Case Report

Brain Magnetic Resonance Imaging of Werner Syndrome

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INTRODUCTION

Werner syndrome, first described by Otto Werner in 1904, is a rare genetic disease characterized by premature senescence. Autosomal recessive inheritance and a mutation at chromosome 8p have been recognized[1,2]. The mean life expectancy is 55 years old as of 2008. The main causes of death are neoplasm and cardiac or cerebrovascular accidents. Neuroradiological studies of neurologically asymptomatic cases of Werner syndrome are lacking.

CASE REPORT

A 48-year-old male patient who had been diagnosed with Werner syndrome visited our hospital complaining of a mild headache. His growth had stopped around 14 years old. His height was 157 cm, and his body weight was 36 kg. He had had white hair for 20 years old. He had been diagnosed with hyperparathyroidism, cataracts, hyperlipidemia, and osteoporosis and showed a bird-like face, scleroderma, skin ulcer, and calcification of the foot. Both of his parents had had malignancies. He was married but had no children. A neurological examination revealed no abnormalities. Brain magnetic resonance imaging (MRI) demonstrated diffuse cerebral atrophy. No ischemia or tumor was observed. Susceptibility weighted imaging (SWI) showed multiple microbleeds at the brainstem and basal ganglia (Figure 1). Magnetic resonance angiography showed normal findings. His headache was mild and non-specific, so we diagnosed him with a tension-type headache.

DISCUSSION

The diagnostic criteria of Werner syndrome are shown in table. Although neurological symptoms are not an early sign of Werner syndrome, some neurological abnormalities, like dementia, brain tumor, and cerebrovascular accidents, have been reported in Werner syndrome patients[1,2]. Only some reports have described the MRI findings of Werner syndrome patients, including cerebral atrophy, ischemia, vascular accidents, and tumor[3-8]. We found only a few reports including the findings of T2* or SWI for a Werner syndrome patient[9]. Werner syndrome may be associated with a high risk of not only ischemic but also hemorrhagic cerebrovascular diseases.

Legend of Figure: Brain MRI, T1 weighted(A) and T2 weighted(B) images demonstrated diffuse cerebral atrophy. No ischemia or tumor...
REFERENCES


Table 1 diagnostic criteria of Werner syndrome[1].

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>Short stature, light bodyweight, slender, beak-shaped nose</td>
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<td>2</td>
<td>Premature senescence: bird-like appearance, alopecia / gray hair, hoarseness, diffuse arteriosclerosis, juvenile bilateral cataracts, osteoporosis</td>
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<td>3</td>
<td>Scleroderma-like skin changes; atrophic skin and muscle, hyperkeratosis, telangiectasis, ulcer, calcification, hyperpigmentation</td>
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<td>4</td>
<td>Endocrine abnormalities: Diabetes mellitus, hypogonadism, dyslipidemia</td>
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was observed. SWI(C) showed multiple microbleeds at the brainstem and basal ganglia. Magnetic resonance angiography(D) showed normal findings.

Figure 1 Brain MRI, T1 weighted(A) and T2 weighted(B) images demonstrated diffuse cerebral atrophy. No ischemia or tumor was observed. SWI(C) showed multiple microbleeds at the brainstem and basal ganglia. Magnetic resonance angiography(D) showed normal findings.


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