

## INCIDENTAL ADENOCARCINOMA OF THE PROSTATE: FREQUENCY RATE AT A TERTIARY CARE HOSPITAL

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Incidental adenocarcinoma of the prostate is an early stage cancer that is not detected by digital rectal examination (DRE). The patient presents with symptoms and signs of prostatism and undergoes prostatectomy for this benign disease to relieve his bladder neck obstruction.<sup>1</sup> The case is termed as incidental cancer when the histopathological examination reveals focus or foci of cancer within the resected tissues. This cancer may remain latent and never progress, or may progress, metastasize and kill the host, depending upon its initial size and grade.<sup>1</sup> According to the Jewett-Whitmore American clinical staging system, incidental prostatic cancer is represented as stage A.<sup>1</sup> Stage A1 is a focal disease found in less than 5% of the resected tissues and A2 is a diffuse one found in more than 5% of the total specimen. In the 1992 TNM staging system, the counter stages were given as T1a and T1b.<sup>1-9</sup> Stage T1c represents incidental adenocarcinoma picked up by random biopsy of a normally palpated prostate gland because of elevated serum prostate-specific antigen (PSA).<sup>1-9</sup>

The purpose of this study was to add more information on prostate cancer in Saudi Arabia. We report here our own experience with cases of incidental adenocarcinoma of the prostate at KAUH in Jeddah, from December 1985 until June 1997, and review several other series in Saudi Arabia.

### Patients and Methods

The hospital medical records of all patients who had undergone prostatectomy for BPH between December 1985 and June 1997 were reviewed. Those with available and adequately reported histopathological examination of the resected specimen were included in this study. The age of the patients, total resected gland weight, relative cancer volume (less than 5% was considered A1 and more than 5% as A2) and tumor grade (whether degree of

differentiation or Gleason sum), progression and survival were extracted from the files and tabulated.

### Results

The histopathology reports on prostatic tissues obtained from 207 patients who presented with BPH were available. Incidental cancer (stages A1 and A2) was found in 15 specimens (7.2%). Table 1 shows the results of our study. Patients with focal (A1) incidental adenocarcinoma of the prostate constituted 73% of the total number of cancer cases, while those with diffuse (A2) disease constituted 27%. The overall frequency rate of incidental adenocarcinoma of the prostate in patients presenting with BPH in Saudi Arabia is 3.5%. Table 2 summarizes the numbers and percentages seen in four series of prostate cancer patients in Saudi Arabia.

### Discussion

The term prostate cancer is a combination of three entities: clinical prostate cancer, which may become symptomatic and whose diagnosis is made clinically; occult prostate cancer, in which the primary lesion remains small or hidden, but which produces clinically overt metastases; and latent prostate cancer, which is clinically unrecognizable through signs and symptoms and is generally an incidental finding at prostatectomy for benign prostatic hypertrophy (BPH), or which is screen-detected in asymptomatic individuals.<sup>10</sup> Therefore, the rate of prostate cancer discovery depends also on factors such as a high rate of performing prostatectomies for benign disease and the conduction of population-based screening programs. This is especially true when a sensitive tool such as the tumor marker serum prostate-specific antigen (PSA) is used.<sup>11-13</sup> With an increased population and life expectancy, and advents in the medical tools required for the early detection of diseases, it is anticipated that more cases of prostate cancer will be reported.<sup>1,2</sup> The two methods of discovering incidental carcinoma of the prostate are prostatectomy (mainly transurethral resection of the prostate, or TURP), performed for benign disease, and PSA-based screening. Incidental cancer of substages

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TABLE 1. Results of the study of this series.

Age	Resected glands wt/g	Tumor grade	Stage	Progression/ survival
80	29	Well differentiated	A1	Progressed to D2, treated with LH-RH analogue, alive/5 years
75	13	Well differentiated	A1	Stable
54	19	Well differentiated	A1	Stable
55	36	Well differentiated	A1	Stable
65	29	Well differentiated	A1	Stable
65	55	Well differentiated	A1	Stable
70	105	Well differentiated	A1	Stable
68	20	Well differentiated	A1	Stable
55	36.5	Gleason grade 3	A1	Stable
66	55	Gleason 1+3=4	A1	Stable
60	21	Well differentiated	A1	Stable
85	14	Poorly differentiated	A2	Died of other causes
63	54	Gleason 4+3=7	A2	Progressed to D2, treated with LH-RH analogue, alive/4 years
64	35	Poorly differentiated	A2	Progressed to D2, interrupted courses of LH-RH analogue, alive/5 years
78	9	Gleason 5+2=7	A2	Progressed to D2, treated with bilateral orchiectomy, alive/2 years

T1a and T1b is discovered by prostatectomy, while substage T1c is discovered by PSA-based screening in asymptomatic individuals with normal prostate on DRE. In a study of 179 patients presenting with BPH, Taha<sup>14</sup> at King Faisal University in the Eastern region reported only two cases of incidental cancer histopathologically in 177 prostatectomy specimens. This represents a cancer frequency rate of 1.1% in the patients of that series. Both patients were older than 80 years. The patients studied were seen over a 10-year period.

In a review of 253 patients presenting with BPH at Asir Central Hospital (ACH) in the Southern region, Ghali et al. reported incidental adenocarcinoma of the prostate in 1.7% of 248 prostatectomy specimens obtained.<sup>15</sup> The overall cancer rate in this group of BPH patients seen over a seven-year period was 6.8% (n=17), but 13 patients (5.1%) were clinically suspected to have cancer preoperatively.<sup>15</sup> Therefore, the true number of patients with incidental prostatic cancer, i.e., unsuspected clinically by DRE preoperatively, was 17-13=4. The number of specimens obtained was 248. Incidental cancer rate in this series would be 4/248 or 1.6%.

In another study presented to the Ninth Saudi Urological Conference in November 1995, Al-Jasser et al.<sup>8</sup>

from the Security Forces Hospital in Riyadh reported the results of screening of 300 patients with BPH for cancer during the period between July 1993 and July 1995.<sup>8</sup> Their methods of cancer detection were DRE, PSA and the occasional transabdominal ultrasonographic examination of the prostate. Perineal core needle biopsy was done for suspicious cases. Cancer was detected in 12 (4%) specimens.<sup>8</sup> All patients were older than 70 years of age.<sup>9</sup>

The exact or approximate numbers of TURPs performed in Saudi Arabia per year is not known, but this procedure is efficiently used in the Western region. PSA is still not widely employed in this region so far.<sup>16</sup> Data from other regions is awaited. The possible reasons for the difference between our high rate (7.2%) and the rates reported from other areas of Saudi Arabia (1.1%, 1.7% and 4%, respectively) are not fully clear, but this is usually due to difference in the sample size or the method utilized for pathological processing of the resected, presumably benign prostatic tissues.

The diagnosis of incidental prostatic carcinoma depends upon the histopathological detection of focus or foci of cancer in the resected or biopsied prostatic tissues of patients with normal ( unsuspected for cancer on palpation) glands on DRE.<sup>1-4</sup> Once cancer is diagnosed, a complete staging procedure should be carried out. Currently, the staging procedure involves, in addition to DRE and serum, PSA measurement, transrectal ultrasonographic (TRUS) examination of the prostate, MRI or CT scan of the pelvis looking for pelvic lymph node involvement and bone scan.<sup>1-4</sup> Pelvic lymphadenectomy by open laparotomy or laparoscopically is the most accurate method to detect metastasis to pelvic lymph nodes.<sup>1-4</sup> This definitive surgical staging procedure precedes a planned curative measure, either radical prostatectomy or radical external beam radiotherapy. Both are indicated for localized prostate cancer.

The treatment depends upon the initial volume of the cancer tissue detected relative to the resected specimen and the grade of the tumor. Expectant observation suffices following the initial open prostatectomy or TURP for T1a tumors that are less than 5% volume of the total specimen, provided that the tumor is well-differentiated.<sup>17,18</sup> Active treatment may be indicated for T1b and T1c tumors if the patient has at least a 10-year life expectancy and is of good medical fitness.<sup>2</sup>

Twenty-five years ago, Hanash and associates reported 50 patients with stage A prostatic carcinoma.<sup>19</sup> Following TURP, the 15-year survival of 39 patients (78%) with well-differentiated cancers equalled that of the general population of the same age. They did not state how many of the patients had focal (T1a), and how many had diffuse (T1b) cancer.<sup>19</sup> Compared to the numbers of prostate cancer patients studied and reported in the Western literature in recent years, the numbers of patients in the

TABLE 2. *Compilation of the results of four studies of prostate cancer in Saudi Arabia.*

Author/year published	Number of incidental cancer cases/ total number of prostates evaluated	Percentage
Taha, 1993	2/177	1.1%
Ghali et al, 1996	4/248	1.6%
Al-Jasser et al, 1995	12/300	4.0%
Mosli, current	15/207	7.2%
Total	33/932	3.5%

older series were undoubtedly small.<sup>19,20</sup> The numbers of patients currently reported to our local literature are also small, but it may not be difficult to anticipate a tremendous escalation in 25 years' time.

Jewett reviewed and added to the prostate cancer staging system, dividing stage A into focal and diffuse.<sup>20</sup> PSA was not known at the time. The trend towards adapting the TNM substage T1c to describe an early stage prostate cancer discovered by PSA screening is recent. When PSA is elevated in an asymptomatic patient with normally palpable prostate, random multiple TRUS-guided biopsies are indicated.<sup>1-4</sup> If the gland proves cancerous, staging and treatment options are offered. The rate of performing TURPs for BPH is now declining due to the availability of effective medications, other nonsurgical and minimally invasive surgical procedures. Therefore, incidental adenocarcinoma of the prostate yielded by PSA screening will be the most commonly seen.<sup>1-4</sup> There is a parallel increase in the rate of radical prostatectomies performed in the USA with the rate of PSA-TRUS-discovered prostatic cancer.<sup>2</sup> Our data of the local frequency rates of incidental prostate cancer discovered by TURPs may not be seen within another 10 years, as it will be replaced by those discovered via elevated PSA and TRUS-guided biopsies.

In 1980, a review of the topic of incidental prostate cancer concluded that this disease is "common, but poorly understood."<sup>21</sup> Ten years later in 1990, the options for management were addressed, taking into consideration the two new medical tools developed within the decade, PSA and TRUS, and the newly accumulated information over that period of time.<sup>22</sup> During that decade, TURPs performed for BPH reached exceptionally high rates in North America.<sup>12</sup> Incidental cancer was found in 10% of patients undergoing a transurethral prostatectomy for bladder outlet obstruction symptoms from presumed benign prostatic hyperplasia.<sup>22</sup> The options for the treatment of stage A prostatic cancer remained either observation only for focal well-differentiated disease, or an attempt at cure by either radical prostatectomy or external beam radiotherapy for the diffuse or poorly differentiated cancer.<sup>22</sup> Well-differentiated focal incidental cancer tends

to remain stable without progression, and with excellent prognosis without further intervention other than the initial prostatectomy. Poorly differentiated and diffuse disease usually progresses into an advanced stage disease.<sup>1-4,21,22</sup> Our data shown in Table 1 are in complete agreement with those statements.

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