Common Pediatric Emergencies

Cases Scenarios and Pitfalls

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The best choice??

What is the mistake

Case (1)

12-mo-old boy with acute stridor

Case 1

- 12-months-old boy presented to pediatric ER at 3 AM with severe difficulty of breathing.

- Rapid examination revealed stridor, marked intercostal and suprasternal retractions without remarkable adventitious sounds.
- **SpO_2 85%**

Case 1

- History of rhinorrhea, mild fever, and increasing barking cough of 2 days duration

What should I do??

Review again??

Case 1

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- **SpO_2 85%**

Case 1

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What should I do??

Case 1 (First scenario)

- Oxygen
- Nebulized salbutamol
- Steroids
- Order chest X-ray

Case 1 (Second scenario)

- Oxygen
- Nebulized adrenaline
- IM dexamethasone
- Follow up

Case 1 (Third scenario)

- Throat examination by tongue depressor at the ER
- Oxygen
- IM antibiotics

Case 1 (First scenario)

- Oxygen
- Nebulized salbutamol
- Steroids
- Order chest X-ray

Case 1 (Third scenario)

- Throat examination by tongue depressor at the ER
- Oxygen
- IM antibiotics

Viral Croup

DD?

- **FB**
- **Epiglottitis**

Case 1 (Second scenario)

- Oxygen
- Nebulized adrenaline
- Dexamethasone
- Follow up

Case (2)

3-yrs-old boy with DCL

Case 2

- 3-yrs-old boy presented to pediatric ER at 9 AM with disturbed conscious level.
- Normal breathing and hemodynamic state SpO2 95%
- GCS 6
- No signs of lateralization
- Temp 37 C
- No meningeal signs

Case 2

- The child was otherwise normal till yesterday
- He slept early and skipped his dinner
- No history of trauma or drug intake

Case 2

Initial Management

- Oxygen
- Maintenance Fluids
- IV antibiotics, acyclovir
- Dexamethasone

Case 2

Ordered investigation

- CBC
- Creatinine, electrolytes, blood gases
- Liver functions
- CT brain

Pending results of investigations

What was missed???

Review again??

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- Creatinine, electrolytes, blood gases
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- CT brain

Pending results of investigations

What was missed???

Case 2

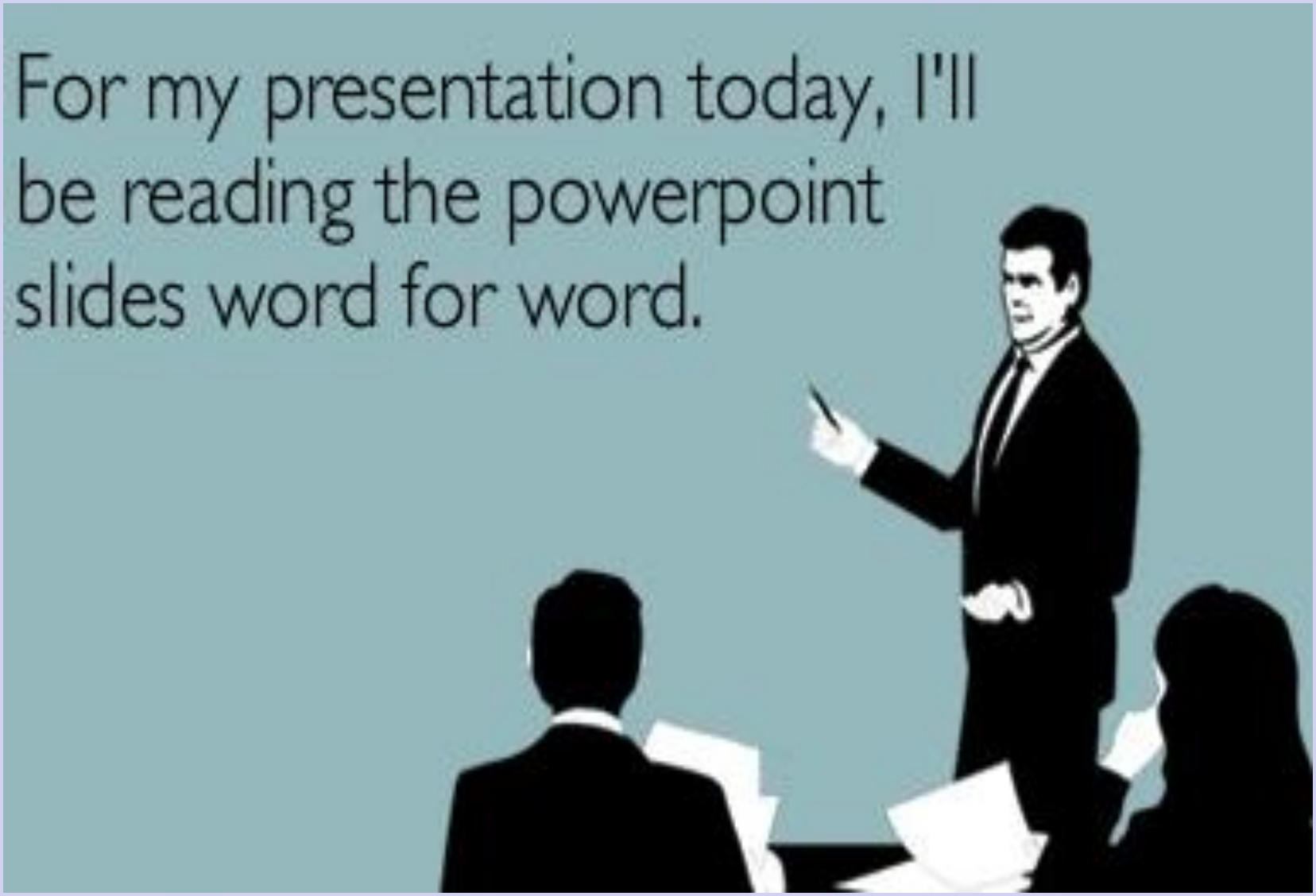
A

B

C

D	Don't
E	Ever
F	Forget
G	Glucose

Bedside glucose check is mandatory for any patient with DCL, convulsions, or any critical illness


For my presentation today, I'll be reading the powerpoint slides word for word.

Case (3)

Acute wheezy chest

Case 3

- 10-months-old boy presented to pediatric ER with severe difficulty of breathing

RR 50 cycle / min

Pulse 190 bpm

SpO_2 85%

Temp 37.5 C

- Chest retractions, wheezes

- Enlarged liver 4 cm below costal margin

Case 3

- History of rhinorrhea, mild fever, and increasing wheezes of 3 days duration

Received:

- Frequent Salbutamol nebulization
- Parenteral antibiotics
- IV fluids

What should I do??

Review again??

Case 3

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Received:

- Frequent Salbutamol nebulization
- Parenteral antibiotics
- IV fluids

What should I do??

Case 3 (First scenario)

- Oxygen
- Nebulized salbutamol
- Steroids
- Theophylline infusion
- Order chest X-ray

Case 3 (Second scenario)

- Oxygen
- Urgent bronchoscopy

Case 3 (Third scenario)

- Oxygen
- ECG
- Cardiac enzymes
- Chest X-Ray
- Anti failure treatment

Case 3 (First scenario)

- Oxygen
- Nebulized salbutamol
- Steroids
- Theophylline infusion
- Order chest X-ray

Case 3 (Second scenario)

- Oxygen
- Urgent bronchoscopy

Case 3 (Third scenario)

- Oxygen
- ECG
- Cardiac enzymes
- Chest X-Ray
- Anti failure treatment

- **Bronchiolitis is not the only cause of wheezy chest**
- **Cardiac causes are important DD**

Case (4)

8-months-old girl with GE

Case 4

- 8-months-old girl presented to ER with fever, vomiting and diarrhea since yesterday

- Examination revealed severe dehydration and woody tongue

- IV access was inserted and the infant started deficit therapy (100 ml/kg Ringer lactate)

Case 4

- ENT consultation showed acute suppurative otitis media and IV cefotriaxone was added.

- The nurse told you that she will use Ringer lactate solution to reconstitute the cefotriaxone

What is wrong??

Review again??

Case 4

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Conclusion

Exclude hypernatremia (serum Na) in infants with GE requiring IV fluids

Never give IV Cefotriaxone with Ca containing fluids

Case (5)

2-months-old boy with convulsions

Case 5

- 2-months-old boy presented to ER with recurrent convulsions of 4 hours duration

RR 25 cycle / min

Pulse 170 bpm

- Poor peripheral perfusion

Severe pallor

- Bulging anterior fontanel

- Unequal pupils

- GCS 6

Case 5

The infant was born by NVD at home

Exclusive breast feeding

No NICU admission

No family or past history of bleeding

What should I do???

Review again??

Case 5

- 2-months-old boy presented to ER with recurrent convulsions of 4 hours duration

RR 25 cycle / min

Pulse 170 bpm

- Poor peripheral perfusion

Severe pallor

- Bulging anterior fontanel

- Unequal pupils

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Case 5

The infant was born by NVD at home

Exclusive breast feeding

No NICU admission

No family or past history of bleeding

What should I do???

Case 5 (First scenario)

- Intramuscular vit K
- Arrange for urgent blood transfusion
- Urgent brain CT

Case 5 (Second scenario)

- Frequent anticonvulsants
- IV fluids (2/3 maintenance)
- Arrange for blood transfusion
- IV vitamin K
- Ask for CBC, coagulation profile

Case 5 (Third scenario)

- Oxygen and suction
- Ensure adequate ventilation
- IV access, withdraw blood sample for (CBC, blood grouping and cross matching, coagulation…etc)
- Shock therapy (20ml/kg NS) pending RBCs (inotropes).
- Bedside glucose
- Anticonvulsants
- IV vitamin K

Case 5 (First scenario)

- Intramuscular vit K
- Arrange for urgent blood transfusion
- Urgent brain CT

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- Oxygen and suction
- Ensure adequate ventilation
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- Shock therapy (20ml/kg NS) pending RBCs (inotropes).
- Bedside glucose
- Anticonvulsants IV vitamin K
- Brain CT (after stabilization)

- **Always follow ABC**
- **There is no neurological emergency that outweighs cardiorespiratory emergency**

Case (6)

5-yrs-old boy with RD

Case 6

- 5-yrs-old boy presented to pediatric ER with severe respiratory distress.

RR 40 cycle / min

Pulse 170 bpm

SpO_2 85%

- Chest retractions, grunting, bil crepitations
- Enlarged tender liver 5 cm below costal margin

bil ll edema

Mild eye lids puffiness

Case 6

- The condition started 5 days ago with abd pain and dark colored urine.

- Respiratory distress started 2 days ago and diagnosed as chest infection and given antibiotics

Case 6

Initial Management

- Oxygen
- Maintenance Fluids
- IV antibiotics

Case 6

Ordered investigation

- CBC
- Glucose, electrolytes, blood gases
- Liver and kidney functions
- Chest x-ray

Pending results of investigations

What was missed???

Review again??

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Blood Pressure 180/110 mmHg

- APSGN
- Hypertensive heart failure
- Cardiogenic pulmonary edema

BP is routine, particularly

- Neurological (e.g., convulsions)
- Cardiac (e.g., COA, hypertensive HF)
- Renal

Only another 67 slides to go..

Tea break under threat!

Error: Tedious slides detected.
Slide show with self-destruct in 5 seconds.

NOT OK

Case (7)

Hyperkalemia

Case 7

- 2-yrs-old boy presented to ER with persistent vomiting and diarrhea since yesterday
- Examination revealed mild dehydration
- IV access was inserted and blood samples was taken from the venous cannula (squeezing)
- Child was started on IV fluids

Case 7

Results of investigations

CBC -WBCs 9000 -Platelets 200000 -Hb 11 gm/dl

Electrolytes Na 140 mEq/L

K **7.5 mEq/L**

ABG pH 7.32 pCO2 32 HCO3 16

Creatinine 0.7 mg/dl

What should I do???

Review again??

Case 7

- 2-yrs-old boy presented to ER with persistent vomiting and diarrhea of since yesterday
- Examination revealed mild dehydration
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Electrolytes Na 140 mEq/L

K **7.5 mEq/L**

ABG pH 7.32 pCO2 32 HCO3 16

Creatinine 0.7 mg/dl

What should I do???

Case 7 (First scenario)

- Stop any K containing fluids
- IV calcium gluconate
- IV Sodium bicarbonate
- Nebulized salbutamol
- Insulin and glucose infusion

Case 7 (Second scenario)

- Urgent hemodialysis

Case 7 (Third scenario)

- ECG
- Repeat test

Case 1 (First scenario)

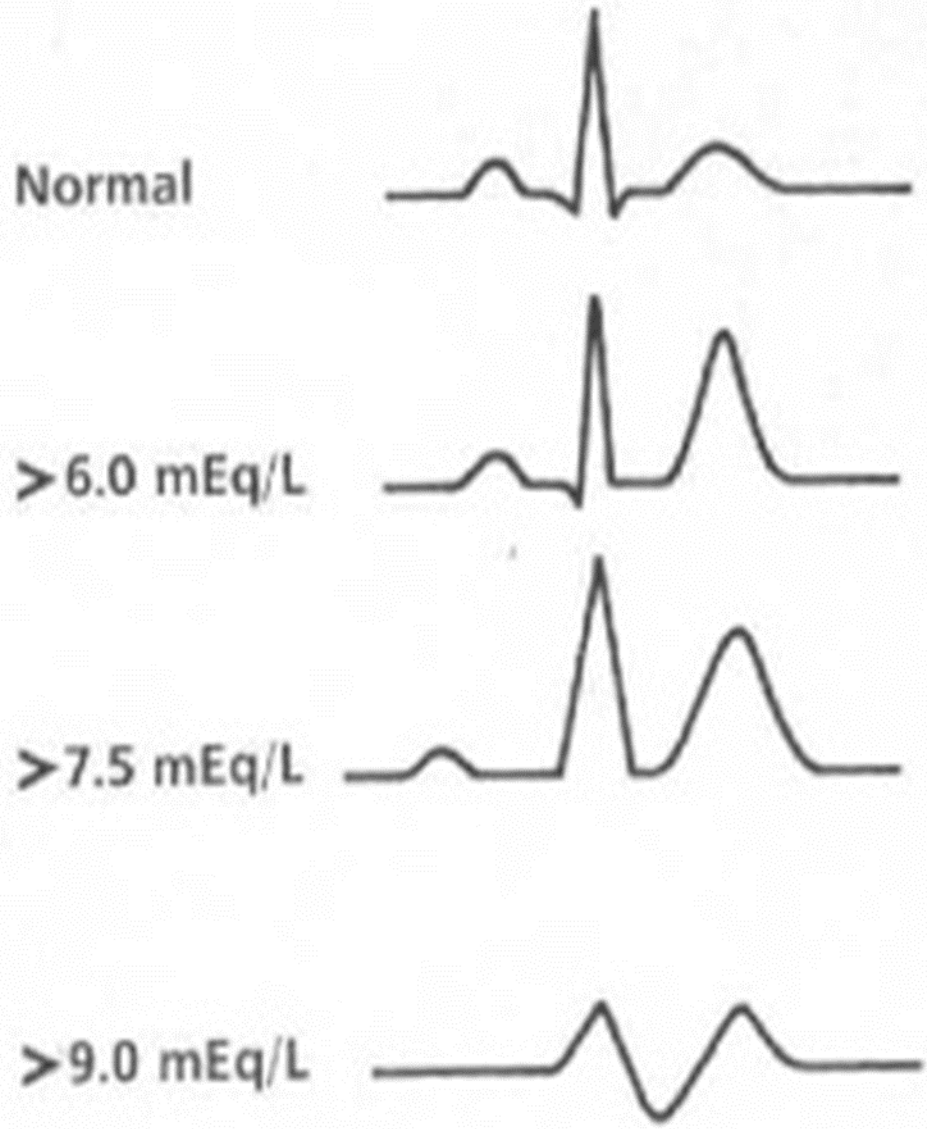
- Stop any K containing fluids
- IV calcium gluconate
- IV Sodium bicarbonate
- Nebulized salbutamol
- Insulin and glucose infusion

Case 7 (Second scenario)

- Urgent hemodialysis

Case 7 (Third scenario)

- ECG
- Repeat test


Normal
>6.0 mEq/L
Tall T Wave
>7.5 mEq/L
Long PR Interval
Wide QRS Duration
Tall T Wave
>9.0 mEq/L
Absent P Wave
Sinusoidal Wave

Before treating hyperkalemia, you should exclude pseudohyperkalemia

Case (8)

2-years-old boy with 123 ingestion

Case 8

- 3-years-old boy (12 kg) presented to ER with DCL after intake of a whole bottle of 123 syrup 3 hours ago

RR 25 cycle / min

Pulse 130 bpm

- BP 100/60 mmHg

Temp 38 C

- GCS 11

Case 8

Management

- Gastric lavage
- Activated Charcoal
- IV fluids maintenance
- Monitoring

Case 8

Investigations

Complete blood count

Blood glucose, electrolytes, ABG

Liver and kidney functions

What is missed??

Review again??

Case 8

- 3-years-old boy (12 kg) presented to ER with DCL after intake of a whole bottle of 123 syrup 3 hours ago

- RR 25 cycle / min
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- BP 100/60 mmHg

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Case 8

Management

- Gastric lavage
- Activated Charcoal
- IV fluids maintenance
- Monitoring

Case 8

Investigations

Complete blood count

Blood glucose, electrolytes, ABG

Liver and kidney functions

What is missed??

123 syrup

Each 5 ml contain

- Paracetamol (acetaminophen) 160 mg
- Pseudoephedrine Hydrochloride 15mg
- Chlorpheniramine maleate 1mg

What is missed??

- Paracetamol serum level (after 4 hours)
- Do not wait for the result
- Start oral N-Acetylcysteine 140 mg/kg loading, followed by 70 mg/kg q4h

Case (9)

5-years-old boy with anemia

Case 9

- 5-years-old boy presented to ER with severe respiratory distress of 1 day duration

RR 40 cycle / min

Pulse 170 bpm

- Severe pallor

Jaundice

- Tender hepatomegaly

- GCS 12

Case 9

The child developed red colored urine 2 days ago

History of Fava beans intake

Positive family history

CBC Hb 2 gm/dl (Platelets, WBCs are normal)

What should I do???

Review again??

Case 9

- 5-years-old boy presented to ER with severe respiratory distress of 1 day duration

RR 40 cycle / min

Pulse 170 bpm

- Severe pallor

Jaundice

- Tender hepatomegaly

- GCS 12

Case 9

The child developed red colored urine 2 days ago

History of Fava beans intake

Positive family history of Favism

CBC Hb 2 gm/dl (Platelets, WBCs are normal)

What should I do???

Case 9 (First scenario)

- Multiple fluid (NS) boluses
- Arrange for urgent whole blood transfusion

Case 9 (Second scenario)

- Oxygen
- IV fluids with Inotropic support
- Alkalization of urine
- Urgent packed RBCs transfusion
- Follow up renal functions.

Case 9 (Third scenario)

- Urgent chest X-ray
- Urgent abdominal U/S
- Urgent Echocardiography
- Arrange for urgent whole blood transfusion

Case 9 (First scenario)

- Multiple fluid (NS) boluses
- Arrange for urgent whole blood transfusion

Case 9 (Third scenario)

- Urgent chest X-ray
- Urgent abdominal U/S
- Urgent Echocardiography
- Arrange for urgent whole blood transfusion

Case 9 (Second scenario)

- Oxygen
- IV fluids with Inotropic support
- Alkalization of urine
- Urgent packed RBCs transfusion
- Follow up renal functions.

Oxygen is essential in acute management of severe anemia

Special thanks to Sohag PICU Team

Dr. Selvia Magdy Tamer

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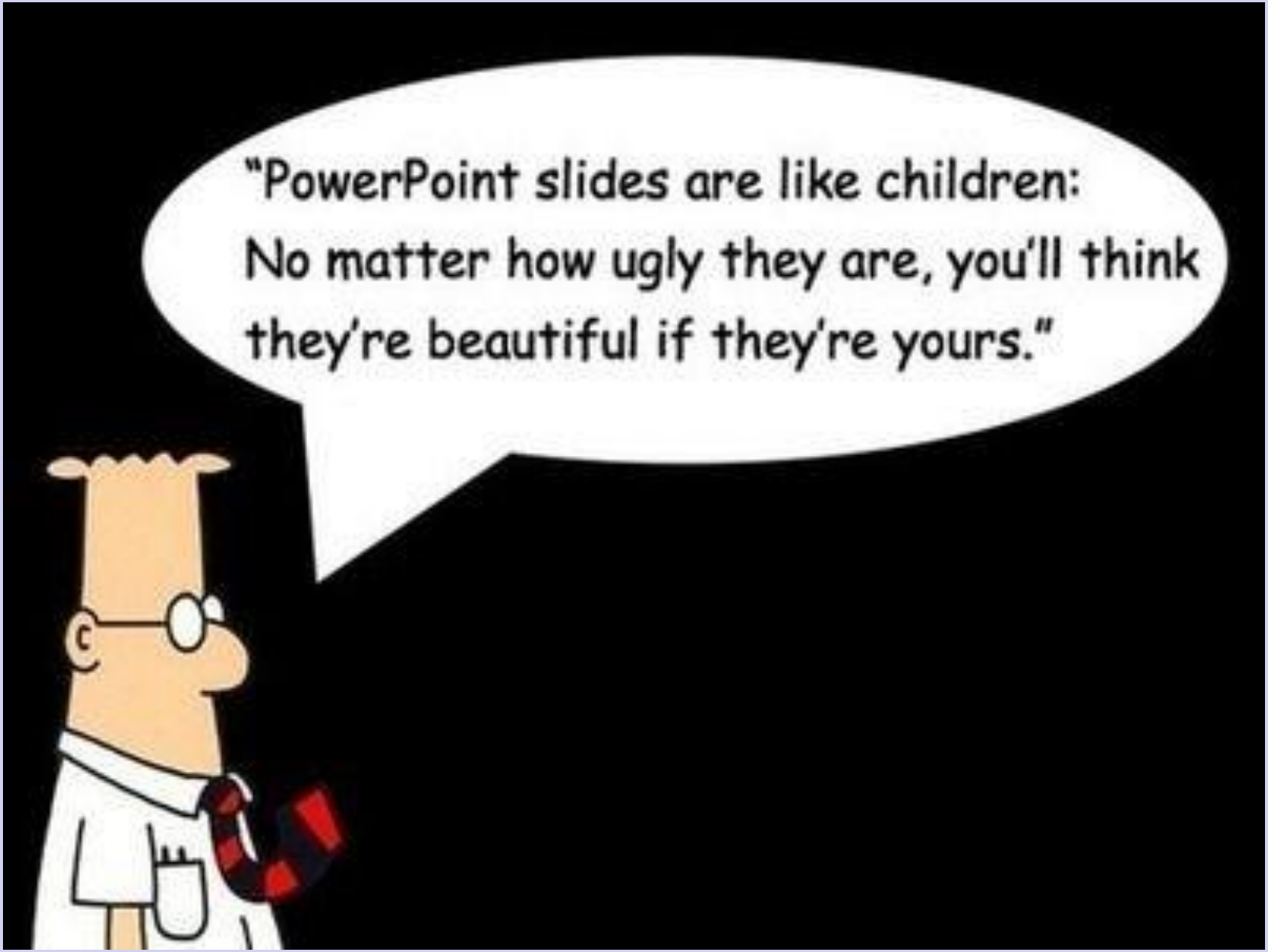
Dr. Mohamed Dahi Saber

Dr. Kerols Harby Helmy


"PowerPoint slides are like children:
No matter how ugly they are, you'll think
they're beautiful if they're yours."