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Case Reports in Clinical Medicine

Trousseau's sign

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ABSTRACT

The trousseau's sign is carpopedal spasm that results from ischemia that is induced by pressure applied to the upper arm. It is a sensitive and specific sign of hypocalcemia. Here the author is sending the short case summary, images of the demonstration of the Trousseau's sign. This case also had a cluster of seizures induced by hypocalcemia.

Keywords: Trousseau's Sign; Hypocalcemia

1. INTRODUCTION

Hypocalcemia is caused by a number of clinical entities and frequently presents with signs of generalized neuromuscular irritability including paresthesia, muscle cramps, laryngospasm, tetany, and seizures. This neuromuscular instability can also be demonstrated through the elicitation of Trousseau's sign and Chvostek's sign.

2. CASE

A 20 years old male was a known case of chronic kidney disease who had undergone renal transplantation in the year 2007 and since then he was on multiple immunosuppressant's (mycophenolate mofetil 1 gm tacrolimus and steroids 5 mg). He was admitted with complaints of pain abdomen, anorexia nausea and deteriorating renal function. Diagnosis of acute pancreatitis with chronic allograft nephropathy was made and he was also found to have steroid induced diabetes. On the fourth day of admission the patient developed a cluster of four episodes of seizures, all tonic clonic type. There was no history of seizures in the past or in the family. On examination vital's were stable he was in the post ictal state, confused. Pupils were normal in size reacting to light. Fundus examination was normal, other cranial nerve examination was normal. He was moving all his limbs equally and symmetrically DTRs were brisk plantars down going, and there was no meningeal sign. Relatives gave history that he had developed intermittent carpopedal spasm which was corrected spontaneously. Metabolic cause of seizure was suspected and on clinical demonstration he developed carpo pedal spasm within one minute of inflating the blood pressure cuff (Trousseaus sign). We were not able to demonstrate Chvostek sign.

His initial blood parameters were Hb 10.1 gm/dl, TLC 13,700 P 69L22E02 blood urea 75.5 mg/dl, serum creatinine was 3.5 mg/dl total bilirubin 0.93 mg/dl direct—0.45 mg/dl and indirect—0.48 IU SGOT 97.78 IU SGPT = 57.62 serum albumin 3.19 mg/dl, Serum amylase was found to be elevated 885 IU (30 - 110 IU/L) and lipase 379.8 IU (0 - 200 IU/L). At the time of seizures his serum total calcium was 6.45 mg/dl (8.5 - 10.5 mg/dl) corrected total calcium 7.25 mg/dl, phosphorus 3.93 (3.0 - 4.5 mg/dl) magnesium 2.28 (1.3 - 2.25 mg/dl).

3. DISCUSSION

The sign of neuromuscular irritability (Trousseau's sign) in hypocalcemia was first described by Armand Trousseau (1801-1867), who was a French physician [1]. Hypocalcemia is a common condition characterized by a net loss of calcium in greater quantities from extracellular fluid than replaced by the intestine or bone [2]. Trousseau's sign is carpopedal spasm that results from ischemia, such as that induced by pressure applied to the upper arm from an inflated sphygmomanometer cuff (**Figures 1** and **2**). Carpal spasm is induced by inflation of a blood pressure cuff to 20 mmHg above the patient's systolic blood pressure for 3 min (Trousseau's sign), in which metacarpophalangeal joint found in flexion with extension of the distal interphalangeal and proximal interphalangeal joints and finger adduction. It is sensitive and specific for hypocalcemia; it is present in 94% of patients with hypocalcemia and in only 1% of persons with normal calcium levels, other common condition in which this sign can be elicitated is hypomagnesemia. Our patient's seizures were controlled after correction of hypocalcemia by intravenous calcium gluconate infusion and further intravenous calcium, but his condition dete-

Figure 1. Metacarpophalangeal joint flexion, extension of the distal interphalangeal and proximal interphalangeal joints and finger adduction (Trousseau's sign) few seconds after inflation of blood pressure cuff.

Figure 2. Severe carpopedal spasm within one minute after inflation of BP cuff.

riorated further. He had to undergo hemodialysis repeatedly for deteriorating renal function (creatinine—8.6 mg/dl), he also developed septicemia and expired 20 days after admission.

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