

# A CASE REPORT OF A 14 YEAR OLD GIRL WITH DIABETES MELLITUS WHO DEVELOPED TRACHEAL STENOSIS AS A RESULT OF PROLONGED INTUBATION FROM DIABETIC KETOACIDOSIS AND SUBSEQUENTLY DEVELOPED ACUTE PANCREATITIS

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## BACKGROUND

- Diabetic ketoacidosis (DKA) is a serious complication of diabetes mellitus which can cause mortality and serious morbidity
- Although more common in type 1 diabetes mellitus (DM), it can also occur in type 2 DM
- Insulin deficiency causes the body to breakdown fat to produce energy
- This causes the accumulation of ketone bodies, which leads to acidosis, which has detrimental effects to the central nervous system
- Insulin also promotes lipogenesis
- With insulin deficiency, there is an increase breakdown of fat into triglycerides
- This increases predisposition to pancreatitis

## METHODS

- We conducted a retrospective chart review of this patient and analyzed her clinical course, laboratory workup, and treatment
- Informed consent from the parents and assent from the patient were obtained
- No patient identifiers were used and patient confidentiality was maintained

## CLINICAL COURSE

- This is a 14 year old girl who was diagnosed with diabetes mellitus 2 years ago in 2014
- 6 months after diagnosis, due to non-compliance with her medication regimen, she was admitted to the PICU in severe DKA with a pH of 6.9
- Due to altered mental status and cerebral edema, she was intubated for 1 week
- This caused her to develop parasthesia of the right hand and tracheal stenosis
- After discharge, exercise caused her to develop stridor, for which she was admitted to the hospital for 4 different occasions
- Efforts by ENT to perform tracheal dilation were unsuccessful
- Tracheoplasty needed to be performed by cardiothoracic surgery
- 3 months after discharge, a lipid panel was performed and showed a triglyceride level of 3000 mg/dl, after which she was started on Gemfibrozil 600 mg twice daily, but was non-compliant
- 2 days later, she presented to the ER with abdominal pain and vomiting
- Lipase level was 700 U/L (Normal 15-58 U/L) and abdominal ultrasound was consistent with acute pancreatitis
- Patient was kept NPO and started on her insulin regimen and gastroenterology was consulted
- Repeat lipase 2 days later improved to 10 U/L and she was started on a low fat diet and discharged
- After discharge, Gemfibrozil was restarted and her triglyceride level normalized

## CONCLUSIONS

- DKA is a serious complication of diabetes mellitus with a high risk of morbidity and mortality
- Hyperlipidemia, especially elevated triglyceride level should be meticulously screened for
- Early intervention with medication to treat elevated triglycerides can prevent acute pancreatitis
- Insulin treatment decreases triglycerides
- In patients with diabetes mellitus who present to the emergency room with abdominal pain or vomiting, serum amylase and lipase levels, along with an abdominal ultrasound should be performed to diagnose acute pancreatitis
- Amylase and lipase levels may be frequently monitored for early detection of pancreatitis
- Abdominal pain in a patient with diabetes mellitus should be worked up and is not just the result of the disease process alone
- Effective management of diabetes mellitus should be implemented not only to prevent long term cardiovascular, renal, and neurological complications but acute complications such as DKA and acute pancreatitis, as well

