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Abstract:

Tumours of the seminal vesicle are rare. Because of the location of the organ, the clinical manifestation is indistinct and diagnosis is difficult. The purpose of the study is to discuss the management of adenocarcinoma of the seminal vesicle using two consecutive patients with seminal vesicle tumours who presented late with features suggestive of typical prostate neoplasm and were misdiagnosed even after contrast enhanced Computerized Tomography scan as case studies. To highlight the challenges encountered in diagnosis of seminal vesicle tumour and to review the literature on the management of the disease.

Keywords: *Adenocarcinoma, Seminal vesicle, rare tumour*

CASE 1:

A 32year old man presented with history of painless haematuria of 8months and storage lower urinary tract symptoms of about 2 months. He also had severe deep pelvic pain, and difficulty in walking. There was supra pubic tenderness but no masses were palpated per abdomen. Digital rectal examination revealed a huge mass protruding into the rectum from the anterior rectal wall that was firm. A clinical diagnosis of bleeding BPH was made. Serum PSA was 0.8ng/ml. Cystoscopy revealed no evidence of bladder cancer. Barium enema showed no synchronous rectal lesions. Intravenous Urography showed evidence of bilateral obstructive uropathy with urinary bladder displaced to the right but no features suggestive of upper tract malignancies (figures 1-2). Abdomino-pelvic USS was done which showed an echo complex mass measuring 82mm by 90mm visualized below the urinary bladder. The shadow of the urethral catheter was not seen traversing the mass but was rather displaced to the left. The mass equally displaced the bladder anteriorly. This raised a doubt whether it was a prostate mass. Abdomino -Pelvic CT Scan showed a heterogeneously enhancing mass of weight 789g (figure 3). Differential diagnoses of Benign prostatic enlargement, Rhabdomyosarcoma, and Pelvic abscess were made. He had pelvic exploration through a midline subumbilical incision. A huge capsulated unresectable mass was seen. Mass was debulked. Patient had uneventful postoperative recovery. He passed clear urine after removal of catheter. Histology showed adenocarcinoma of the seminal vesicle. He was booked for adjuvant radiotherapy but was lost to follow up 6 months after discharge.



Figure 1. This shows the post micturition phase of Intravenous Urogram (IVU). The contrast opacified urethral catheter (thick white arrow) is deviated to the right.



Figure 2: Bilateral hydronephrosis resulting from huge pelvic mass.



Figure 3: Contrast enhanced CT of the pelvis showing a pelvic mass that typically resembles a prostate mass. Urine filled bladder (thin white arrow) is displaced superiorly, anteriorly and to the left.

CASE REPORT 2:

A 47year old businessman with a 6-month history of painless progressively increasing lower abdominal mass. He had significant storage lower urinary tract symptoms. He also had persistent nonproductive cough of 2 months duration and left lower limb swelling of a month's duration. He smoked a pack of cigarette a day for about 23years. Examination revealed a huge non-tender 18cm by 10cm firm mass above the pubic symphysis. Digital rectal examination revealed an enlarged mass, firm, cannot get above it. A diagnosis of benign prostatic enlargement was made. His PSA was 0.9ng/ml. An ultrasound scan done revealed a prostate of 972g with mild flow on doppler. A CT scan revealed a complex cystic soft tissue mass in the lower abdomen not distinguishable from the prostate, with a diagnosis of multilocular cystadenoma of the prostate with mild hydronephrosis. A differential of bladder leiomyosarcoma, small cell neuroendocrine tumour of the prostate, retroviral disease and genitourinary Tuberculosis were made. Mantoux test was negative, retroviral screen was negative, alphafetoprotein and carcinoembryonic tumour antigen were within normal limits. He had a transrectal tru cut biopsy of the prostate which revealed a benign prostatic hyperplasia. He was also being managed by the haematologist, pulmonologist and general surgeons. He had an exploration via a midline incision. A huge pelvic mass which displaced the bladder anteriorly and rectum posteriorly was found. Attempts at removing the mass were unsuccessful and the mass was debulked and haemostasis was secured. Sample was sent for histology and the result revealed a malignant mesenchymal tumour of the seminal vesicle was made. Immunohistochemistry was not done. The patient made unremarkable recovery. He was booked for chemotherapy but was lost to follow up.

DISCUSSION:

Malignant tumours of the seminal vesicle are rare¹. Primary adenocarcinomas have been reported just more than 50 times and primary leiomyosarcomas about 8 times^{1,2}. Secondary tumours of the seminal vesicle on the other hand are commoner and arise from primaries in a contiguous organ such as prostate, bladder or rectum³. Part of diagnostic work up therefore should include exclusion of tumours in any of these surrounding structures.

Malignancies of the seminal vesicle could occur in males between the ages of 19 and 90 years⁴. As in the cases reported, most cases present with nonspecific symptoms like haematuria, haematospermia, pelvic pain or storage lower urinary tract symptoms like frequency and urgency.^{2,3} The pressure of the enlarging seminal vesicle reduces the functional capacity of the bladder and limits the ability of the bladder to expand, hence the storage symptoms. It is therefore important to at least consider differential diagnosis of seminal vesicle tumour in patients that

present with lower urinary tract symptoms. Both patients presented with pressure symptoms: while the first case presented with difficulty walking and deep pelvic pain the second presented with left lower limb swelling.

Digital Rectal Examination (DRE) is a very important examination tool in assessing patients with prostatic diseases. Digital rectal examination will frequently show a mass protruding from the anterior rectal wall which needs to be differentiated from a prostate mass, rectal mass, or secondaries from other neoplasms. Digital rectal examination finding is therefore only suggestive but not diagnostic.

PSA is a glycoprotein that liquefies the ejaculate.⁵ Serum PSA assay is an important diagnostic tool in evaluation of suspected SVC patient. Low PSA value in these patients was an important diagnostic clue, since it ruled out a prostatic disease. This is because seminal vesicle tumours do not express PSA and prostate specific acid phosphatase, (PAP)⁶. Furthermore, the lack of immune staining for PSA will rule out the possibility of a prostate secondary. This will not however exclude anaplastic prostate carcinoma which are usually PSA negative⁷.

Other biochemical assays have improved the detection of SVC. For instance, identification of specific immunophenotype for SVC has improved the utility of immunohistochemistry in the diagnosis of the tumour⁶. SVC stain positive for cancer antigen (CA) 125. Neoplasms that commonly invade the seminal vesicle such as adenocarcinoma of prostate, all bladder adenocarcinomas, bladder transitional cell carcinoma, rectal carcinoma, and the very rare mullerian duct cyst adenocarcinoma are all known to be CA 125 negative⁶. Thus, negative staining for PSA/PAP and positive staining for CA125 could differentiate primary SVC from all other differential diagnoses enumerated above.

Tissue histology is important for diagnosis of SVC. Although a trucut biopsy will show the histologic pattern of an adenocarcinoma, it may not indicate the organ of origin. Specific immunostains as shown above will be required to demonstrate the organ of origin whenever trucut biopsy is used in the diagnosis of SVC⁷. However, using surgical specimens' diagnosis is easier., Dalgard et al⁸ provided 3 criteria that should be used whenever surgical specimen are evaluated for SVC. These include: (1) a macro or microscopically verified carcinoma localized exclusively to the seminal vesicle, (2) exclusion of primary carcinoma in any other part of the body, and (3) the tumor should preferably be a papillary adenocarcinoma that resembles the architecture of the non-neoplastic seminal vesicle. In case 1, trucut biopsy was deferred because of the degree of haematuria, but histology for the surgical specimen, and other ancillary investigations satisfied the first two criteria. Because of the stage of the disease in this patient however, evaluation for the third criteria was difficult. In this regard, immune staining would have been necessary for confirmation of the diagnosis.

As part of diagnostic workup for haematuria, Intravenous Urography was done for the first patient and this revealed contralaterally displaced urinary bladder, urethral catheter that was shifted from the midline (fig 2) and bilateral hydroureteronephrosis (fig 3). A prostate mass elevates the base

of the bladder in IVU, and a urethral catheter, if present should traverse the mass. Displacement of the bladder and the urethral catheter to the right suggests that a contralaterally placed pelvic mass may be responsible. Intravenous urography here played an indirect role in diagnosis of SVC. The second case did not carry out an IVU. He however did a contrast enhanced CTU scan.

Computed Tomography scan, Magnetic Resonance Imaging, and Ultrasonography are useful in diagnosis of seminal vesicle tumour both in the early stage where they help to exclude carcinomas of adjacent organs like prostate, rectum and bladder and at the advanced stage where they delineate the tumour focus⁸. In the two patients, CT scan identified the masses as prostate mass because of the markedly increased size (789g) and 972g in the first and second case respectively. However, USS (like the IVU) by showing the shadow of urinary bladder displaced laterally and the image of the urethral catheter not traversing the mass, clearly excluded a prostate mass.

In management of seminal vesicle tumours a multidisciplinary approach is important to get a good outcome.¹⁰ The second case was managed by a pulmonologist, haematologist and general surgeons. Early cases of seminal vesicle tumour are best treated with radical prostatectomy or cystoprostatectomy and pelvic lymph node dissection and these offer a curative treatment pathway^{3,4}. In both cases presented above open surgery was also carried out. Mendrek et al¹¹ also carried out open surgery for his case. However, cases of minimally invasive surgery for tumours on the seminal vesicle have been carried done.^{12,13,14,15}

Adjuvant radiotherapy or androgen deprivation has resulted in long term palliation in patients with advanced diseases^{3,4}. Adjuvant chemotherapy has shown additional benefit in the management of advanced SVC.^{16,17}

In conclusion, Primary adenocarcinoma of the seminal vesicle is rare. Diagnosis is difficult and patients usually present late. Diagnosis requires a high index of suspicion, radiological examination, cystoscopy and histology to make a diagnosis. Inclusion of SVC as a differential diagnosis in patients with LUTS may increase clinical suspicion.

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