TITLE:
Paraparesis due to metastatic prostatic cancer effectively treated with a high dose of diethylstilbestrol diphosphate: a case report

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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. 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-xray film or CT at the thoracic level. On the lumber 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 lumber 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.

Fig. 3. MRI at present, 2 1/2 years later: The high intensity area completely disappeared.

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

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 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, sag-
ittal T2-weighted MRI has shown disap-
pearance of abnormal intensity and a nor-
malized thoracic cord can be seen at the
Th11 level (Fig. 3). A bone scan has also
shown marked improvement (Fig. 4). Neu-
rological 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 com-
pression due to prostate cancer has been
recognized1,3), until the Veterans Adminis-
tration Cooperative Urological Research
Group warned that estrogen subsequently
caused cardiovascular disease). 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 use-
fulness 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 pros-
tatic tumors8). Therefore, in a case of
extreme advanced prostate cancer, we be-
lieve that a high dose of DES-P treat-
ment (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
shrunken by a high dose of DES-P9). Al-
though there is still no uniform recommend-
dation for treatment of spinal cord com-
pression 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 andro-
gen 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 phos-
phate 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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脇坂 正美、高岸 秀俊

患者は78歳。男性。2カ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合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、それの有用性について考察した。

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