



Coexisting Duchenne Muscular Dystrophy and Gilbert's Syndrome: A Case Report

Duchenne Müsküler Distrofi ve Gilbert's Sendromu Birlikteliği: Bir Olgu Sunumu

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ABSTRACT

Gilbert's syndrome is characterized by unconjugated hyperbilirubinemia. A 5-year-old boy presented to our hospital with mild hyperbilirubinemia. The patient had persistent unconjugated hyperbilirubinemia with high liver enzymes and creatine phosphokinase. Haemolysis was excluded by normal haemoglobin, and reticulocyte count and finally he was diagnosed to have Gilbert's syndrome. His creatine kinase concentration was 15600 U/l, and he had a deletion in the dystrophin gene. Finally, the patient was diagnosed both Gilbert's syndrome and Duchenne muscular dystrophy. To our knowledge, this is the first report of the concomitance of Duchenne muscular dystrophy and Gilbert's syndrome in the literature.

Key Words: Gilbert's syndrome, Duchenne muscular dystrophy, child

ÖZET

Gilbert's sendromu konjuge olmayan hiperbilirubinemi ile karakterize bir hastalıktır. 5 yaşında erkek çocuğu hafif sarılık ile hastanemize getirildi. Hastanın karaciğer enzimleri ve kreatin fosfokinaz yüksekliği ile beraber ısrarcı unkonjuge hiperbilirubinemisi vardı. Normal hemoglobin ve retikülosit değerleri ile hemoliz dışlandı ve Gilbert's sendromu tanısı konuldu. Kreatin kinaz değeri 15600 U/l idi ve distrofin geninde delesyon mevcuttu. Sonuç olarak hastaya Gilbert's sendromu ve Duchenne Müsküler Distrofi tanısı kondu.

Bilgilerimize göre, Duchenne Müsküler Distrofi ve Gilbert's sendromu birlikteliği literatürdeki ilk olgudur.

Anahtar Kelimeler: Gilbert's sendromu, Duchenne Müsküler Distrofi, çocuk

INTRODUCTION

Duchenne muscular dystrophy (DMD) affects 1:3500 live male births. It is an X-linked recessive disorder of the dystrophin gene at Xp21 resulting in absence of dystrophin in muscle fibres¹. The symptoms of DMD initially include delayed motor milestones and weakness of the proximal muscles, usually identified by age 5 years.

Gilbert's syndrome (GS) is a common benign hereditary disorders of bilirubin metabolism with a prevalence of 3% to 6% in the general population².

It is characterized by chronic, benign, intermittent jaundice without other clinical manifestations or abnormalities on liver microscopy.

The coexistence of GS with other clinically significant conditions could interfere with their diagnoses. We describe a case of DMD, which, to our surprise, had unconjugated hyperbilirubinaemia and high liver enzymes, posing a diagnostic dilemma. In literature, coexistence of DMD and GS has not been described before.

CASE REPORT

A 5-year-old boy presented to our hospital with jaundice since last year. In his previous medical history, he had walked at two years and had always had difficulties with stairs and with running. There was no history of hepatitis, drug ingestion, muscular dystrophy or systemic disease. His father was healthy, but mother also had jaundice since childhood.

On examination, he had proximal shoulder and pelvic girdle muscle weakness, with a waddling gait, pseudohypertrophy of his calf muscles, and a positive Gowers's manoeuvre. Physical examination revealed mild icterus, no hepatosplenomegaly, and stool is normal color.

Laboratory data revealed haemoglobin level of 11.1 g/dL with a reticulocyte count of 1.5%. Serum bilirubin was elevated (total 2.9 mg/dL, unconjugated 2.6 mg/dL). Liver enzymes showed alanine transaminase (ALT); 175 U/L, aspartate transaminase (AST); 265 U/L, gamma glutamyl transpeptidase; 11 IU/L, and alkaline phosphatase; 54 IU/L. Glucose-6-phosphate dehydrogenase, Coomb's direct and indirect tests, serum copper level, vitamin B12, folate, iron studies, rheumatoid factor, antinuclear antibodies, serum albumin, prothrombin time, and haemoglobin electrophoresis were also normal. Results of serology for cytomegalovirus, Epstein-Barr virus, hepatitis, A, B, and C were negative. Findings on abdominal ultrasonography were also normal.

Jaundice was persistent, with unconjugated bilirubin levels about 3 mg/dl. Finally, the diagnosis of GS was made with clinical and laboratory findings.

His creatine phosphokinase (CPK) level was 15.600 IU/l. U/l. A muscle biopsy confirmed a dystrophic process with absent dystrophin staining. He had a deletion in the dystrophin gene that included exons 45.

DISCUSSION

Duchenne muscular dystrophy is the most common neuromuscular disorders of childhood. It

can have a number of features related to muscle pathology: delay in development of gross motor skills; muscle weakness; falls; waddling gait; Gowers's manoeuvre; pseudohypertrophy of the calves; and failure to thrive¹. The diagnosis is suspected when the CPK levels are highly elevated and is confirmed by muscle biopsy and duplication in the dystrophin gene.

Gilbert's syndrome was first described by Gilbert in 1901. It is considered a common benign familial disease with a possibly autosomal dominant mode of inheritance^{2,3}. Typically, GS is diagnosed in children who present with mild, predominantly unconjugated hyperbilirubinemia but with no structural liver disease or any evidence of hemolysis.

Gilbert's syndrome may be diagnosed incidentally at a routine examination or when blood being examined for another reason. Jaundice is mild and intermittent. Bilirubin levels are most often <3 mg/dl⁴. Specialist diagnostic tests include the increase in serum bilirubin on fasting or following intravenous nicotinic acid which raises the osmotic fragility of RBC and the fall on taking phenobarbitone which induces hepatic conjugating enzymes⁵. However, GS is usually diagnosed easily without recourse to these specialist methods. The demonstration of a increased bilirubin level that is predominantly unconjugated, with normal liver enzymes and no evidence of haemolysis, is usually sufficient^{5,6}.

Gilbert's syndrome should be considered with children with unexplained hyperbilirubinemia. But high liver enzyme levels is an unexpected finding for GS. Therefore, CPK level should be measured in all children, especially boys with high liver enzymes.

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