

Case 7 (March 9 2006): [N Engl J Med 2006;354:1065-72.](#)

Case 7-2006 — A 47-Year-Old Man with Altered Mental Status and Acute Renal Failure

Demographic: Male, 47 years, America North, General speciality

Clinical features extracted from the case and entered into the query box:

obtunded
hyperchloremic acidosis and anion-gap metabolic acidosis
calcium oxalate crystalluria
generalized tonic-clonic seizure
vomiting
bilateral rhonchi
small left perihilar opacity
hyperglycemia
high creatinine

Synonyms used by Isabel (optional) for the above query:

high creatinine
hyperglycemia
vomiting

STOP !

Before you read further you might want to construct your own:

- Complete differential diagnosis
- Final diagnosis

In the following section you will find:

- The differential diagnosis constructed by the MGH panel
- The final diagnosis of the case
- Which of the MGH panel differential diagnoses did Isabel contain
- Did Isabel suggest the Final diagnosis

Differential Diagnoses considered by the MGH panel:

Four Main Causes of Anion-Gap Metabolic Acidosis.

Lactate

- Carbon monoxide
- Cyanide
- Isoniazid (>30 mg/kg)
- Iron
- Salicylates (cytochrome poisoning)
- Metformin
- Acute alcohol intoxication

Ketoacidosis

- Diabetic ketoacidosis
- Alcoholic ketoacidosis

Renal failure

- Uremia, decreased secretion of ammonium, hydrogen sulfate, hydrogen phosphate
- Toxins and metabolites
- Toluene
- Methanol, ethylene glycol, paraldehyde (metabolized to formate, oxalate, acetate)

Final Diagnosis of the case according to NEJM:

Ethylene glycol intoxication

Differential Diagnoses of the case as given by Isabel:

Ethylene glycol intoxication – Isabel 1st page

Diabetic Ketoacidosis – Isabel 1st page

Renal Tubular acidosis – Isabel 1st page

Alcohol toxicity – Isabel 1st page

Salicylate toxicity – Isabel 1st page

Methanol toxicity – Isabel 1st page

Isoniazid toxicity – Isabel 2nd page & on clicking on speciality heading

Was the final diagnosis given by Isabel?

Yes, Ethylene glycol intoxication (Isabel 1st page).

Entire presentation cut and pasted into the Isabel query box:

None of the above

Isabel Differential:

<p>NEPHROLOGY</p> <ul style="list-style-type: none"> Distal Renal Tubular Acidosis Type 1 <input type="checkbox"/> Proximal Renal Tubular Acidosis Type 2 <input type="checkbox"/> Arteriolar Nephrosclerosis <input type="checkbox"/> Cystinosis <input type="checkbox"/> Idiopathic Hypercalcuria <input type="checkbox"/> HyperK RTA Type 4 <input type="checkbox"/> Chronic Renal Failure <input type="checkbox"/> Medullary Cystic Disease <input type="checkbox"/> Diabetic Nephropathy <input type="checkbox"/> 	<p>TOXICOLOGY</p> <ul style="list-style-type: none"> Ethylene Glycol Toxicity <input type="checkbox"/> ↳ Alcohol Toxicity <input type="checkbox"/> Salicylates Toxicity <input type="checkbox"/> Methanol Toxicity <input type="checkbox"/> NSAID's Toxicity <input type="checkbox"/> Calcium Antagonists Toxicity <input type="checkbox"/> Isoniazid Toxicity <input type="checkbox"/>
<p>GASTROINTESTINAL DISORDERS</p> <ul style="list-style-type: none"> Cholestasis Associated with Parenteral Nutrition <input type="checkbox"/> 	<p>ENDOCRINE SYSTEM</p> <ul style="list-style-type: none"> HHNC / HONK <input type="checkbox"/> Diabetic Ketoacidosis <input type="checkbox"/> MEN Type 1 <input type="checkbox"/>
<p>NERVOUS SYSTEM DISORDERS</p> <ul style="list-style-type: none"> Generalized Tonic-Clonic Seizures <input type="checkbox"/> Status Epilepticus <input type="checkbox"/> 	<p>INFECTIOUS DISEASES</p> <ul style="list-style-type: none"> ↳ Anthrax <input type="checkbox"/>
<p>ORTHOPEDIC DISORDERS</p> <ul style="list-style-type: none"> Renal Osteodystrophy <input type="checkbox"/> 	<p>RESPIRATORY SYSTEM DISORDERS</p> <ul style="list-style-type: none"> ARDS <input type="checkbox"/> Pneumocystis Pneumonia <input type="checkbox"/>
<p>PSYCHOLOGIC DISORDERS</p> <ul style="list-style-type: none"> Bulimia Nervosa <input type="checkbox"/> 	<p>METABOLIC DISEASES</p> <ul style="list-style-type: none"> Type I Glycogen Storage Disease <input type="checkbox"/> ↳ Galactose Metabolism Defects <input type="checkbox"/> ↳ Carnitine Cycle Defects <input type="checkbox"/>