

# Rectal examination in the detection of prostatic cancer

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## Summary

Since the aetiology of prostatic cancer is unknown, and therapy for metastatic disease non-curative, a decrease in the mortality rate from this condition can only be achieved by early diagnosis and effective treatment of the primary tumour. For diagnosis of localised cancer no practical alternative exists to rectal palpation. Of 629 cases of prostatic cancer seen at Tygerberg Hospital, the disease had metastasised in 29% of white and 58% of coloured patients at initial diagnosis. Prostatism or urinary retention was the presenting complaint in 74,7% of patients.

The letters of referral of 97 patients were examined to determine whether prostatic cancer had been diagnosed by the primary care physician before referral. Rectal examination by the referring physician was recorded or implied in 64,9% of patients, and in those patients who underwent rectal examination before referral prostatic cancer was diagnosed in 54%. These findings imply that the opportunity for early diagnosis of prostatic cancer may be missed in many patients in whom rectal examination by the primary physician is indicated.

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Malignant disease of the prostate gland is an important cause of cancer death in the RSA. In a recent article in this journal,<sup>1</sup> mortality rates of approximately 15/100 000 were recorded for both whites and coloureds, with slightly lower rates among Indians and blacks.<sup>1,2</sup> Of significance in this regard is that these surveys were limited to men of less than 74 years of age. The highest prostatic cancer mortality is seen in the 8th decade and shows a rising tendency after the age of 60 years.

Since very little is known of the aetiology of prostatic cancer, measures to decrease the incidence are not available. Thus to decrease the substantial mortality rate, early diagnosis is required at a stage when the disease is potentially curable by surgery or radical radiotherapy. Unfortunately, no alternative to rectal examination has been reported to be of value in population screening for early-stage prostatic cancer. The only way the percentage of curable cancers can be increased is by a public awareness of the importance of routine rectal examination in men over 40 years of age<sup>3</sup> and the co-operation of capable primary care physicians.

The symptomatology and rectal findings at initial presentation in patients with prostatic cancer were investigated.

## Patients and methods

Data were gathered prospectively from patients seen at a combined urology-oncology clinic and retrospectively from the hospital records of patients seen at the Department of Urology, Tygerberg Hospital, and stored and analysed on computer. Between January 1977 and October 1986 629 patients with biopsy-proven prostatic adenocarcinoma were staged by the TNM system according to the guidelines laid down by the Union Internationale Contra Cancer<sup>4</sup> (rectal examination (T stage), colorimetric serum prostatic acid phosphatase, radio-isotopic bone scanning (M stage) and, recently, by staging pelvic lymphadenectomy (N stage)). Patients in whom pelvic lymphadenectomy was not done were staged as Nx, but regarded as having cancer which was not metastasising. Patients with TO disease were excluded from the study.

In 174 patients symptoms at presentation had been recorded on computer. For ease of presentation, these have been divided into six groups: (i) prostatism and urinary tract infection (e.g. hesitancy, poor stream, frequency, urgency, dysuria); (ii) urinary retention (acute or chronic); (iii) macroscopic haematuria; (iv) skeletal pain; (v) other (including anaemia, weight loss, loss of appetite, fever, lymphadenopathy, abdominal mass, symptoms due to rectal insufficiency, paraplegia); and (vi) incidental.

The original letters of referral from the primary care physicians (usually general practitioners) were available in 97 patients. From these letters it was recorded whether a rectal examination had been done before referral and, if so, whether prostatic cancer had been diagnosed. If the rectal findings were not noted, but a specific diagnosis (possible only after rectal examination) was recorded, e.g. benign prostatic hyperplasia or prostatic cancer, it was assumed that rectal examination had been carried out. If the rectal findings described were typical of prostatic cancer (e.g. hard, nodular, loss of normal boundaries), it was assumed that a diagnosis of prostatic cancer was implied, although not specifically mentioned in the letter.

## Results

Of 629 patients, 122 (19,4%) had TO-MO, 70 (11,1%) T1-2MO, 187 (29,7%) T3-4MO and 250 (39,7%) T1-4M1 (metastatic) prostatic cancer; 393 patients (62,5%) were white, 221 (35,1%) coloured, 13 (2,0%) black and 2 (0,3%) Asiatic. Of the white patients, 114 (29%) presented with metastatic cancer and of the coloured patients, 125 (58%).

The symptoms at presentation, by stage, of the 174 patients recorded on computer are listed in Table I. In 74,7% of patients the presenting symptom was either prostatism or urinary retention and thus due to the enlarged, obstructing prostate. Seven patients with T3-4 disease presented with skeletal pain, but the pain was subsequently judged not to be due to metastatic disease by bone scan and other tests of metastatic cancer. Prostatic cancer was an incidental finding in only 3% of all patients.

A rectal examination was mentioned or implied in 64,9% of all referral letters (Table II). The race of the patient did not influence the decision whether rectal examination was indicated and patients with metastatic disease were as likely to have a rectal examination as patients with non-metastatic disease. In patients in whom a rectal examination was done, a diagnosis of prostatic cancer was made or implied in 54% of patients (Table II). The chance of a correct diagnosis correlated with both the presence of locally extensive (Table III) and metastatic disease.

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**TABLE I. PRESENTING SYMPTOMS IN 174 PATIENTS WITH PROSTATIC CANCER**

Symptom	No. of patients in stage						Total	%
	T1-2	%	T3-4	%	T1-4M1	%		
Prostatism/UTI	9	50	26	59	45	40	80	46
Urinary retention	8	28	9	20	36	43	50	29
Haematuria	8	28	10	23	15	13	30	17
Skeletal pain	0	—	7	16	23	20	30	17
Other	0	—	4	9	17	15	21	12
Incidental/routine examination	1	6	2	5	2	2	5	3
<b>Total No. of patients</b>	<b>18</b>		<b>44</b>		<b>112</b>		<b>174</b>	

UTI = urinary tract infection.

**TABLE II. FREQUENCY OF RECTAL EXAMINATION AND ACCURACY OF DIAGNOSIS AFTER RECTAL EXAMINATION IN 97 PATIENTS WITH PROSTATIC CANCER**

	Rectal examination		Prostatic cancer diagnosed	
	done	%		%
<b>Non-metastatic</b>				
White	8/14	57,1	3/8	37,5
Coloured	9/11	81,8	3/9	33,3
<b>Total</b>	<b>17/25</b>	<b>68,0</b>	<b>6/17</b>	<b>35,2</b>
<b>Metastatic</b>				
White	11/19	57,9	7/11	63,6
Coloured	35/53	66,0	22/35	62,8
<b>Total</b>	<b>46/72</b>	<b>63,9</b>	<b>28/46</b>	<b>60,9</b>
<b>All cancers</b>	<b>63/97</b>	<b>64,9</b>	<b>34/63</b>	<b>54,0</b>

**TABLE III. CORRELATION OF THE EXTENT OF THE LOCAL INFILTRATION BY PROSTATIC CANCER WITH THE ACCURACY OF DIAGNOSIS BY RECTAL EXAMINATION**

Extent of local disease (T stage)	Prostatic cancers diagnosed	
	per No. of rectal examinations done	%
T1-2	3/9	33,3
T3	6/13	46,2
T4	25/41	61,0

## Discussion

The potential for cure of the patient with prostatic cancer is largely dependent on the stage of the disease at diagnosis. While hormonal therapy is very effective palliation in patients with metastatic prostatic cancer, it is never curative. To cure prostatic cancer it must be diagnosed before it has metastasised and ideally while the tumour is still confined to the prostate. In a recent survey of prostatic cancer patients, sponsored by the American College of Surgeons, 55,6% of patients presented with stage A or B disease (confined to the prostate) and 24,5% presented with stage D (metastatic) cancer.<sup>5</sup> In contrast, Walker *et al.*<sup>6</sup> have reported that of black Sowetan men with prostatic cancer, 90% had stage D disease at presentation. Our experience

seems to correlate with these findings. The prostatic cancers tended to be more locally extensive than the US experience, but white patients had an incidence of metastatic disease (29%) similar to that of US prostatic cancer patients, while coloured patients had an incidence intermediate between the white group and the black group.

The symptoms at presentation in this series were similar to those reported elsewhere.<sup>7</sup> The majority of patients with prostatic cancer present with lower urinary tract outflow obstruction. In many patients the symptoms are not due to cancer, but the coexistent benign prostatic hyperplasia and thus the finding on rectal examination of a prostatic cancer may in a sense be regarded as incidental. More disturbing, however, is the finding that apparently not all patients with prostatism are subjected to rectal examination before referral for treatment. Even if rectal examination was done, in 46% of patients in whom clinically palpable prostatic cancer could be diagnosed subsequently, the diagnosis was not suspected at the initial rectal examination. The incidence of rectal examination and the accuracy of diagnosis was not influenced by the patient's racial origin, but the likelihood of a correct diagnosis increased with more locally extensive tumours.

Thus, in the patient with prostatic cancer who presents to his primary physician with symptoms due to cancer, the diagnosis will be suspected in only one-third of patients by the end of the initial consultation. This finding is, of course, of no consequence if the patient is to be referred for urological evaluation, but since most patients with mild or even moderate symptoms should not be referred, this may imply that a great many patients with prostatic cancer are not diagnosed at a stage when their cancer is still amenable to curative therapy.

It is the ideal that every man over the age of 40 years should undergo routine yearly rectal examination to diagnose prostatic and anorectal cancers at a stage when they are potentially curable.<sup>3</sup> However, it would seem that the number of cancers suitable for curative therapy may be significantly increased if a careful rectal examination by a trained clinician is done when it is indicated by the patient's symptomatology. All patients over 40 years of age in whom areas of induration or hardness in the prostatic substance are found, especially if associated with nodularity, should be further evaluated by biopsy or cytological aspiration. This policy will undoubtedly lead to many unnecessary investigations, but is the only means whereby the diagnosis of curable prostatic cancers can be improved.

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