

02

A 50-year-old male diagnosed with non-Hodgkin lymphoma treated with **chemotherapy** is scheduled for surgical extraction of impacted third molars.

Question 1



What investigations should be done prior to the surgical extraction?

Answer 1



FBC for neutrophil count

(sample)

PLT	162	$\times 10^3$	(150 – 410)
NE#	1,9	$\times 10^3/L$	(2.0 – 7.0)
LY#	3,4	$\times 10^3/L$	(1.0 – 3.0)
MO#	0,4	$\times 10^3/L$	(0.2 – 1.0)
EO#	0,3	$\times 10^3/L$	(0.0 – 0.5)
NE%	31,6	%	(40 – 70)
LY%	56,3	%	(20 – 40)
MO%	6,7	%	(3 – 10)
EO%	4,9	%	(1 – 6)
BA%	0,5	%	(0.0 – 1.2)

Question 2



His neutrophil count is $1900/\text{mm}^3$
(indicating neutropenia).

Does this patient require antibiotic
prophylaxis?

Answer 2



YES

Recommendation 13

- Antibiotic prophylaxis should be given for patients exposed to radiotherapy/chemotherapy prior to oral and maxillofacial surgery.
- In patients undergone chemotherapy antibiotic prophylaxis should be given when absolute neutrophils count is between 1000-2000mm³.

Question 3



What antibiotic regimen would be appropriate?

Answer 3



The most common AP for MOS

Recommendation 2

- Antibiotic prophylaxis may be administered in impacted tooth surgery when it is indicated*.
 - The preferred option is Amoxicillin or Amoxicillin-clavulanate.

Scenario

03

- ▶ Age: 70 years old gentleman
- ▶ Medical History: Hypertension, smoker. History of tongue cancer with surgical resection and radiotherapy completed .
- ▶ Presenting Complaint: Toothache in the lower left jaw.
- ▶ Clinical Findings: Complicated vertical fracture of 35 , which is indicated for extraction.

Question 1



What factors should be considered prior to dental extraction for this patient?

Answer 1



- ▶ Cancer-related therapy
 - i) date of diagnosis
 - ii) date of treatment received
 - iii) date of treatment completed
 - iv) the type, stage, and treatment received
(e.g., radiotherapy, surgery)?
- ▶ Any history of delayed healing or infections in the oral cavity since patient's cancer treatment?

Question 2



Should antibiotic prophylaxis be given to him?



Answer 2



YES

Recommendation 14

- Antibiotic prophylaxis should be given in post-irradiated patients prior to oral and maxillofacial surgical procedures to prevent osteoradionecrosis.

Scenario

04

- ▶ A 67-year-old male patient presents with deep caries, indicated for extraction.
- ▶ Medical history :
 - a) right total hip replacement performed two years ago due to osteoarthritis. The patient denies any signs of infection or pain around the prosthesis and has no history of prosthetic joint infection.
 - b) Hypertension (controlled with medication)
 - c) Type II diabetes mellitus with good glycemic control (HbA1c: 6.8%).

Question 1



What factors should be considered in this patient prior to extraction?

Answer 1



History of complications or infections related to his hip replacement since the surgery



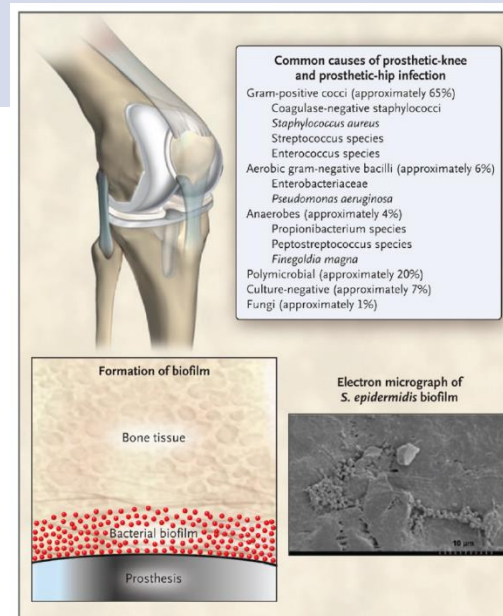
Complexity of the dental procedure



Question 2



Is antibiotic prophylaxis necessary for this patient to prevent hematogenous seeding to his prosthetic joint?



Answer 2



No

Key Message 10

- Antibiotics prophylaxis is not indicated for patients with prosthetic joints.
- Consultation with orthopaedic surgeon is suggested for patients with history of complications associated with prosthetic joint replacement.



THANK YOU

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ORAL AND MAXILLOFACIAL SURGERY