

PARAPARESIS DUE TO METASTATIC PROSTATIC CANCER EFFECTIVELY TREATED WITH A HIGH DOSE OF DIETHYLSTILBESTROL DIPHOSPHATE: A CASE REPORT

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A case of paraparesis due to thoracic vertebra metastasis of prostate cancer is reported. Treatment through a high dose of diethylstilbestrol diphosphate (DES-P) was very effective. Two and a half years later, the patient is ambulatory and relapse has not occurred. We recommend the use of a high dose of DES-P for spinal cord compression due to prostate cancer, instead of laminectomy or radiation.

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Key words: Prostate cancer, Paraparesis, Diethylstilbestrol diphosphate

INTRODUCTION

Although spinal cord compression due to prostate cancer is not rare, its treatment methods are still controversial. Estrogen therapy, androgen deprivation therapy, radiation therapy, laminectomy and various combination therapies have all been used in the past. Herein, we report a case of paraparesis due to thoracic vertebra metastasis of prostate cancer, which was treated only with estrogen.

CASE REPORT

The patient, a 78-year-old male, was admitted to hospital in the Orthopaedic Surgery Department on October 8, 1990, with a 2-month history of lumbago and weakness in both lower extremities. The patient was transferred to our Urologic Department, on October 12, 1990, because prostate cancer was suspected. He had been admitted to another hospital on September 25, 1990, where a bone scan and myelogram showed metastatic bone cancer, and the original tumor was unknown. The past history revealed a gastric ulcer and cholelithiasis in 1986. A rectal examination revealed that the prostate was neither enlarged nor hard. The laboratory findings of significance were serum prostatic

acid phosphatase (PAP), 66 ng/ml, serum prostate specific antigen (PSA), 1,380 ng/ml, and serum alkaline phosphatase, 348 ng/ml, (normal alkaline phosphatase 80 to 230 units). Hypalgesia was present below T11. A moderate weakness of the lower extremities was noted. There was no hyperreflexia at the knee or ankle clonus or Babinski signs bilaterally, nor were there disturbances in the bladder function or rectal sphincter. There was no prominent congenital or degenerative change on plain x-ray film or CT at the thoracic level. On the lumbar myelogram, complete blockage was observed at Th11-Th12. Extradural compression on the thoracic spinal cord at the Th11-Th12 level was observed on a CT-myelogram (not shown). Sagittal T2-weighted MRI (magnetic resonance imaging) showed not only a high intensity area at the multiple thoracic and lumbar spine, but also in the spinal canal at the Th11 level (Fig. 1). A bone scan also confirmed multiple bone metastasis (Fig. 2). These findings suggested that the origin of metastasis was in the prostate. A transperineal prostate needle biopsy was performed. A histology showed moderately differentiated adenocarcinoma. The patient immediately received a high dose of DES-P (500 mg/day first 4 days and then 1,000 mg/day

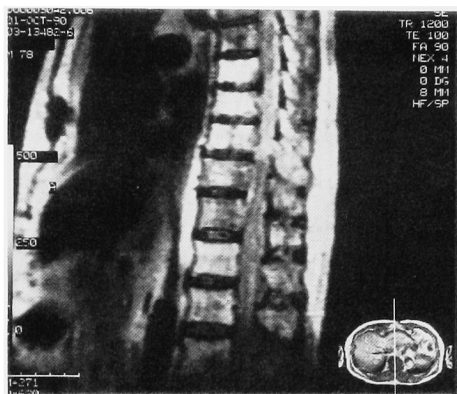


Fig. 1. MRI before treatment: Note high intensity area at T11-T12.

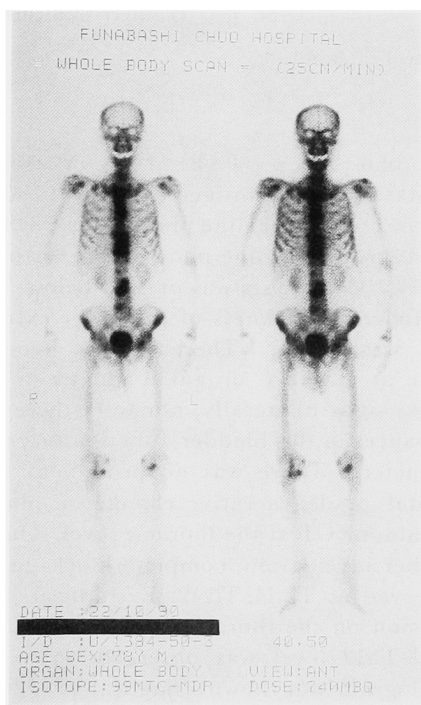


Fig. 2. Bone scan before treatment: Abnormal accumulation was observed in the cervical spine, dorsal spine, lumbar spine, 3rd rib, left hip joint and knee joint.

for 33 days). Castration was not performed. After 30 days of treatment, the patient was able to walk with assistance. Lumbago also decreased. Two months later, the patient could walk without assistance and the tumor marker (PAP and PSA) became normal. During a high dose

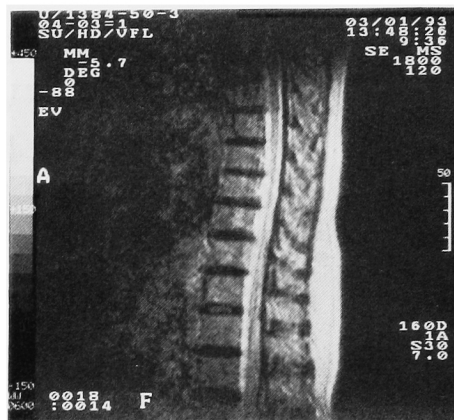


Fig. 3. MRI at present, 2½ years later: The high intensity area completely disappeared.

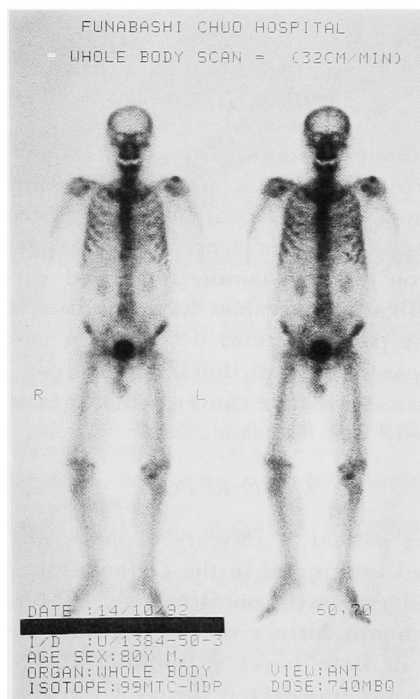


Fig. 4. Bone scan 2 years after treatment: Marked improvement was demonstrated.

of DES-P treatment, no side effects were observed except mild gynecomastia. Then DES-P was changed to estramustine phosphate, 560 mg/day, and continued. The patient was discharged on February 26, 1991. Since the patient suffered severe dermatitis on June 6, 1991, which was

thought to be an allergic side effect of estramustine phosphate, we changed the treatment to DES-P (200 mg/day) plus UFT (tegafur • uracil) (400 mg/day) or CMA (chlormadinone acetate) (100 mg/day) plus UFT (400 mg/day).

As present, 2 and a half years later, sagittal T2-weighted MRI has shown disappearance of abnormal intensity and a normalized thoracic cord can be seen at the Th11 level (Fig. 3). A bone scan has also shown marked improvement (Fig. 4). Neurological examination has shown complete recovery of the muscle power of the lower extremities and marked improvement of the sensory disturbance below Th11 level.

DISCUSSION

In the Western world, the effectiveness of estrogen treatment to spinal cord compression due to prostate cancer has been recognized^{1,3}), until the Veterans Administration Cooperative Urological Research Group warned that estrogen subsequently caused cardiovascular disease⁴). Since then, estrogen has not been used so frequently for treatment of prostate cancer in the West. On the contrary, in Japan, estrogen therapy has successfully been performed for advanced prostate cancer and its usefulness has also been widely recognized by many urologists⁵⁻⁷). Furthermore, we believe that diethylstilbestrol has a direct cytotoxic effect only on prostate cancer cells from experiments on Noble rat prostatic tumors⁸). Therefore, in a case of extreme advanced prostate cancer, we believe that a high dose of DES-P treatment (not a low or moderate dose of DES-P) is very important. Indeed, we recently reported that large pelvic lymph node metastasis of prostate cancer was markedly shrunk by a high dose of DES-P⁹). Although there is still no uniform recommendation for treatment of spinal cord compression of prostate cancer, we treated the patient, who had spinal cord compression due to prostate cancer, with a high dose of DES-P. Paraparesis in our case showed dramatic improvement through a high dose of DES-P. The improvement was clearly

shown by MRI. These findings indicated that DES-P not only killed metastatic prostate cancer cells, but also repaired the surrounding tissues. To our knowledge, this is the first report of complete recovery of metastatic spinal cord compression of prostate cancer by a high dose of DES-P demonstrated by MRI.

Although most cancer cells were killed by the treatment with a high dose of DES-P, a few active cancer cells must still be present (androgen dependent and androgen independent cancer cells). For such patients to survive longer, it is very important to control the remaining active cancer cells. After treatment with a high dose of DES-P, we used estramustine phosphate and then used a low dose of DES-P plus UFT or CMA plus UFT. At present, 2½ years later, relapse has not occurred. Since relapse often occurs in advanced prostate cancer we must continue careful follow up for a long time.

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和文抄録

前立腺癌脊椎骨転移による Paraparesis に対し、大量 Diethylstilbestrol diphosphate 投与が著効を示した1例

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患者は78歳、男性。2ヵ月間の腰痛と両下肢麻痺にて来院。広範囲の骨転移を有する前立腺癌であった。paraparesisの原因は、Th11-Th12の前立腺癌脊椎骨転移による spinal cord compression であった。大量の diethylstilbestrol diphosphate 投与にて著効を示し、歩行可能となった。椎弓切除術、放射線療法、

去勢、あるいはそれらの組み合わせがよいとする論文が最近多いが、本例は、diethylstilbestrol diphosphate 投与のみで著効を示したので、その有用性につき考察した。

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