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Leiomyosarcoma of the Prostate

— A case report —

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〈국문초록〉

전립선의 평활근육종

— 1예 보고 —

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최 혜 영 · 오 용 호 · 조 경 식 · 이 문 규

전립선의 평활근육종은 아주 드문 종양으로 전립선의 전체 악성종양중에서는 0.1% 이하의 발생율을 나타내며 문헌상 이제까지 75례만 보고되고 있다. 전립선의 평활근육종은 재발이 잘 되고 전이가 일찍 되는 종양으로 전립선암이나 양성 전립선 비대와의 감별이 중요한 것으로 사료되어 저자들은 1예를 경험하였기에 다른 문헌고찰과 함께 보고하는 바이다.

— Abstract —

Leiomyosarcoma of the prostate, malignant smooth muscle tumor, is very rare tumor. Leiomyosarcoma of the prostate is characterized by local aggressiveness and early distant metastases. The prognosis of the leiomyosarcoma of the prostate is usually poor and almost always wide spread at the presentation.

We experienced a prostatic leiomyosarcoma with extensive pulmonary metastases.

We present computed tomographic, ultrasonic, and pathologic findings and discuss this entity with a pertinent review of the literatures.

Index Words : Prostate, Leiomyosarcoma, 844.327
Prostate, CT, US, 844.1211.12981

Case

A 35–year–old man was admitted to the Asan Medical Center with a one–month history of urinary frequency, nocturia, constipation, and perineal pain. On physical examination, he was ill–looking appearance and had a weight loss about 10Kg for one month. Laboratory studies showed a normal urinalysis, normal acid phosphatase level, and normal CBC. On rectal examination, stony–hard, greatly–enlarged and smoothly–outlined prostate was palpable. Chest

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X–ray showed multiple, wide–spread, variable sized nodules in the entire both lung fields(Fig. 1). Computed tomographic study(CT) showed asymmetrically enlarged prostate and ill–defined lower density mass in the mainly central portion of the prostate(Fig. 2). Pelvic ultrasound(US) examination revealed asymmetrical enlarged prostate with inhomogenous internal echo–texture(Fig. 3). Perineal prostatic biopsy demonstrated poorly differentiated spindle cells arranged in whorled and streaming pattern, diagnostic of leiomyosarcoma (Fig. 4).

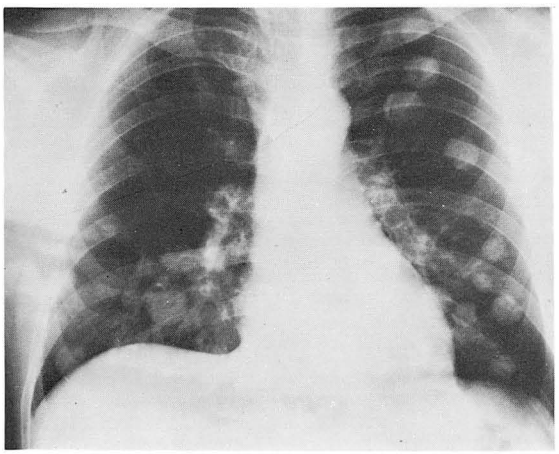

Fig. 1. Chest X–ray : Multiple, wide–spread, variable –sized nodules in the entire both lung fields.

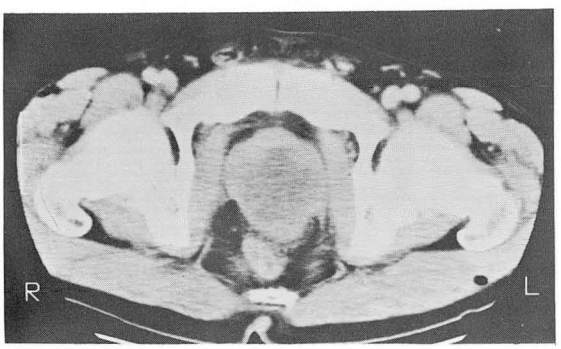

Fig. 2. Computed tomographic findings : Asymmetrically enlarged prostate and ill–defined lower density mass in the mainly central protion of the prostate.

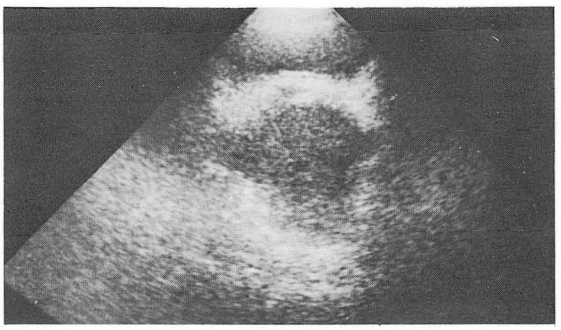

Fig. 3. Ultrasonographic findings : Asymmetrical enlarged prostate with inhomogeneous internal echo–texture in entire prostate.

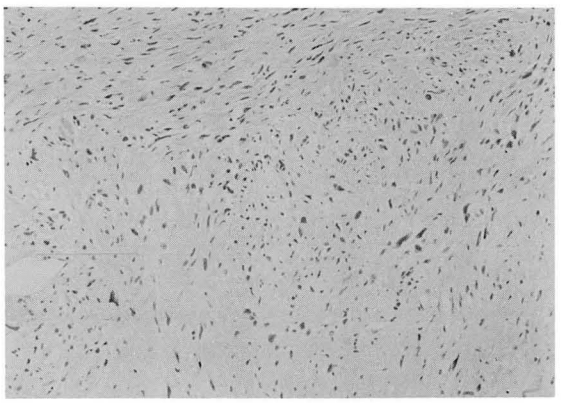

Fig. 4. Microscopic findings : Poorly differentiated spindle cells arranged in whorled and streaming pattern.

Discussion

Among primary malignant tumors of the prostate, sarcoma is very rare. The prostatic sarcoma arises from the mesoderm and differentiated into fibrosarcoma, lymphosarcoma and myosarcoma[1]. About 65% of the prostatic sarcoma is myosarcoma, which constitutes 40% of leiomyosarcoma and 60% of rhabdomyosarcoma[2]. Leiomyosacoma of the prostate was described for the first time by Isambert(1853), since then approximately 75 cases have been documented[2,3]. Leiomyosarcoma originated from smooth muscle fibers of the prostate which was less than 0.1% of all prostatic malignant tumors and 25% of all prostatic sarcomas[3,4,5].

Christoffersen surveyed a total of 59 cases of the leiomyosarcomas of the prostate and described the tumor as having bimodal age distribution with one peak before 10 years in children and the other between 40 and 70 years. Each peak is probably associated with different etiologic factors : in chilldren, embryological and developmental abnormalities probably play a role, while in the adult, endocrinological phenomena are more likely[6].

The prostatic sarcoma mainly arises in the central zone of the prostate and the prostatic carcinoma more often occur in the peripheral zone of the prostate. However, the benign prostatic hyperplasia, contrary to carcinoma of the prostate, also involve the central zone of the prostate. Leiomyosarcoma might be difficult to differentiate from benign prostatic hyperplasia, but the latter conditions is associated with neither bulky masses nor infiltration of the surrounding organs[7]. Leiomyosarcoma should be also differentiated from the prostatic carcinoma, prostatic abscess, and other sarcomas.

Recently many diagnostic imaging modalities such as CT, US, and MR are used to evalute the prostate. CT can accurately display prostatic size, contour, and periprostatic disease, but it is limited in delineating the internal anatomy of the gland[8,9]. Transrectal US allows excellent display of the prostatic parenchyma, and the prostatic zonal anatomy[10,11]. MR image can demonstrate normal zonal distinction of the prostatic gland[12,13].

In our case, CT and suprapubic US examination showed non–specific bulky solid mass arising from prostate. Patient's age and the size of the mass may exclude the possibility of the benign prostatic hyperplasia and prostatic cancer. Further differentiation of the tumor may not be possible under ground of image findings per se.

REFERENCES

1. Longley J. Sarcoma of the Prostate and Bladder. J Urol 1955 ; 73 : 417
2. Takaaki Ohmori, Norimasa Arita, Ryo Tabei . Prostatic Leiomyosarcoma revealing cytoplasmic virus–like particles and intranuclear paracrystalline structures. Acta Pathol Jpn 1984 ; 34(3) : 631–638
3. Antonio Mottlola, Cesare Selli, Marco Carini, et al. Leiomyosarcoma of the Prostate. Eur Urol 1985 ; 11 : 131–133
4. R.L. Vereecken, J. Lauweryns, A. Drochmans and X. Van Dijck . Leiomyosarcoma of the Prostate : a case Report. Eur Urol 1977 ; 3 : 370–372
5. Carlo Bartolozzi, Cesare Selli, Marisella Olmastroni, et al. Rhabdomyosarcoma of the Prostate : MR findings. AJR 1988 ; 150 : 1333–1334
6. Christoffersen, J . Leiomyosarcoma of the Prostate. Acta chir scand, suppl 1973 ; 433 : 75–84
7. Wagih M. Shehata, Abraham A. Kerr, Harry H. Boss, et al. Leiomysarcoma of the Prostate apparantly cured by Surgery and Radiation Oncology. Biology. Physics 1982 ; 8 : 10 : 1814–1815
8. M. Golimby, P. Morules, S. Al–Askari. CAT scanning in staging of Prostatic cancer. Urology 1981 ; 18 : 305–308
9. Baker ME, Silverman PM, Korobkin M . Computed tomography of prostate and bladder rhabdomyosarcomas. JCAT 1985 ; 9 : 780–784
10. Fred Lee, Jerry MG, Richard DM, et al. Prostatic Evaluation by Transrectal Sonography : Criteria for Diagnosis of Early Carcinoma. Radiology 1986 ; 158 : 91–95
11. Mattew D. Rifkin, Gerald W. Friedland, Linda Shortliffe . Prostatic Evaluation by Transrectal Endosonography : Detection of Carcinoma. Radiology 1986 ; 158 : 85–90
12. Mirta EP, Herbert YK, Charles EP, et al. Normal Prostate and Adjacent structures : MR Imaging at 1.5 T. Radiology 1987 ; 164 : 381–385
13. Hedrig Hricak, Georges C. Dooms, john E. McNeal, et al. MR Imaging of the Prostate Gland : Normal Anatomy. AJR 1987 ; 148 : 51–58