Gleason 4+4 = 8 Advanced Adenocarcinoma Of Prostate In A 44 Years-old Patient: A Case Report And A Review Of The Literature.

Author(s): Dr. Anthony Venyo, Dr. Kweku Baiden-Amissah

Corresponding Author:  
Dr. Anthony Venyo,  
Urologist, Urology Department. North Manchester General Hospital, M8 5RB - United Kingdom

Submitting Author:  
Dr. Anthony Venyo,  
Urologist, Urology Department. North Manchester General Hospital, M8 5RB - United Kingdom

Article ID: WMC001391  
Article Type: Case Report  
Submitted on: 20-Dec-2010, 05:35:11 AM GMT  
Published on: 20-Dec-2010, 04:41:28 PM GMT  
Article URL: http://www.webmedcentral.com/article_view/1391  
Subject Categories: UROLOGY  
Keywords: Adenocarcinoma of prostate; under-50-years; PSA screening at 40; Hormonal Treatment; Curative treatment. AUA guidelines

How to cite the article: Venyo A, Baiden-Amissah K. Gleason 4+4 = 8 Advanced Adenocarcinoma Of Prostate In A 44 Years-old Patient: A Case Report And A Review Of The Literature. WebmedCentral UROLOGY 2010;1(12):WMC001391

Source(s) of Funding: None

Competing Interests: None
Gleason 4+4 = 8 Advanced Adenocarcinoma Of Prostate In A 44 Years-old Patient: A Case Report And A Review Of The Literature.

Abstract

Gleason 4+4 = 8 advanced adenocarcinoma of prostate in a 44 years-old patient: A case report and a review of the literature.
Anthony Delali Kodzo-Grey Venyo* and Kweku Baiden-Amissah**
Acute Pennine Hospitals NHS Trust
Departments of Urology* and Pathology**
C/o North Manchester General Hospital
Department of Urology
Delaunays Road
Manchester
M8 5RB
United Kingdom
Tel: ++44 (0)161 7202388 or ++44 (0)161 7202468
Fax: ++44 (0)161 7202228
Correspondence to:
Mr Anthony K-G Venyo MB ChB FRCS(Ed) FRCSI
FGCS LLM*
North Manchester General Hospital Department of
Urology Delaunays Road Crumpsall Manchester M8
5RB United Kingdom
Email:r.akodzogrey@yahoo.co.uk

Introduction

Adenocarcinoma of prostate is rare in the under 50-years-age group. There is the need to study and understand the biological behaviour of adenocarcinoma of prostate in the less than 50-years age group in order to outline a diagnostic and management plan for patients in this age group. There is also the need to confirm the belief that prostate cancer in young men may demonstrate aggressive biological behaviour and that this form of disease responds poorly to radiation or hormonal therapy and is often too advanced for surgery. We report a case of adenocarcinoma of prostate which was diagnosed in an under-50-years-old man. We have also reviewed the literature on carcinoma of prostate in the under 50-years-old.

Case Report

A 44-years-old man was referred in 2006 with a six month history of lower urinary tract symptoms and raised serum PSA. He had been having diurnal ciprofloxacin for urinary tract infection. His serum PSA had increased from 20 to 65.2 ng/ml. Rectal-examination revealed bilateral irregular prostate gland. Histology of biopsy specimens from the prostate and a nodular area in the trigone of his bladder was consistent with Gleason 8 adenocarcinoma in all specimens. CT scan confirmed nodal disease. The advanced nature of the tumour precluded curative treatment and the patient had been on hormonal treatment for 42 months with evidence of further rise in his serum PSA.

“Conclusion”

Availability of the new AUA guidelines prior to 2006 would most likely have enabled early detection, of this cancer at a lower stage to enable curative treatment to be provided.

Key Words: Adenocarcinoma of prostate; under-50-years; PSA screening at 40; Hormonal Treatment; Curative treatment. AUA guidelines
frequency and nocturia and a subjective feeling of incomplete emptying of the bladder. He had been taking alfuzosin 10 mg orally daily and was treated for Urinary tract infection (UTI) / prostatitis with ciprofloxacin 500 mg orally twice a day for six weeks. Despite treatment his serum PSA which was initially about 20 mg/ml had risen to 36 and 62.2 over a period of three months. He was generally fit and well and had no co-morbidities.

His general and systematic examinations were unremarkable. Digital rectal examination revealed a bilateral irregular prostate.

His initial investigations including full blood count, serum urea and electrolytes, blood glucose and coagulation screen as well as liver function tests were normal.

He had digital rectal examination in theatre which revealed bilateral irregular lateral lobes of prostate which felt hard giving an impression of a possible extensive T2C prostatic tumour. He underwent cystoscopy and trans-rectal ultrasound scan of prostate and biopsies on the eve of his 45th birthday and the histology was reported 4 days later. The cystoscopy revealed enlarged lateral lobes of the prostate which looked congested and occlusive. In addition there was a nodular area in the trigone of the bladder but the rest of the bladder looked normal.

Biopsies were taken from the nodular area of the trigone and the sites were diathermized. Trans-rectal ultrasound scan showed bilateral hypo-echoic areas with a prostate volume of about 75 mls. The seminal vesicles looked alright. Ten biopsies were taken (five from each lobe). Histological examination of the specimens revealed the following (see Illustrations 1 -4):

-Sections of fragments from the bladder mucosa showed cavity bordered by transitional epithelium with an underlying stroma which was extensively infiltrated by a poorly differentiated adenocarcinoma. There was no evidence of lympho-vascular invasion (see Illustrations 1 and 2).

-Sections from both prostate biopsies revealed needle cores of the prostatic tissue extensively infiltrated by a moderate to poorly differentiated adenocarcinoma of prostate gleason 4+4=8 with up to 70% of the biopsy tissue consisting of tumour (see illustrations 3 & 4).

-All the biopsies from the bladder trigonal nodular area and both lobes of the prostate were Gleason 4+4=8. At that stage he was considered to have an advanced tumour.

The case was discussed at a Multi-Disciplinary Team meeting and it was felt at that stage that he was suitable for Hormonal treatment plus or minus radiotherapy and he was referred to the Regional Oncology centre and a CT scan was requested. He was also commenced on Zoladex injections (at that stage his serum PSA was 173 nm / ml).

He had a CT scan which revealed nodal disease. He also had an isotope bone scan which did not reveal any bony metastasis.

The oncologist was of the opinion that it was most likely that he had micro-metastases therefore radiotherapy would not be an appropriate treatment modality for him and that his options of management included: Hormonal Treatment alone or Hormonal treatment plus Tarepeze trial.

The patient decided not to have chemotherapy and to have Hormonal treatment only because he knew patients who had undergone chemotherapy and were ill. He was initially be followed up by the urology team and the oncologists. At his one year follow-up his lower urinary tract symptoms had improved. At that stage further CT scan of abdomen and pelvis was requested and he was offered the possibility of a STAMPEDE or continuation of the hormonal treatment alone. He refused to have any chemotherapy and failed to turn up for a CT scan as well as refused to have further urology and oncology review. He remained under his General Practitioner and continued to have three monthly Zoladex injections.

Forty-six months following his initial presentation he was referred to the hospital as emergency with a history of supra-pubic and right sided lower abdominal pain. He was asymptomatic otherwise. His general examination was unremarkable but he was found to be tender in the supra-pubic region and in the right iliac fossa. His investigations revealed a normal full blood count and mild impairment of his renal function. His serum creatinine was raised (132; 148 and 142) on consecutive days and his serum urea levels were 6.4; 8.4; and 7). His serum PSA which had stabilised at 60 nm /ml under the care of his general practitioner had risen to 120 nm / ml; Ultrasound scan of his abdomen revealed a 4.5 cm mass arising from the pelvis originating from the prostate extending into the trigone of the bladder and moderate bilateral hydronephrosis. He was put on Casodex (Bicalutamide) 50 mg orally daily and he was subsequently discharged to be followed up in the clinic after he had had a further ultrasound scan and a further staging CT scan.

**Discussion**

To our knowledge, up to September 2009, the literature on prostate cancer contains < 20 reported cases of prostate cancer among men ≤ 40- years of age, with an incidence of 0.8% - 1.1%<sup>1-5</sup>. Reyes and
Slutky\textsuperscript{4} reviewed the oncology records at two institutions for a 27-year period which showed that prostate adenocarcinoma among men this age comprised just 0.04\% to 0.1\% of all cases. They observed that in this young age group, the tumour appeared to be particularly aggressive. They also reported two cases of moderately differentiated prostate adenocarcinoma among men aged 35 and 40 years that initially manifested as lymph node metastases of an unknown origin. The diagnosis was made by fine-needle aspiration cytology, supported by positive prostate-specific antigen (PSA) immuno-staining and in one case electron microscopy, and subsequently confirmed by elevated serum PSA levels and prostate biopsies.

Dorff and Tucker\textsuperscript{7} commented that the true incidence of prostate cancer among men aged 40 years or younger is unknown, since routine PSA screening is not advised in this age group. They also commented that the influence of age on the aggressiveness of prostate cancer is not established and that a recent review of the Surveillance, Epidemiology, and End Results (SEER) database described 1,673 cases of prostate cancer in men aged 35 to 44 years of 453,195 total cases\textsuperscript{6}. They additionally commented that in the SEER study overall, a larger proportion of these men had low-grade tumours, and their 10-year cancer specific survival rate was equivalent to that of men in whom the diagnosis was made at an older age, only the subset with high-grade disease fared worse than older men with high grade disease\textsuperscript{6}. They also commented that Nixon and associates\textsuperscript{5} observed that this pattern contrasts with that of breast cancer, in which young age at diagnosis portends a poorer prognosis.

Pokala and Mani Menon, reported a study done on the National SEER database which showed that radical prostatectomy improves the 5-, 10-, 15- and 20-year survival for younger patients with prostate cancer when compared with other standard treatments such as radiotherapy or watchful waiting\textsuperscript{10}. Pokala and Menon\textsuperscript{10} carried out this study to determine which treatment option offers the best chance for long-term survival for younger prostate cancer patients. On a subset analysis the outcome was significantly better after radical prostatectomy in patients with moderately and poorly differentiated prostate cancer. The results of this study which was presented in Chicago at the 2009 American Urological Association’s annual meeting showed that overall, the 5-year, 10-year, 15-year and 20-year survival and cancer specific survival was significantly increased in patients who were less than 50 years of age with moderately and poorly differentiated cancers in the study group.

Prostate cancer is the most common cancer in men in the UK\textsuperscript{11}. Prostate cancer accounts for nearly a quarter (24\%) of all new male cancer diagnoses. Although there has been a huge rise in prostate cancer incidence over the last 20 years, this has not been reflected in the mortality rates. Much of the increase in incidence is due to the incidental discovery of prostate cancer following transurethral resection of prostate and, more recently due to the use of PSA screening testing. In 2006, there were 35,515 new cases of prostate cancer diagnosed in the UK, that means around 97 men every day or one man every 15 minutes is found to have prostate cancer. The life time risk of being diagnosed with prostate cancer is 1 in 10 for men in the UK. This was calculated in February 2009 using incidence and mortality data for 2001 to 2005\textsuperscript{11}.

Prostate cancer risk is strongly related to age: very few cases (less than 100 cases) of prostate cancer were registered in the United Kingdom in 2006 in men under 50 years of age; all these men were aged between 45 years and fifty years and no one was aged below 45 years (see Illustration 5); (this patient’s histology report was received 4 days after his 45\textsuperscript{th} birthday and recorded as carcinoma of prostate in a 45-years-old man); meaning prostate cancer is extremely rare in the under 45-year olds. Three-quarters of cases occur in men over 65 years. The largest number of cases is diagnosed in those aged 70 to 74 years (see illustration 5)\textsuperscript{12, 13, 14, 15}.

Prostate cancer incidence rates increase steeply with age and the highest rates occur in the oldest age groups. For men aged 55 to 59 years the incidence rate per 100,000 men is 144; ten years later at age 65 to 69 years, the rate more than triples to 500 per 100,000 and by 85 + years the rate is more than five times higher at 789 per 100,000.

From post-mortem data, it has been estimated that about half of all men in their fifties have histological evidence of cancer in the prostate, which rises to 80\% by the age 80, but only 1 in 26 men (3.8\%) will die from this disease (16, 17). This means that men are more likely to die with prostate cancer than from it. This is an important fact when considering population screening of asymptomatic men\textsuperscript{16, 17}. Wymenga and Mensink\textsuperscript{20} reported three men aged 44, 47 and 48 years in whom carcinoma of prostate was diagnosed after a long delay, more than eight months after the onset of symptoms. All were treated with goserelin and flutamide and radiotherapy on the emerging metastases (two patients). Two patients died the third one, who had received antibiotic treatment for three
months because at first prostatitis was suspected was still in remission at the last follow-up. Wymenga and Mensink suggested that prostate cancer in young men may demonstrate aggressive behaviour and this form of disease responds poorly to radiation or hormonal therapy and is often already too advanced for surgery. The symptoms at presentation of prostate cancer in young men are quite similar to those in prostate cancer patients beyond the fifth decade. When carcinoma grows beyond the margins of the prostate the prognosis is poor. In all men with micturition problems rectal palpation of the prostate should be carried out as a routine. Aprikan and associates retrospectively examined cases of prostate adenocarcinoma in patients younger than 50 years of age to determine the natural history and prognosis of this malignancy in the younger population. They reviewed the medical records of 151 patients with particular attention to age and year at diagnosis, race, ‘symptoms’ at presentation, family history of prostate cancer, histological grade, clinical and pathologic stage, treatment modality, and clinical outcome. Univariate analyses demonstrated a significant correlation between higher disease stage (P=0.0001), higher tumour grade (P=0.01) with shorter disease-specific survival. Nevertheless, multivariate analysis revealed that only stage and grade were significant predictors for poor prognosis after controlling other variables. With a one-unit increase in stage or grade, the risk of death from disease increases 2.2 or 1.9 times respectively. They concluded that the data suggested that patients younger than 50 years with prostate cancer present with similar symptomatology, histological grade, and disease stage as the older population. Patients with disease confined to the prostate have relatively good disease-specific survival but remain at risk for death even 15 years after diagnosis. When carcinoma escapes the confines of the prostate, the prognosis is uniformly poor. Ruska and co-workers investigated the non documented belief that prostate cancer in men who are younger than 40 years behave particularly aggressively. They studied 87 men younger than 40 years who underwent prostate needle biopsy and were from three populations. Ruska and associates concluded that:

- Young men who are candidates for radical prostatectomy have potentially curative disease, particularly if PSA at the time of diagnosis is less than 10 nmL/mL.

In this case the patient was symptomatic for almost six months before he had biopsies of his prostate and the nodular area in the trigone of the bladder as well as CT scan which revealed a high grade tumour and nodal disease. It was therefore too late for the patient to be considered for curative treatment. It would appear that if one waits for patients to develop symptoms before they are investigated for prostate cancer most of the cancers would be advanced and the window of opportunity to provide curative treatment would be gone. Perhaps as recommended by the AUA if this patient had had a baseline serum PSA checked together with a digital rectal examination at the age of 40 his prostate cancer would have been suspected and confirmed early at a time that the tumour would have been localized which would have made it possible for the patient to be considered for curative treatment.

Conclusions

We would conclude that:

* There is evidence that in the under-50-years old men with moderately differentiated and poorly differentiated adenocarcinoma of prostate the long-term outcome following radical prostatectomy is significantly better than other treatment modalities like radiotherapy and watchful waiting.
* This patient had lower urinary tract symptoms for six months at the age of 44 years and at the time of diagnosis the prostate cancer was advanced and of high grade that precluded curative treatment.
* Perhaps if the new revised AUA guideline on PSA screening for prostate cancer was available before 2006 the patient’s prostate cancer would have been detected before he became symptomatic and perhaps the tumour would have been localised to enable curative treatment to be provided.
* We endorse the adoption of the new AUA guideline on screening for prostate cancer.

References

13. Welsh Cancer Intelligence and Surveillance unit 2007
14. ISD Online Information and Statistics, Division, NHS Scotland 2007
22. Prostate-Specific Antigen Best Practice Statement: 2009 Update 1-80 can be found at: www.auanet.org/content/guidelines-and-quality-care//psa09.pdf
Illustrations

Illustration 1

Illustration 1
Haematoxylin and Eosin stain showing Gleason 4+4 =8 adenocarcinoma in biopsy specimen from trigone of bladder

Illustration 2

Illustration 2
Haematoxylin and Eosin stain showing Gleason 4+4 =8 adenocarcinoma in trigone biopsy
Illustration 3

Haematoxylin and Eosin stain showing Gleason 4+4 =8 adenocarcinoma in right lobe of prostate

Illustration 4

Haematoxylin and Eosin stain showing Gleason 4+4 =8 adenocarcinoma in left lobe of prostate
Illustration 5

Illustration 5: Number of new cases and age specific incidence rates of prostate cancer in the United Kingdom in 2006 [11]
Disclaimer

This article has been downloaded from WebmedCentral. With our unique author driven post publication peer review, contents posted on this web portal do not undergo any prepublication peer or editorial review. It is completely the responsibility of the authors to ensure not only scientific and ethical standards of the manuscript but also its grammatical accuracy. Authors must ensure that they obtain all the necessary permissions before submitting any information that requires obtaining a consent or approval from a third party. Authors should also ensure not to submit any information which they do not have the copyright of or of which they have transferred the copyrights to a third party.

Contents on WebmedCentral are purely for biomedical researchers and scientists. They are not meant to cater to the needs of an individual patient. The web portal or any content(s) therein is neither designed to support, nor replace, the relationship that exists between a patient/site visitor and his/her physician. Your use of the WebmedCentral site and its contents is entirely at your own risk. We do not take any responsibility for any harm that you may suffer or inflict on a third person by following the contents of this website.