**Introduction**

Most malignant neck masses arise as a nodal metastasis from the upper aerodigestive tract and most commonly is comprised of squamous cell carcinoma. Occasionally the malignant neck mass may have an intrafacial primary source. Prostate cancer is the most common cancer diagnosed and 6th leading cause of cancer death worldwide among men.1 We describe a case of metastatic prostate adenocarcinoma with initial presentation as large supraclavicular lymphadenopathy.

**Case Report**

A 53 year old African-American male presented with complaint of a nontender left neck mass that had been progressively enlarging for approximately 14 months. The patient had lost weight, but denied dysphagia, otalgia, hoarseness, night sweats, fever, malaise, bone pain, or any urologic symptoms. Physical exam revealed a large, non-fluctuant, non-tender mass in the left supraclavicular fossa. Flexible laryngoscopy was within normal limits. The remainder of the physical exam was unremarkable. Computed tomography (CT) of the neck revealed a 7x6 cm mass in left level IV of the neck (Figure 1). There were also multiple enlarged pelvic and retroperitoneal lymph nodes on abdominal CT.

Fine needle aspiration biopsy was performed but was non-diagnostic. Incisional biopsy revealed histologic evidence of a cribriform pattern of cells, prominent solitary nucleoli, and a uniform population of cells with presence of vesicular chromatin (Figure 2). Immunohistochemical evaluation of the specimen was positive for CDX2, Ber-EP4, Vimentin, prostate specific antigen (PSA), and cytokeratin. These findings were consistent with metastatic prostate adenocarcinoma.

Genitourinary exam revealed normal genitalia. Rectal exam revealed that the prostate was nodular and tender. Serum PSA level was 990 ng/mL. A bone scan showed multiple lesions throughout the pelvis and lumbar spine (Figure 3).

The patient was started on a non-steroidal anti-hormonal treatment and 4 weeks later his PSA was 131 ng/mL. Goserelin acetate, a GnRH agonist, was then initiated and 3 months later his PSA was 3.3 ng/mL. Two years after initial diagnosis the patient is living a fully functional life as he continues his medical therapy.

**Discussion**

Since 1984, adenocarcinoma of the prostate has been the most common noncutaneous neoplasm of American men, with a lifetime risk of 16.72%.2 While prostate cancer is uncommon in men less than 50 years old, it becomes more frequent in men 80 years or older. African-American males have the greatest incidence of prostate cancer and the highest mortality (62.3%).3 Since the introduction of screening with prostate specific antigen (PSA) in 1994, a new controversial practice, the incidence of non-regional spread has declined dramatically. Currently, 60-75% of newly diagnosed cases are contained within the prostate organ and are clinically non-palpable.3 The most common locations of extra-prostatic dissemination are to the pelvic lymph nodes and bone, followed by the lungs and liver. It is unusual for these metastatic lesions to be large and bulky deposits; rather they tend to metastasize diffusely as several smaller nodes in nearby lymph node basins.4

The incidence of genito-urinary malignancy metastasizing to the head and neck is rare, especially those originating from the prostate. Flocks and Boatman noted that of all metastatic lesions in the head and neck, 6% were of renal/adrenal origin and only 1% of prostatic origin.5 Supradiaphragmatic metastasis is most common to the supraclavicular, cervical, axillary, and mediastinal lymph node basins.4

Many theories describe the mechanism of metastasis to the supradiaphragmatic lymph nodes from the genito-urinary tract. One widely accepted theory posits that supradiaphragmatic spread is mediated through Batson’s venous plexus, a valveless network of veins that allows communication between the pelvic and thoracic veins via the internal vertebral venous plexuses.6 The Batson plexus provides a route of spread for both infectious and malignant processes. A valsalva maneuver can result in a reversal of blood flow into the vertebral veins from the inferior vena cava.5

Given the rarity of prostatic metastasis to the neck, there are only a handful of reports in the medical literature. Cho et al. presented 26 patients with prostate cancer metastasis to supradiaphragmatic lymph nodes wherein 15 cases involved the suprACLavicular nodes, and only 15 cases had an abnormal digital rectal exam.7 Saeter et al. discussed 35 patients with non-regional lymphatic dissemination from a primary prostate adenocarcinoma wherein 69% had a lesion in the left supraclavicular fossa but only 75% of cases had an abnormal digital rectal exam.8 Butler et al. described 19 patients presenting with suprACLavicular lymphadenopathy who were deemed to have prostate cancer, but only 42% of cases had a digital rectal exam abnormalities.9

Diagnosis of metastatic prostatic cancer via FNA or excisional biopsy necessitates both microscopy and immunohistochemistry. The histological criteria include infiltrative small glands or large cribriform glands, absence of basal cells, nuclear atypia, as well as minor criteria including, but not limited to, an amphiphilic cytoplasm and nuclear hyperchromasia.9 Prostate specific antigen (PSA) and prostatic acid phosphatase (PSAP) aid histopathological diagnosis.9 Cytokeratin and mucin stains are also positive.9 More recent data suggests that PSA in conjunction with p501s (protein), a cytoplasmic marker expressed in both benign and malignant cells, provides the greatest immunohistochemical specificity.10,11

The prognosis is variable when head and neck metastasis is evident. Hunt et al. reported 14 patients that underwent combination hormone and radiation therapy, 8 of whom had widespread disease at the time of diagnosis. After diagnosis, 7 patients had an average lifespan of 23 months, 5 averaged 3.6 months (2 of whom had spinal cord metastasis secondary to vertebral metastasis, dying within 10 days).12 Jones and Anthony presented 5 of 11 patients died after findings of head and neck metastasis, averaging 34.4 months of life; the remaining six patients were alive at the time of diagnosis.10 McNemmin et al reported two of four patients who were alive 2 years after findings of cervical lymph node metastasis.13

**References**


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**Contact**

Ryan Meacham, MD
Department of Otolaryngology
University of Tennessee Health Science Center
Email: rmeacham@uthsc.edu

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