ABDOMINAL TUMOR AND PROSTATIC CANCER

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UNEXPLAINED abdominal masses are seldom caused by prostatic carcinoma. Recently we observed 2 patients with large abdominal masses secondary to asymptomatic carcinoma of the prostate gland. These 2 patients emphasize the importance of a careful examination of the prostate gland in any man with an abdominal mass.

Prostatic cancer metastasizes by a number of different routes, often widely and without any symptoms from the primary tumor. The etiology of an abdominal tumor in a man may thus be overlooked. The following 2 case reports illustrate this point and demonstrate the response of prostatic cancer to antiandrogenic therapy.

Case 1. A man, aged 58, was first observed at the Cleveland Clinic on September 4, 1951, with a complaint of back pain of 7 months' duration. The pain, initially experienced after a fall, had not responded to any form of therapy. He had no gastrointestinal or other complaints. The patient had received treatment for syphilis several years previously.

Physical examination showed a blood pressure of 100/70; his temperature was 98 F. and pulse 60. The pertinent physical findings were limited to the abdomen and genitourinary tract. The abdomen was scaphoid, and there were no areas of tenderness. In the left upper quadrant a hard, rounded nodular mass was palpable and did not move with respiration. A similar but larger mass was also palpable in the right lower quadrant, and apparently attached to the wall of the pelvis. The prostate gland was enlarged, hard and nodular; above and lateral to the prostate were broad, hard cords of tissue.

The Wassermann test was negative; Kahn 4 plus. Blood urea was 21 mg. per hundred cc.; hemoglobin 12 Gm. per hundred cc. White blood count was 7150. Acid phosphatase was 76.5 Bodansky units; alkaline phosphatase 2.9 Bodansky units; urine pH 5.5, specific gravity 1,024, red blood cells 5-10, white blood cells 10-12 per high power field.

Roentgenograms of the spine, pelvis, and gastrointestinal tract were all essentially normal. The apices of both lung fields showed fibrocalcific infiltration, believed to represent arrested tuberculosis.

Silverman needle biopsy of the prostate gland revealed adenocarcinoma with intravascular and perineural lymphatic extension. A diagnosis was made of carcinoma of the prostate gland with metastasis to the retroperitoneal glands. Bilateral orchiectomy was performed and estrogenic therapy begun in the form of stilbestrol (1 mg. four times daily).

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Within 1 month the abdominal masses had regressed in size and become softer. The prostate gland likewise had become smaller and softer. The acid phosphatase was 6.1 and the alkaline phosphatase 1.7 Bodansky units. Four months later the abdominal masses were no longer palpable. The prostate gland was soft, but there was still evidence of extension of the carcinoma in the region of the seminal vesicles. Acid phosphatase at this time was 1.6 Bodansky units.

Case 2. A man, aged 58, came to the Clinic with the chief complaint of a mass in the rectum. For 7 to 8 months prior to observation he had experienced progressive constipation which was relieved by cathartics several times a week. For 2 months he had noticed blood in the stools, had lost his appetite and 10 pounds in weight. Three weeks previously he had experienced an episode of urinary frequency, dysuria, urgency and nocturia.

On physical examination blood pressure was 160/92 and temperature 99.4 F. Heart and chest were essentially normal. On examination of the abdomen, the liver edge was just palpable. In both the right upper and left lower quadrants there were hard, smooth, rounded masses. The former was movable and somewhat tender; the latter mass was less tender. Rectal examination showed a large mass in the region of the prostate gland which extended up on the right side of the pelvic wall and underneath the base of the bladder. It was hard, nodular and irregular.

Hemoglobin was 12 Gm., and white blood count 9400. Serum phosphorus was 3.2; acid phosphatase 8.5 Bodansky units. Blood sugar was 81 mg. and blood urea 24 mg. Roentgenograms of chest and KUB plates of the abdomen were essentially normal.

Needle biopsy of the rectal mass was performed but the tissue was not adequate for diagnosis. The proctoscopist suspected Blumer's shelf and an inoperable carcinoma of the bowel with metastasis to the peritoneal floor. The hard nodules in the prostate and the elevated acid phosphatase suggested a carcinoma of the prostate gland.

The patient was placed on a low residue diet and was given stilbestrol, 1 mg., 3 times a day. He returned 4 months later complaining of attacks of right lower quadrant pain which had continued from 3 to 4 days. Physical examination revealed that the hard masses in the abdomen had disappeared. The prostate was again found to be enlarged and hard with extension of the induration laterally. Gastrointestinal and genitourinary roentgen studies were normal except for nonvisualization of the gallbladder after 2 doses of dye.

Three months later the patient had several attacks of severe epigastric pain associated with vomiting. This was thought to be cholecystitis. Acid phosphatase at this time was 0.9 Bodansky units and alkaline phosphatase 4.4 Bodansky units. Blood urea was 21 mg. and hemoglobin 11.5 Gm. The patient was advised to continue stilbestrol, 1 mg., 4 times a day. The last visit was on February 14, 1952 (12 months after the original visit), at which time he was asymptomatic. Examination of the abdomen was negative; the prostate showed hardness of the right lobe with lateral extension to the wall of the pelvis.

Discussion

Palpable retroperitoneal iliac or aortic lymph nodes are found in a small number of all men with prostatic cancer.[1] This does not reflect the actual involvement of these lymph nodes by this neoplasm because, in most instances, the glands are not large enough to be felt through the abdominal wall.[2] Perineural lymphatics within the prostate gland are involved early by carcinoma

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and probably also the capillaries of the blood stream. Metastasis to the bony pelvis and spine occurs via the lymphatics associated with the periprostatic and pelvic nerves[3] and the venous channels which lead to the bony structures.[4] The regular pelvic lymphatics are also invaded with gradual spread to the iliac and aortic glands with later extension to the entire lymphatic system.

In practically all instances where there is evidence of metastatic prostatic cancer, the prostate gland is abnormal, presenting hard nodularity with palpable evidence of extension of the process beyond the gland. Occasionally the prostate may be small and hard but the metastasis around it extensive, making the observations difficult to interpret.

Other diseases which cause retroperitoneal gland enlargement are sarcoidosis, tuberculosis, lymphoma, and metastatic carcinoma. Primary retroperitoneal tumors such as lipomas, sarcomas, or neurofibromas, must also be considered in the diagnosis. Tuberculosis and lymphoma may involve the prostate gland but the palpatory findings are not those of prostatic cancer.

The diagnosis of carcinoma of the prostate with metastasis is supported by the discovery of a high serum acid phosphatase. If the cancer is confined to the prostate gland there is no elevation of the serum acid phosphatase. Normal levels are often found when there is extensive disease, the tumor cells apparently being incapable of producing acid phosphatase. The diagnosis is also supported by roentgen evidence of osteoblastic metastasis characteristic of carcinoma of the prostate; with such osseous lesions both serum alkaline and acid phosphatase are elevated in most instances. A biopsy of the prostate gland is obtained readily by direct perineal puncture with a biopsy needle, with a resectoscope from the prostatic urethra in suitable cases, or by open perineal biopsy.

The presumptive diagnosis of prostatic cancer in the retroperitoneal glands is made if the tumor becomes smaller under appropriate antiandrogenic therapy, as with the 2 patients discussed here.

The possibility of metastasis from carcinoma of the prostate should be considered in any man with a questionable abdominal mass.

References

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