

A case of prostate cancer with rather peculiar course showing no abnormal urine cytology

Takashi Hayata MD PhD
Kagoshima women's junior college

Beginning

One prostate cancer is reported, firstly presenting a symptom of cardiac failure. Sixty one year old male visited an internal clinic on April 15, 2008 holding his chest X-ray taken at the routine health check up showing an irregular possible pulmonary shadow that insisted pleura including lung abnormality, such as sarcoid which killed his colleague a few decades ago. This was the first step of his disease to let him get a final diagnosis shown in title above. An interesting roadmap that even medical student might call attention to it, even in cytology, will be disclosed here.

Case presentation

62 year old Japanese male

Past history

At his age of 13 (6 grade of elementary school) he got a hepatitis (infectious, type A) being admitted to the local hospital for 1 month, remembering nausea and yellowish skin discoloration and a slight abdominal fullness. Dr. palpated the liver telling him its swelling, without echoing for that day of almost 1960. At his same age, he got an appendectomy and tonsillectomy thereafter. After these occurrences he had rather a comfortable life throughout including junior, senior high school and college of medicine, also up to at least the age of 50 when he got rid of gynecology work.

Present illness

He had been suffering urinary disturbances with nocturnal pollakisuria and incontinence for a year, letting himself think a probable bladder origin. He should have considered the possibility of prostate cancer promptly as his wife said that his father got the terminal prostate cancer and beforehand operated thyroid papillary adenocarcinoma diagnosed by emeritus Professor Dr. S and treated by Dr. N at Kagoshima University.

From the beginning of 2008 he began to feel fatigue and a walk problem that he could not follow in walking his wife when they had a journey even in Tokyo during an academy meeting. This might have been a start of symptoms of above mentioned X-ray. On April 1. at the routine X-ray check up in working place, abnormal chest shadow was broke up urging himself to the nearest internist. There she thought he had chronic

cardiac failure from the finding of X-ray (elevated c/t ratio and pleural effusions) and on the next day let him consult to the regional cardiovascular center. He was ordered ECG, cardiac and abdominal echo, blood sampling and urinary one. Center's diagnosis was an old infarct or something, suggesting having a blood dialysis in neighboring clinic where he got an CT and was suspected the post renal kidney failure and being consulted to the next door urologist in the afternoon on that same day.

There he was inserted a balloon urethral catheter (French #16). Bladder volume was tremendously upto one litter to void himself. Rectal examination by digit and echoing made the urologist possible benign prostatic hypertrophy or something, although PSA was over 40 at this moment.

Voided urine cytology revealed negative and simple CT showed prostate hypertrophy in another university hospital where his son worked as a kidney Dr.

In conclusion because of the elevated creatinine (Cr) level, TURP (transurethral resection of prostate) was postponed until next January when Cr got downwards to 4 after almost 9 months. But at this point he got an elevated PSA value over 100 and abnormal KUB (kidney ureter bladder), with elevated alkaline phosphatase (ALP) upto over one thousand unit suggesting the bone metastasis, when he did not suspect, or even think of if the cancer was possible, simply because of claiming no lumbago.

After TURP at January 13, 2009 when 4 quadrant prostate biopsies revealed a positive histology, definite bone metastasis was confirmed by bone scintigraphy taken at the K. medical association hospital 1 week later. Histology of TURP showed moderate and poorly differentiated adenocarcinoma suggesting clinical staging of D2 with Gleason pattern 3.

Medical orchiectomy¹⁾ was performed and then anti-androgenic drug was begun. On May 21, the same year, there revealed no specific side effects and PSA got downwards rather in good course to 0.2 respectively. After 7 months of TURP he had been well being and had no specific difficulties so far, except for anemia (Hb10.0) suggesting a low erythropoietin level due to the impaired kidney function for the level of Cr 4.

Speaking of the PSA, there came an apparent increase at the level of 0.7 on Aug. 23, and 1.3 on Sept. 17. University hospital, where clinician told him to try on an estracyte which is an estrogen with nitrogen mustard or another anti-androgen, whereas Dr.N of clinic who did TURP on him suggested him to have a radiation therapy. After some debates between them he took the radiation therapy which was performed at K. city hospital to be irradiated at lumbbar vertebrae II and III, adding left sided ischias and partly pubic bone of the same side, respectively, 2 Gy of each in week days, planning to be done 20 times. At the mid point of 10 times irradiation, PSA showed 0.9 downwards from the beginning value of 1.75. When total of 40 Gy each was over, PSA was 0.28 as well as platelet; 120,000 and Hb; 8.7, so far.

Discussion accompanying general informations for the students of this college

This case seemed to be the post renal chronic kidney disease (CKD) due to a rather long duration, probable several years of prostate cancer existence, which had occluded his urethral orifice gradually.

Postrenal acute renal failure (ARF) would be caused by an acute obstruction that affects the normal flow

of urine outflow from both kidneys. The blockage causes pressure (this might have been excessive in present case for over years) performing to the chronic one. The high fluid pressure ultimately damages the nephrons to shut down. Postrenal ARF is seen most often in elderly men with enlarged prostate glands (cancer in this case).

Chronic loss of function causes generalised wasting (shrinkage in size of the kidney, which is a big problem for this patient). When you lose 70% of normal functions of both kidneys, most patients begin to experience symptoms of kidney failure. He himself sensed his fatigue, especially gait disturbances, as already shown above.

Determining the cause of CRF (chronic renal failure) is difficult if not impossible. Even a kidney biopsy may be inconclusive, because all forms of kidney failure eventually progress to diffuse scarring and look the same through kidney biopsy. Another most common causes for CRF are diabetes and hypertension, nevertheless he had an easily understandable post renal cause. Yes, postrenal failure accounts for 1-10% of acute renal failure cases and is more common in elderly urinary tract obstruction.

Speaking of epidemiology in USA that is particularly for this college students, histologic evidence of prostate cancer on autopsy for men over age 50 years is 30% and men over age 80 is 70%. This data is not so hard for him to swallow from his young trainee period at post graduate course of pathology of emeritus Prof. S. Repeatedly according to the USA statistical incidence of 1997, 334,500 has been tripled in last 10 years (they say the cause is the elevated level of PSA detection technique). Lifetime diagnosis occurs in 9.5% of men. Mortality is second, only to lung cancer, leading cause of cancer death in men, 41,000 deaths per year in USA which increased 24% since 1970s.

It is interesting to know that he got a negative urine cytology when you had an eye on an old paper in which 16,062 cases in toluidine blue staining, that is so rapid in routine work and seemed to be almost similar to the classical Papanicolaou staining, showed 3 probable cancer²⁾. Another interesting to note for him is that CT showed prostate enlargement only, without bone (particularly ischias involving partly pubis) transformation or sclerosing features of those, accompanying negative urine cytology.

Recommendation

It is said that a man over 50 yrs should have PSA check up. Now he recommends his son to do so even over 40 when you have prostate cancer pedigree. On the other hand it is also true that PSA negative prostate cancer³⁾ exist. Cytology check up, in whichever technique it might be, will be another point of attention in this patient as well as PSA value.

References

- 1) Rapkiewicz A. et al: Cytology of metastatic prostate cancer following orchiectomy and antiandrogen therapy. A diagnostic challenge. *Diagnostic Cytopathology*: 36(7); 499-502, 2008
- 2) Nemoto R. et al: Massive screening for urinary tract cancer with urine cytology. *J Cancer Res Clin Oncol*: 104;

155-9, 1982

- 3) Bucerius J. et al: Incidental diagnosis of a PSA negative prostate cancer by 18FDGPET/CT in a patient with hypopharyngeal cancer. Prostate Cancer Prostatic Dis: 10(3); 307-10, 2007

(Dec. 9, 2009)