Pericardial Effusion in a Teenaged Type 1 Diabetic Patient after Insulin Therapy

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Edema is a rare complication of insulin therapy[1]. According to literature, only ten cases of insulin edema in children and adolescents have been reported.

We present a 14 year old girl, a new case of diabetes mellitus type one, who developed generalized edema and pericardial effusion a few days after initiation of insulin therapy. Other causes of edema were ruled out. Her generalized edema and pericardial effusion improved spontaneously after about 20 days.

Pericardial effusion can be associated with generalized edema as a complication of insulin therapy. It does not need any treatment except for supportive therapy.

In our patient other causes of edema were ruled out.

Edema as a rare complication of insulin has been detected specially in new cases of diabetes mellitus type I and also in malnourished diabetic patients[2,3]. As stated before, insulin edema (IE) is usually a self limiting process and does not need any treatment, but it should be distinguished from other causes of edema including liver, kidney and heart problems. Therefore, it is necessary for physicians to know about this rare complication of insulin therapy. According to our review of the literature, none of reported cases of insulin edema in children and adolescents were associated with pericardial effusion[3]. In this study, we describe a new case of insulin edema that was associated with pericardial effusion.

The patient was a new case of diabetes mellitus type 1, who presented with diabetic ketoacidosis (DKA). At first, she was treated in intensive care unit due to severity of acidosis (pH=6.95, HCO_3=3 mEq/l, pCO_2=14 mmHg) and decreased level of consciousness.

About two days after improvement of DKA, the patient developed pitting edema of the upper and lower extremities that was aggravated gradually. After one week, in the follow up, the edema of both lower extremities was extended to the thighs and edema of the upper extremities to the forearms. Her general condition was good. She had no periorbital edema. Physical examination of the chest, heart and abdomen was completely normal. Other causes of edema were ruled out by appropriate paraclinical studies. She had normal CBC, blood urea, creatinine, sodium, potassium, albumin, liver function tests and electrocardiography.

Echocardiography revealed mild pericardial effusion. Because she had not any cardiovascular manifestation, no treatment was advised except observation. 20 days later in the follow-up, the edema was improved completely and the second echocardiography done by the same cardiologist did not show any signs of pericardial effusion. She had not received any medication in that period except for insulin.

Generalized edema is a rare complication of insulin therapy. Although IE has been known for a long time, its pathogenesis remains unclear[4].

According to our search, from ten cases of IE reported in children and adolescents four cases were new cases of diabetes mellitus type 1 and the other six cases were poor controlled known cases whose insulin dosages were increased recently[3]. Three out of ten cases received a diuretic as the management of IE, but IE in the other seven cases was self-limited[3].

In adults, a few cases of pleural effusion and ascites have been reported[5], but none of the patients under 16 years of age had pleural or pericardial effusion. Our patient is the only case of childhood insulin-induced pericardial effusion being reported. We did not find any other cause of edema and pericardial effusion in our patient. As in most of the previously reported cases, both generalized edema and pericardial effusion were self-limited and did not need any treatment.

Key words: Insulin; Edema; Diabetes; Pericardium; Effusion

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Association of Henoch-Schoenlein Purpura with Hepatitis A

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Henoch-Schonlein purpura (HSP) is a small vessel vasculitis which is common in children and its etiology is unknown, but it is thought to be the result of immune complex reaction to various antigens. So far the association of HSP and hepatitis A has been reported in only five cases[1-5]. We report another case of HSP after hepatitis A with a short review of the literature.

In April 2009, an eight-year-old boy was admitted in our hospital with chief complaint of pain and swelling of knees and ankles and rash on lower limbs. He had abdominal pain and vomiting 3 days before admission. He was admitted in a local general hospital 36 days ago because of jaundice. Alanin aminotransferase (ALT) was 3102 IU/L and IgM anti- hepatitis A virus (HAV) positive. He was discharged with the final diagnosis of non complicated Hepatitis A. He didn't have history of taking any medicine, vaccine or blood product during the past 2 months. On physical examination, temperature was 37.2°C, blood pressure 80/60 mmHg and pulse rate 100/min. Non blanching red-brown papules were distributed over both thighs and legs, the range of motion was reduced in both knees and effusion was apparent in left knee, otherwise physical examination was normal.

Laboratory evaluation showed leukocyte count 10100/mm^3, hemoglobin 13.1 g/dL, platelet 513000/mm^3. Prothrombin time (PT), activated partial thromboplastin time (aPTT), urine analysis, stool examination and urinary system sonography were normal. Erythrocyte sedimentation rate (ESR), ALT, aspartate aminotransferase (AST), and alkaline phosphatase (ALP) were 34mm/h,15IU/L, 19 IU/L and 168 IU/L respectively. HAV antibody (IgM) was positive and HBs Ag, HBc Ab (IgM) and hepatitis C virus (HCV) Ab were negative. Ibuprofen (10mg/kg/8h) was started with diagnosis of HSP. Although we often do not hospitalize HSP patients, and this boy was a noncomplicated case that only needed outpatient follow-up. But because he was from a far rural area we decided to keep him in hospital for a short time. At the second day of admission the patient developed abdominal pain and frequent vomiting followed by hematemesis, hematochesia and melena in the third day, abdomen was soft and nontender at that time. Hemoglobin and platelets were 12.1 g/dL and 462000. PT, PTT, urine analysis, blood urea nitrogen (BUN), and creatinine were normal. Methylprednisolone 2 mg/kg was started in second day and pediatric surgery consultation was requested. The surgeon recommended close monitoring and continuing of medical treatment. Gastrointestinal problems were resolved completely by the fifth day (without any more intervention). The patient was discharged at the seventh day (with prednisolone 1.5 mg/kg for another week), while he was able to eat and walk and felt completely well, although some degree of asymmetrical non pitting edema and brownish papules still were present on both shins. The boy was followed up for six months after discharge; he was completely well since the second week after discharge.

The first case of HSP associated with hepatitis A, was reported by Garty[1]. Four other cases (three boys and a girl) have been reported since then[2-5]. The average age of these cases was 10.4 years and all of them had a fully symptomatic

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