



TRANSIENT ELEVATION OF CREATINE PHOSPHOKINASE (CPK) DUE TO REPEATED VOMITING- CASE REPORT

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ABSTRACT

Creatine phosphokinase (CPK) is an enzyme expressed by various tissues and cell. Transient elevation of CPK in vomiting due to various causes is unusual and only few cases have been reported till now. It is believed that elevation of creatine phosphokinase is due to the vigorous contractions of abdominal muscles and diaphragm during expulsive phase of vomiting as well as trauma on musculature due to violent vomiting. We are reporting a case of transient elevation of CPK due to violent vomiting caused by sliding hiatal hernia.

KEYWORDS: Creatine phosphokinase, vomiting, hiatal hernia.

INTRODUCTION

Creatine phosphokinase (CPK) is an enzyme expressed by various tissues and cell that consume ATP rapidly, especially skeletal muscle, but also brain and smooth muscle including vascular and uterine tissue.^[1] Clinically, creatine kinase is assayed in blood tests as a marker of damage of CK-rich tissue such as in myocardial infarction (heart attack), rhabdomyolysis, muscular dystrophy and acute kidney injury.^[2]

Vomiting can be caused by a wide variety of conditions; such as a specific response to ailments like gastritis or as a non-specific sequela of disorders ranging from brain tumors and

elevated intracranial pressure. Transient elevation of CPK in vomiting due to various causes is unusual and only few cases have been reported till now.^[3] We are reporting a case of transient elevation of CPK due to violent vomiting caused by sliding hiatal hernia.

CASE REPORT

A 19 year old male, admitted in medicine ward with complaints of multiple episodes of vomiting for 4 days and abdominal pain for 3 days. Vomiting is non projectile, non bilious, no blood in vomiting, vomitus contain food particle and water, occur 1-2 hr after taking food. Abdominal pain present in upper quadrant, mild grade, non radiating, dull aching, aggravated after taking food. There was no history of fever, non passage of stool and flatus, chest pain, headache, dizziness. No history of any chronic illness in past. On examination he was conscious, oriented to time, place and person, vitals were within normal limit with pulse rate 90/min, blood pressure 128/86 mm Hg, respiratory rate 12/min. There was no pallor, icterus, pedal edema and cyanosis. On systemic examination, cardiac and respiratory system within normal limit. On abdomen examination mild tenderness present in left hypochondrium, with no organomegaly. On routine investigations, his Haemoglobin was 13.7g%; TLC – 8770/mm³[differential count N70%, L17%,]; Platelets – 2,57,000/ mm³. Renal function test within normal. Liver function test shows SGOT/SGPT 30/23 U/L, TB/DB 0.5/0.2 mg/dl, ALP 68 U/L. Amylase (46U/L) and lipase (26U/L) within normal range. Serum CPK was raised 3223 U/L(normal range 24 – 196U/L). Serum LDH was 349.3U/L. USG Abdomen was done not suggestive of any abnormality.Upper GI endoscopy done shows sliding hiatus hernia with oedematous mucosa of herniated segment. He was treated with iv fluids containing normal saline, anti emetics such as ondansetron and promethazine, PPI (pantoprazole), analgesic. He was advised to elevate the head of their beds and avoid lying down directly after meals. On day 2 of admission serum CPK was 618.5U/L. After 4 days of admission vomiting subsided. On day 6 of admission serum CPK was 116U/L normal.

DISCUSSION

Vomiting is the involuntary, forceful expulsion of the contents of one's stomach through the mouth.^[4] Vomiting can be caused by a wide variety of conditions. The chemoreceptor trigger zone known as area postrema present on the floor of the fourth ventricle of the brain stimulate vomiting.^[5] Vomiting act has two phases. In the retching phase, the abdominal muscles undergo coordinated contractions together with the diaphragm. In this retching phase, nothing has yet been expelled. In the expulsive phase, intense pressure is formed in the stomach leads

to vigorous contractions of these muscles that last for extended periods of time - much longer than a normal period of muscular contraction. The pressure is then suddenly released when the upper esophageal sphincter relaxes resulting in the expulsion of gastric contents.^[6,7]

Creatine phosphokinase (CPK) is an enzyme expressed by various tissues and cell that consume ATP rapidly, especially skeletal muscle, but also brain and smooth muscle including vascular and uterine tissue.^[1] In the review of literature, Pace M et al reported 17 cases of elevation of total CPK (creatine phosphokinase) in subjects with vomiting of different cause.^[3] In our patient vomiting due to sliding hiatal hernia leads to transient elevation of CPK. The mechanism of transient elevation of creatine phosphokinase (CPK) is still unknown. It is believed that elevation of creatine phosphokinase is due to the vigorous contractions of abdominal muscles and diaphragm during expulsive phase of vomiting as well as trauma on musculature due to violent vomiting.^[3]

As the vomiting subsides on treatment, creatine phosphokinase start falling.

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