Medical Emergencies in the Dental Practice

Recognition and Management

1

Medical Emergencies

- Rare in general dental practice
- Public expectation - competent at ABCDE
- Need to assess risk
- Specific emergency drugs and equipment
- Regular scenario based exercises
- Audit of all medical emergencies

2

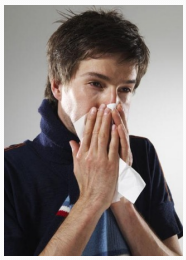
Common Emergencies

- Asthma
- Anaphylaxis
- Chest pain
- Epileptic Seizures
- Hypoglycaemia
- Syncope
- Choking and Aspiration
- Adrenal insufficiency

3

Case 1

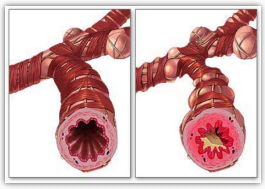
Tom is a 17 year old male for routine dental check-up.
Previous attendances with no issues.
Looks "under the weather" when arriving to practice.
Audible wheeze before treatment initiated, seems to be short of breath and coughing intermittently…



4

Asthma

- Affects 5-8% of the population
- Reversible airways obstruction
- Presentation
- History & Initial Treatment
- Assessing severity
- Transfer to hospital



5

Asthma Severity

- Acute severe asthma
  - Inability to complete sentences in one breath
  - Respiratory Rate > 25 per minute
  - Tachycardia (heart rate > 110 per minute)
- Life Threatening Asthma
  - Cyanosis or Respiratory Rate < 8 per minute
  - Bradycardia
  - Exhaustion

6

Asthma Treatment

- Salbutamol inhaler (100mcg/actuation)
- Large volume spacer device
- Acute severe asthma
  - Urgent transfer
  - Oxygen 15l/min (COPD?)
  - 10 activations from inhaler into spacer
  - Repeat every 10 minutes until ambulance arrives

7

Case 2

Tom has come back to the surgery for his routine check-up, his asthma now well under control.

All is going well during the consultation until – You are called by the dental hygienist.

Tom has started developing shortness of breath following treatment.

He is distressed, flushed with a widespread urticarial rash and his lips and tongue look more swollen than ten minutes ago…

8

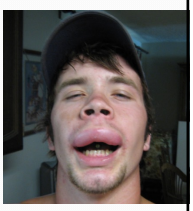
Anaphylaxis

- Severe, life-threatening, generalised hypersensitivity reaction
- Follow administration of drug or contact with allergenic substances (latex/chlorhexidine)
- Symptoms can develop in minutes
- Early, effective treatment is life-saving

9

Anaphylaxis Recognition

- Urticaria, erythema, rhinitis, conjuctivitis
- Abdominal pain, vomiting, diarrhoea
- Sense of impending doom
- Flushing or pallor
- Marked upper airway oedema and bronchospasm
- Vasodilation and hypovolaemia, collapse
- Respiratory and cardiac arrest

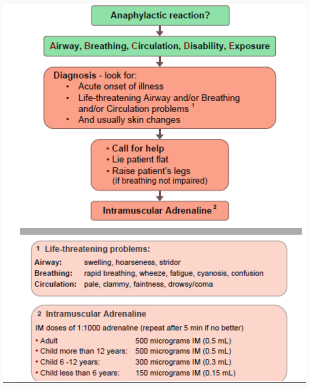


10

Anaphylaxis Treatment

- ABCDE! Call for help.
- Manage airway and breathing, O2 (15L/min)
- Restore blood pressure – lay patient flat and raise legs
- IM Adrenaline
  - 0.5ml of 1:1000(AL middle third of thigh)
  - Does patient have epi-pen? (0.3ml of 1:1000)
  - Repeat at 5 min intervals according to clinical signs

11



12

Case 3

Joan is a 63year old lady who is getting dental implants. This is her first treatment of two-stage surgery.

She is quite an anxious lady so you ensure she has plenty of local anaesthetic injected.

Shortly after injection of the local she complains of palpitations, central crushing chest pain radiating to her jaw and arm and looks pale, grey and sweaty…

13

Cardiac Emergencies

- Signs and symptoms
  - Chest pain
  - Shortness of breath
  - Fast and slow heart rates
  - Increased respiratory rate
  - Low blood pressure
  - Poor peripheral perfusion
- Often a history of cardiac disease

14

Treatment

- Mild symptoms may resolve rapidly with patients own medication
- Severe attacks warrant transfer to hospital
- Pain of MI similar to angina but more severe and prolonged
  - Only partial response to GTN spray

15

Myocardial infarction

SYMPTOMS

- Severe crushing central chest pain with radiation
- Pale and clammy skin
- Nausea and vomiting
- Pulse may feel weak
- Blood pressure can fall
- Shortness of breath

INITIAL MANAGEMENT

- Call 999 immediately
- High flow O2 (15l/min)
- Sublingual GTN
- Reassurance
- Aspirin 300mg
- Unresponsive – check for 'signs of life'

16

Case 4

You are called to assist another dental practitioner whose patient has become unconscious and appears to be "fitting".

The patient is still in the dental chair and demonstrates jerking of the limbs which lasts for several minutes.

There is evidence of urinary incontinence and tongue-biting.

17

Epileptic Seizures

- Aura
- Sudden loss of consciousness
- Patient becomes rigid, falls, cyanotic
- Jerking of limbs, tongue biting
- Frothing and urinary incontinence
- Seizure typically lasts a few minutes
- Can remain floppy but remain unconscious
- Post-ictal phase

18

Considerations

- DO NOT MISS HYPOGLYCAEMIA!
- Check for slow heart rate – may be vasovagal syncope
  - Drop in BP can cause transient cerebral hypoxia and give rise to brief seizure

19

Treatment

- Try to ensure patient is not at risk of injury
- Don't put anything in mouth
- High flow O2 (15l/min)
- Do not attempt to restrain
- After convulsions place in recovery position
- Check for 'signs of life'
- Reassurance

20

Who to send to hospital

- Status epilepticus
  - Seizures lasting greater than 5 minutes, or repeated seizures
- High risk of recurrence
- First episode
- Difficulty monitoring the patient's condition
- Only give medication if seizure prolonged
- Buccal midazolam (10mg), IV/rectal Diazepam

21

Hypoglycaemia

- Blood glucose < 3.0mmol/L
- Diabetics should eat normally and take their usual medication before planned dental treatment
- Patients often recognise symptoms themselves
- Children may not have such obvious features but can appear lethargic

22

Hypoglycaemic symptoms

- Shaking and trembling
- Sweating
- Headache
- Difficulty in concentration/vagueness
- Slurring of speech
- Aggression and confusion
- Fitting/Seizures
- Unconsciousness

23

Treatment

- Confirm Diagnosis – measure blood glucose
- Early stages (co-operative and conscious)
  - intact gag reflex
  - Give oral glucose, milk with added sugar, sugar tablets
  - Repeat in 10-15 minutes if necessary
- Severe cases (pt impaired consciousness)
  - Buccal glucose gel and/or glucagon (1mg IV/IM)

24

Syncope

- Inadequate cerebral perfusion = loss of consciousness
- Commonly occurs with low blood pressure
- Caused by vagal overactivity (vasovagal)
- May follow emotional stress or pain
- Often have a history of repeated faints
- Other causes
  - Postural hypotension
  - Hyperventilation

25

Syncope

SYMPTOMS AND SIGNS	TREATMENT
• Faint/dizzy/light-headed	• Lay patient flat ASAP
• Slow pulse rate	• Raise legs to ↑ venous return
• Low blood pressure	• Loosen tight clothing
• Pallor and Sweating	• High flow O2 (15l/min)
• Nausea and Vomiting	• Unresponsive – check for 'signs of life'
• Loss of consciousness	

26

Choking and Aspiration

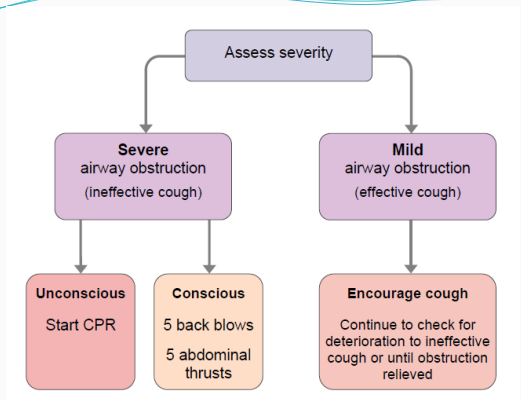
- Dental patients susceptible to choking
- Local anaesthesia can diminish protective reflexes
- Impression material and dental equipment in mouth can also pose risk
- Good teamwork and attention to detail should prevent aspiration and risk of choking

27

Choking and Aspiration

SYMPTOMS AND SIGNS	TREATMENT
• May cough and splutter	• Allow patient to cough
• Difficulty breathing	• May require Salbutamol if symptomatic wheeze
• Noisy breathing	• Foreign body aspiration
• Paradoxical chest/abdominal movements	• Sharp back blows or abdominal thrusts
• Cyanosis	• Unconscious - CPR
• Loss of consciousness	

28



29

Key points

- Medical emergencies can occur in dental practice
- All patients should have basic risk assessment before treatment
- High index of suspicion and recognise acutely ill
- Remember ABCDE!
- Keep up to date with basic resuscitation skills.

30