A Histopathologic Survey Of Prostate Disease In The Sultanate Of Oman

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Abstract

The aim of this retrospective study is to determine the pattern of prostate diseases in the Sultanate of Oman by analyzing prostate biopsies received at the Department of Pathology, The Royal Hospital, Muscat, Sultanate of Oman during a 5 year period from July 1999 to June 2004. The results are compared with data from the Middle East and from the West.

During the 5 year period of this study 1163 patients had prostate biopsies and of these 10.9% (n= 127) were malignant, 0.6% (n=7) showed high grade prostate intraepithelial neoplasia and the remaining 88.5% (n=1029) were nodular hyperplasia.

The majority (125 cases) of the malignancies were carcinomas, with two non Hodgkin lymphomas and most of the carcinomas (65.6%) were poorly differentiated with Gleason score 7 to 10.

The highest incidence of malignancies and hyperplasia occurred between 61 and 70 years of age.

INTRODUCTION

In the Sultanate of Oman cancer of the prostate is the fourth commonest cancer among Omani males with an incidence of 29 in 2003, according to a publication of the Ministry of Health ([1]).

There has not been any study done in Oman with a view to compare the statistics with other areas especially the Middle East; hence we have attempted to survey the pattern of prostate disease based on an analysis of histopathological specimens, with a review of literature.

MATERIALS AND METHODS

The Royal Hospital is a tertiary care teaching hospital of the Ministry of Health and as it receives specimens from all over the country, the data pertains to the entire population.

Prostate specimens from 1163 Omani patients were received in the Department of Pathology between July 1st 1999 and June 30th 2004. These include transurethral prostate resections, needle biopsies and suprapubic prostatectomy specimens. All lesions were classified as benign or malignant with the latter further categorized into the type of malignancy. As all clinically suspected prostatitis are not biopsied this entity is not included in the study. Carcinomas were graded and scored according to the Gleason system. The age distribution was also noted. The literature was searched for comparative data.

RESULTS

A total of 1163 patients with prostate biopsies during the 5 year period from July 1st 1999 to June 30th 2004 were analyzed. Of these 1029 (88.5%) were benign and showed hyperplasia.

Malignant lesions were seen in 127(10%) patients with 125 adenocarcinomas and 2 cases of non Hodgkin lymphoma of diffuse large B cell type. Seven biopsies (0.6%) revealed high grade prostate intraepithelial neoplasia.

The age distribution for benign and malignant prostate lesions is shown in Table 1.

Figure 1

Table 1: Age distribution of patients with prostate lesions on biopsy

AGE GROUP	NO OF PATIENTS			
	HYPERPLASIA	*CARCINOMA*	*PIN*	*N H L*
21 – 30				1
31 - 40	8			
41 - 50	91	1		
51 - 60	302	34	1	
61 – 70	380	65	3	
71 - 80	197	18	3	1
81 - 90	45	8		
91 - 99	6	1		

The highest incidence of both carcinoma and hyperplasia was in the 6th and 7th decades and most of the patients were aged between 61 and 70 years. The youngest patient with hyperplasia was 33 and the oldest 95 years; the youngest patient with carcinoma was 45 years and oldest 96. The patients with Non Hodgkin lymphoma were 28 and 80 years old respectively.

The ages of patients with high grade PIN ranged from 51 to 80 years.

GRADING

Eleven of the 125 carcinomas were well differentiated (Gleason's Score 2, 3 and 4), 31 were moderately differentiated (Gleason's score 5 and 6) and 82 were poorly differentiated (Gleason's score 7 to 10). One was a signet ring cell carcinoma of prostatic origin.

DISCUSSION

According to the World Cancer Report 2003, prostate cancer is the 3rd most common cancer in men in the world with 543,000 new cases each year.(2)

Table 2 shows the age standardized incidence rates in some countries. In the Sultanate of Oman the age standardized incidence was 29 in 2003.

According to a 1998 cancer incidence report of the Gulf Cooperation Council Countries published by the Gulf Center for Cancer Registration, the highest age standardized incidence rate of prostate cancer was in Oman and Kuwait 10.6 / 100,000, followed by Bahrain 10.3 / 100,000, Qatar 8.6 / 100,000, United Arab Emirates 7.1 / 100,000 and Saudi Arabia 4.2 / 100,000.(4)

Figure 2

Table 2: Age standardized incidence rates

	INCIDENCE	STANDARD ERROR
US SEER Black	137.0	1.64
US SEER White	108.2	3.48
Canada	64.7	0.27
England and Wales	28.0	0.15
Kuwait	6.5	1.13
Hong Kong	7.9	0.24
Bombay, India	7.9	0.30
China	2.3	0.10

In recent times incidence rates of prostate carcinoma have been influenced by the diagnosis of latent cancers; hence where screening examinations are prevalent recorded incidence may be very high. In the USA, for example, introduction of prostate specific antigen testing for screening has led to an enormous increase in the diagnosis of prostate cancer reaching 104 cases per 100,000 population. Similar changes have been observed in Australia, Finland and Sweden. However incidence rates and to a lesser extent mortality rates are rising in many other countries where a possible impact of screening may be excluded.(2)

In our study of prostate biopsies cancers were seen in 10.9% similar to the findings of a study of 535 patients from Saudi Arabia which showed 10% carcinomas. (5).

The incidence of prostate cancer increases with aging with peaks somewhere in the seventh decade; about three quarters of cases worldwide occur in men aged 65 or above (2). In our study the maximum number of prostate cancers were seen between 61 and 70 years of age similar to a study from Saudi Arabia which showed a mean age of 66.81 (5)

Most of our patients had high Gleason's score at presentation with 65.6% (n=82) having scores between 7 and 10 (poorly differentiated) and 24.8 % (n=31) with scores 5 or 6 (moderately differentiated). Only 0.08 % (n=11) had well differentiated carcinomas with Gleason's score between 2 and 4.

This is indeed a problem which has to be addressed probably by instituting screening protocols as an analysis of 451 patients revealed that death from prostate cancer increases with Gleason score (6).

Nodular hyperplasia is an extremely common disorder in men over 50 years of age (7). The clinical incidence of this disease is only 8% during the fourth decade but reaches 50% in the fifth decade and 75% in the 8th decade (8).

In our study hyperplasia was seen in 88.5% of cases. An analysis of prostate disease in Saudi Arabia showed 90% of

535 prostatic specimens to be benign lesions with 82.2% of these showing hyperplasia ($_5$)

In our study the age of patients of prostate hyperplasia ranged from 33 to 95 with a maximum number in the 7th decade. The mean age of presentation was 63 years in a series of 567 cases from Kuwait ($_9$) and 64.3 in a study from Saudi Arabia ($_5$).

CONCLUSIONS

Analysis of our study and review of literature reveals that the incidence of prostate cancer in the Sultanate of Oman is lower than in the West. However a cause of for concern is that the majority of patients present with higher grade of tumors. Screening protocols and awareness programs need to be instituted and further studies need to be carried out to detect any changes in incidence or mortality rates of prostate cancer in Oman.

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