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Diffuse idiopathic skeletal hyperostosis: A case report

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Abstract

Diffuse idiopathic skeletal hyperostosis is a disease of old age, in which there is bony proliferation of spine in ventral and lateral aspects of vertebral body. A 80-years-old male presented to us with features of low back pain radiating along the right lower limb in the posterolateral aspect. After examination and investigations, he was found to have metabolic syndrome, degenerative lumbar disc disease, and his X-Ray and MRI showed diffuse thickening of lumbar vertebrae from L2-S1. This suggested that the patient had diffuse idiopathic skeletal hyperostosis with extraspinal manifestations which coexisted with lumbar degenerative disc disease. This case shows that both diffuse idiopathic skeletal hyperostosis and lumbar degenerative disc disease can coexist. Diffuse idiopathic skeletal hyperostosis should also be kept as a differential diagnosis in chronic low back pain in old age.

INTRODUCTION

In diffuse idiopathic skeletal hyperostosis (DISH), there is bony proliferation of spine which becomes relatively thick, along the ventral and lateral aspects of the vertebral bodies along with peripheral entheses. Additionally various constitutional metabolic abnormalities have been reported to be associated with DISH in varying degrees. The prevalence of DISH in adults over the age of 50 years is around 25% for men and 15% for women.[1]

CASE REPORT

A 80-years-old male presented to us with diffuse dull aching pain in the lower back for one year, which increased on walking and bending forward. Over the last 3 months, the pain had increased in intensity and it became radiating in character along the posterior aspect of the right thigh and right calf muscle. On examination, the blood pressure was 178/90 mmHg, the pulse was 82/ min, regular and normovolumic. There was central obesity with waist circumference of 43 inches. He had a stooped posture and Schober's test was positive. On neurological examination, the motor and sensory examinations were normal. All superficial and deep tendon reflexes were normal except the right ankle jerk which was diminished. There was no local spinal tenderness. He was investigated with a provisional diagnosis of lumbar spondylosis with S1 radiculopathy. The nerve conducting study showed right S1 radiculopathy. X–Ray lumbosacral spine (Figure 1, 2) showed osseous hypertrophy bridging anteriorly and laterally in L2-S1 vertebral region. Sacroiliac joints were normal. The MRI lumbosacral spine (Figure 3, 4) showed degenerative lumbar disc disease with minimal disc bulge at L5-S1 vertebral level. There was also extensive ossification of anterior longitudinal ligament producing bony fusion at L2-S1 suggesting DISH. His blood investigation showed hemoglobin 12.0 gm/dl, total leukocyte count 5800/cu mm with 71% polymorphs, 21% lymphocytes and 5% eosinophils. The ESR was 9.0 mm/hr and CRP 0.1 mg/dl. Blood sugar fasting was 71 mg/dl and post prandial blood sugar was 108 mg /dl. The serum uric acid was 4.1 mg/dl, thyroid stimulating hormone 3.5 uIU/ml, serum triglyceride 198 mg/dl, serum LDL 104 mg/dl and HDL 52 mg/dl. HLA B27 was negative.

He was diagnosed to have DISH with lumbar degenerative disc disease and metabolic syndrome. He was managed conservatively on drugs, physiotherapy and bed rest. His radiating pain subsided but low back pain persisted.

DISCUSSION

In 1942 Oppenheimer[2] reported the ossification of anterior longitudinal ligament and called it spondylitis ossificans ligamentosa. He attributed

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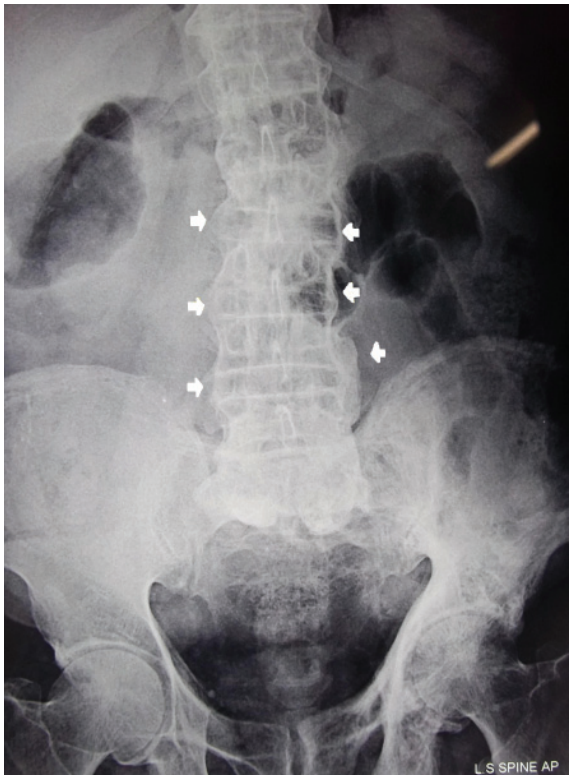

Figure 1. X-Ray L-S spine A-P view. Arrows show flowing osteophytes and soft tissue ligamentous calcification.

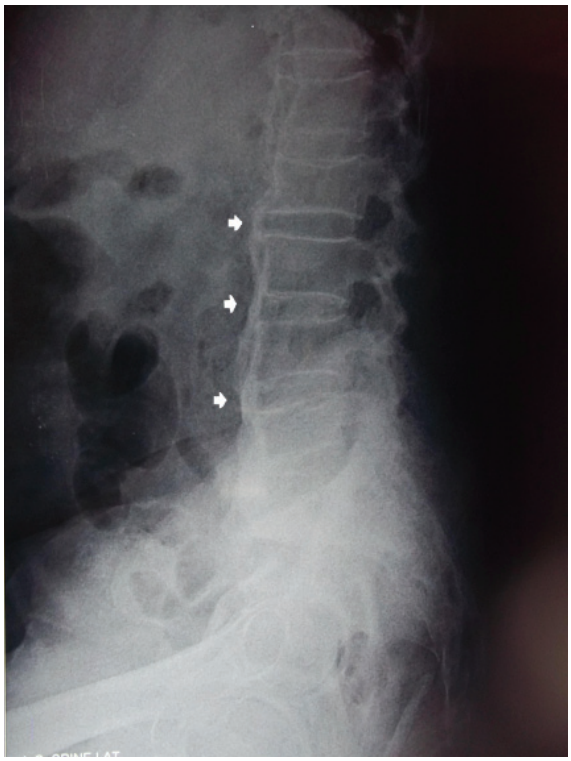

Figure 2. X-Ray L-S spine lateral view. Arrows show ossification of anterior longitudinal ligament.

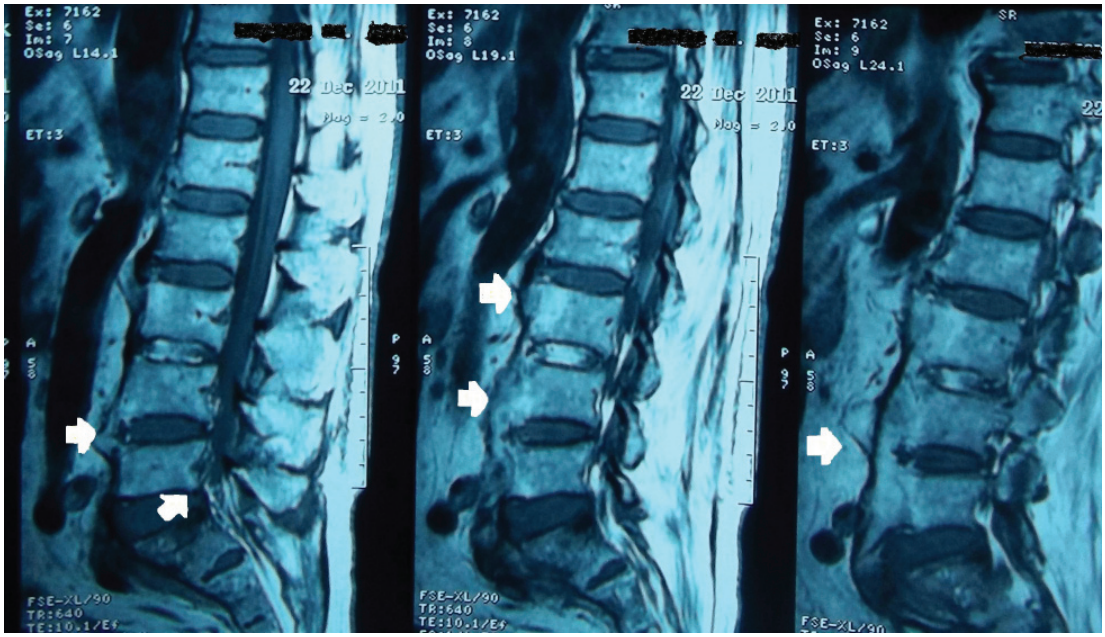

Figure 3. MRI (T1W) L-S spine sagittal view. Arrows show flowing osteophytes involving lumbar region with mild disc prolapse at L5-SI.

this as a physiological phenomenon. In 1950, Forestier and Rotes[3] described it as a disease of the spine developing in old people, with a painless onset and clinical, pathological and radiological feature dissimilar to ankylosing spondylitis. They called this condition "senile ankylosing hyperostosis of the spine". Resnick *et al* [4], citing the distinctive radiographic appearance in the peripheral skeleton, termed it diffuse idiopathic skeletal hyperostosis (DISH).

DISH has for a long time thought to be an asymptomatic condition, usually detected incidentally at old age. It has been considered a radiographic entity with little clinical signs and symptoms. But our patient presented with significant back pain and restriction of spinal movements. Mata *et al* [5] recently emphasized that DISH patients may have spinal pain and marked decrease of spinal mobility. DISH is not limited to the spine and may affect multiple peripheral sites independently. Peripheral involvement in DISH is characterized by involvement of joints usually unaffected by the osteoarthiritis, increased hypertrophic changes compared with primary

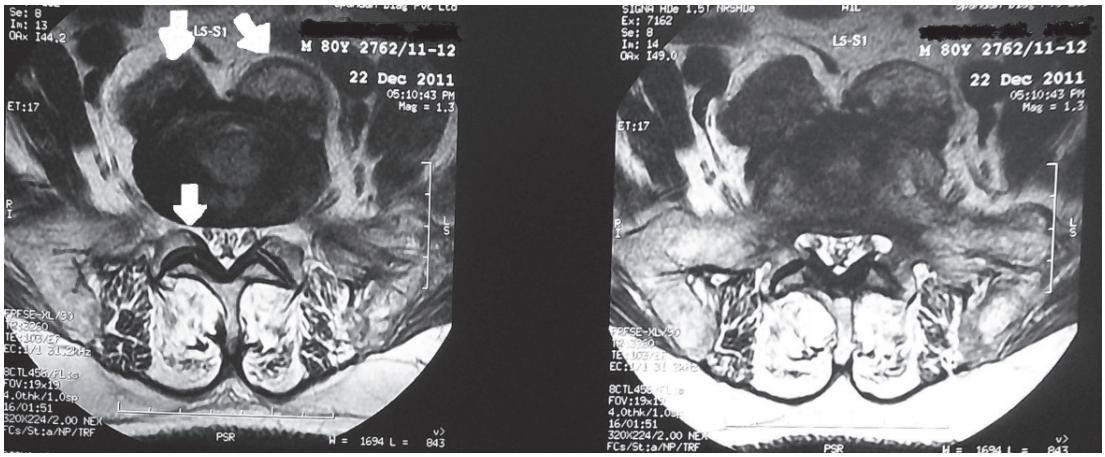

Figure 4. MRI (T2W) L-S spine axial view. Arrows show narrowing of neural foramen on right side and calcification of anterior longitudinal ligament.

osteoarthiritis, prominent enthesopathies at various sites adjacent to peripheral joints, and calcification and ossification of entheses in sites other than joints. Several metabolic derangements and concomitant diseases have been suggested to be associated with DISH including obesity, increased waist circumference, hypertension, dyslipidemia, diabetes mellitus, hyperuricemia, metabolic syndrome and increased risk of cardiovascular diseases.[4] Our patient also had increased waist circumference, hypertension, dyslipidemia and metabolic syndrome.

Like this patient, superficially DISH resembles degenerative spondylosis. However the ossification in DISH differs. In DISH the disc spaces are not narrowed and osteophytes do not arise from the vertebral bodies themselves. DISH develops near, but not continuous with the anterior and lateral margins of vertebral bodies, usually vertically having the intervertebral disc intact. When these conditions coexist in same spine, they progress simultaneously. Differentiating ankylosing spondylitis and from DISH is important. DISH subjects are elderly and have few symptoms. Radiologically in ankylosing spondylitis, the posterior apophyseal and sacroiliac joints are involved, syndesmophytes are thin and vertically oriented, posterior ligaments are also involved. In DISH, the apophyseal and sacroiliac joints are normal and the anterolateral hyperostosis is thick and irregular.[6]

In conclusion DISH should be considered an important differential diagnosis in chronic low back pain and it must be differentiated from degenerative spondylosis and ankylosing spondylitis. However, DISH and and degenerative spondylosis may coexist as in our patient.

DISCLOSURE

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