Shwachman syndrome - variations of presentation in adults

Shwachman syndrome is a congenital multisystem disorder, characterized by exocrine pancreatic insufficiency, hematological and skeletal abnormalities and growth retardation.\(^1\)\(^2\)\(^3\) Most patients with this syndrome described so far have been in the pediatric age group. We describe two adults with Shwachman syndrome, who also had many atypical features including presence of platyspondyly, marked neurological dysfunction, chronic liver disease, and pancreatic calcification.

**Case 1:** A 25-year-old woman presented to us with growth retardation, delayed menarche, and recurrent episodes of abdominal pain since the age of 5 years. She was detected to have diabetes mellitus and steatorrhea when she was 20 years old. She then gradually developed spastic paraparesis, cerebellar dysfunction, peripheral and autonomic neuropathy and severe dysfunctions of higher mental function by the age of 22 years. On examination, she was cachectic and anemic. Liver function tests, renal function tests, and renal tubular functions were normal. Skeletal survey revealed delayed bone age, metaphysical dysplasia in the long bones, multiple transverse arrest lines, long bone trabeculations, flaring of ribs and osteopenia. CECT of the abdomen revealed an atrophic pancreas with fatty infiltration. The d-xylose test and duodenal biopsy were normal; however she had steatorrhea (stool fat excretion 22.8 g and 59.2 g per 24 hours on two occasions). Serological tests for celiac disease were negative. Serum vitamin B\(_12\), serum iron, total iron binding capacity and hemoglobin electrophoresis were normal. Bone marrow biopsy showed a markedly hypocellular marrow; there was no megaloblastosis. The sweat chloride concentration was 30.7 mg/L (normal <60) and delta F508 of CFTR region was negative. Ultrasonography and CECT of the abdomen revealed a thin and atrophic pancreas with spots of parenchymal calcification, and features of chronic liver disease. Upper gastrointestinal endoscopy showed low grade esophageal varices. D-xylose absorption test was abnormal but there was no villous abnormality on jejunal biopsy. Serum IgA anti-endomysial antibody and IgA anti-gladain antibody were negative. He had steatorrhea of 13.2 gm of fat per day. The workup for etiology of chronic liver disease including viral markers, autoimmune hepatitis serology, serum ceruloplasmin, Kayser Fleisher ring, lipid profile, doppler study for hepatic vein or inferior vena cava were negative. He was advised to undergo a liver biopsy, but the family refused. He was treated with hematins and pancreatic enzyme supplementation. He was lost to follow after 1 year.

Although most patients with Shwachman syndrome are diagnosed in childhood a few patients have...
been diagnosed as late as 28 years of age.\textsuperscript{3,4} In addition to the typical features of Shwachman syndrome, both our patients had a few atypical features such as presence of pancreatic calcification, advanced neurological manifestations, and platyspondyly which has not been described earlier in this syndrome.

The characteristic skeletal abnormalities in patients with Shwachman syndrome include metaphyseal chondrodysplasia, costochondral thickening, flaring of lower ribs, osteopenia, transverse arrest lines, genu valgus, and kyphosis.\textsuperscript{1,4} Platyspondyly, as seen in patient 2, has not been described earlier. The neurological features include mental retardation and hypotonia, delay in developmental milestones.\textsuperscript{1,3,4} Our first case had cerebral atrophy, myelopathy, cerebellar dysfunction, peripheral neuropathy and autonomic neuropathy. Some of these features suggested a diagnosis of subacute combined degeneration of the spinal cord; however, a lack of evidence of vitamin B\textsubscript{12} deficiency and a lack of response to vitamin B\textsubscript{12} supplementation excluded this possibility. Part of her neurological dysfunction may be secondary to nutritional deficiencies, but some of these features appear to be the primary manifestations of Shwachman syndrome.

Hepatomegaly and elevation of liver enzymes are the usual hepatic manifestations of Shwachman syndrome;\textsuperscript{3,4} occurrence of chronic liver disease has been described in one case earlier.\textsuperscript{5} The natural history of Shwachman syndrome in adulthood is not known and some of the atypical features present in our patients may be due to the advanced nature of the disease and their survival into adulthood.

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References
