
CASE REPORT

Penile Hemangioma in a Prostate Cancer Patient; A case report

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ABSTRACT

Hemangiomas are rare vascular benign tumors. Frequency of hemangiomas in genital region is quite uncommon with less credible occurrence in adult population. These are classified into capillary, cavernous, arteriovenous, venous and mixed sub-types. These patients have a poor prognosis and may require surgical intervention. We present case of penile hemangioma co-existing with prostate carcinoma. Patient presented with palpable mass in the penis and swelling of the overlying skin. Initial diagnosis of penile metastasis was made keeping in with the history of primary prostatic carcinoma. Doppler ultrasound of penis was done which showed soft tissue oval shaped mass with dilated tortuous vascular channels which raised the suspicion of vascular malformation in penis. Subsequent imaging with MRI and PET/CT scan were carried out to confirm the diagnosis of hemangioma based on imaging.

Keywords: Hemangioma, prostate carcinoma, MRI, external beam radiotherapy

How to cite this article: Javed A, Mahreen S, Faiq SM. Penile hemangioma in a prostate cancer patient; a case report. J Dow Uni Health Sci. 2018; 12(3): 120-123.

INTRODUCTION

Hemangiomas are usually classified according to their site of origin.¹ They may arise from capillaries, can be cavernous, arteriovenous, venous and mixed subtypes. Hemangiomas can arise from those vascular channels which are abnormal and cannot be classified as arterial or venous origin. Common sites of hemangiomas in the body are head, neck and lower limbs, and very uncommonly in penis. Reported cases of penile hemangiomas are only 29 cases.^{2,3}

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Treatment of genital hemangiomas is always a challenging situation for surgeons because of its rarity.⁴

CASE REPORT

An 80 years old hypertensive male presented to Out Patient Department (OPD) with complaints of penile pain and is already known case of prostate carcinoma. His cancer history dates back to 07/1997, when transrectal ultrasound guided biopsy was performed which confirmed adenocarcinoma of prostate Gleason score 5. In 1998, transurethral resection of the prostate was undertaken because of his continuing complaints of bladder outlet obstruction symptoms. Bone scan remained negative for any metastasis. Prior to treatment, external beam radiotherapy was given which did not help in limiting the disease process subsequently leading to the surgical intervention. This man again developed complaints of gradual painless

swelling over penis for the past 1 year. Initial diagnosis of metastatic deposit to penis was made, based on the history of previous prostatic carcinoma. Clinical examination showed soft palpable penile mass with skin discoloration. Color Doppler ultrasound was performed with 7MHz which illustrated a large soft tissue oval shaped mass in the penile shaft more on right side, possible seen arising from the urethral epithelium and extending from the membrane of urethra up to the mid to dorsal penile epithelium showing increased vascularity on Doppler. The lesion approximately measured 2.0 x 2.7 mm (APxTr) (Fig. 1). Further imaging was performed and MRI of pelvis was done which showed abnormal signal intensity lesion involving penile urethra causing mild luminal distension. The lesion appears iso to low on T1WI and T2WI and remains high on FAT SAT. Heterogeneous post contrast enhancement was seen (Fig. 2).

CT scan of the same patient demonstrated a soft tissue density mass lesion involving the penis. On the plain study, punctate calcifications (phleboliths) were seen (Fig. 3). Minimal arterial enhancement (fig. 4 a) with homogenous filling of contrast on portovenous and delayed phases were noted (fig 4b and c). Obstructive effect of this lesion was noted on the proximal part of penile urethra resulting in its dilatation.

PET/CT images were obtained using 4.017 mCi of Ga-68 PSMA administered intravenously. Radiotracer avid lesion with flakes of calcification involving penis was seen, SUV max 36.7. This most likely attributed *penile hemangioma*. Radiotracer uptake was also seen involving left acetabulum, body of L1 & S2 vertebrae, SUV max 23.0 suggesting the bony metastasis (Fig. 5)

Based on the above mentioned imaging findings, a diagnosis of hemangioma involving the penis was made. Ideally, laser ablation or surgical excision should be performed. Referring to the increasing age of patient and his aggravating clinical condition, no surgical treatment was planned and patient was treated conservatively and doing quite well.

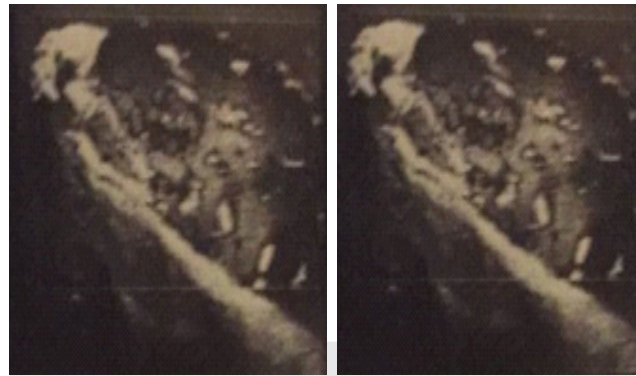


Figure 1: Color Doppler Ultrasound: Soft tissue oval shaped mass in penile shaft most likely arising from membrane of urethra extending up to the mid to dorsal penis. Multiple dilated vascular channels are seen in it.

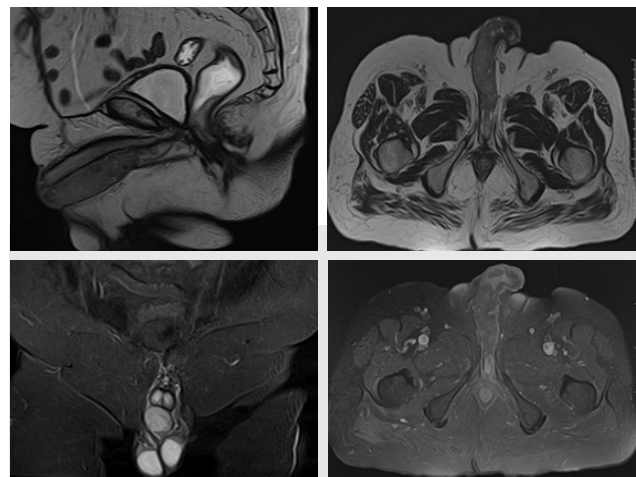


Figure 2 : MRI axial, coronal and sagittal sections: Abnormal signal intensity lesion involving penile shaft causing mild proximal urethral dilatation. The lesion appears iso to low on T1WI and T2WI and remains high on FAT SAT. Heterogenous post contrast enhancement was seen.

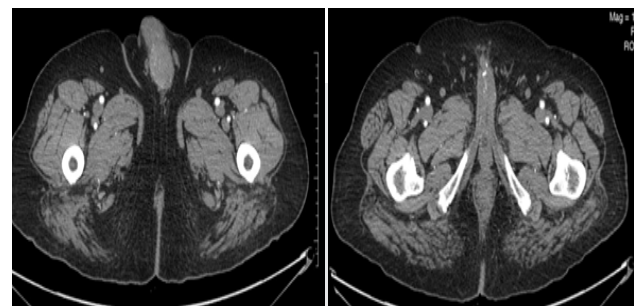


Figure 3: Unhanced CT scan pelvis showing foci of calcifications in penile shaft.

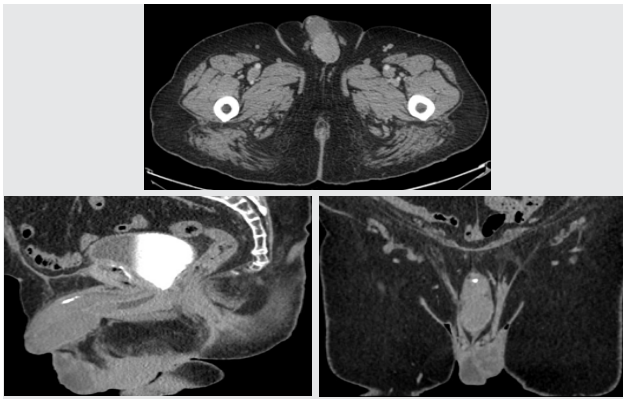


Figure 4 : CT scan arterial (A), portovenous (B) and delayed phases (C): Soft tissue density mass lesions involving shaft of penis showing minimal arterial enhancement with homogenous filling of contrast on portovenous and delayed phases. Obstructing effects on mid and distal penile urethra with dilatation of proximal urethra.

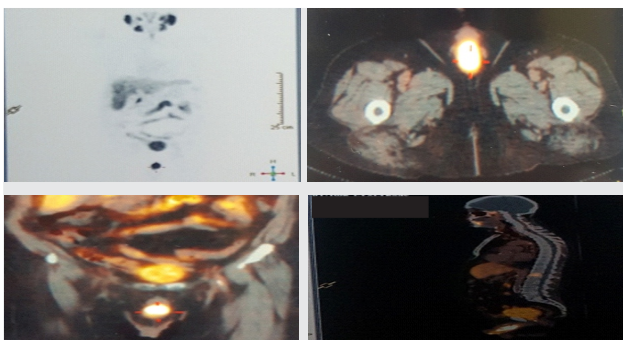


Figure 5: PET CT. Radiotracer avid lesion with flakes of calcification involving penis, SUV max 36.7. This most likely attributed *penile hemangioma*.

DISCUSSION:

Hemangiomas can be seen in any part of the body, however rarely found in the genitals. These are benign tumors occurring as a result of subsequent abnormal vascular proliferation, the exact pathogenesis however remains unclear. Hemangiomas are found seldom in adults. Genital hemangiomas are much rarely reported in adults and have been more commonly reported in the pediatric population.^{5,6} These tumors involve glans penis, penile shaft, scrotum, and perineum.⁷ Boullay in 1851 reported the first case of genital hemangioma after which very few cases have been reported so far.⁸ Our case

initially looked like metastatic deposit from prostate cancer in the genitals which after thorough literature research demonstrated similar imaging findings as of hemangioma.

Imaging plays a vital role in detection of the hemangioma as well as any other associated abnormality. Presence of phleboliths on plain radiographs or CT scans is crucial for the radiographic detection of hemangioma, most likely cavernous hemangiomas.⁹

In sonography, hemangiomas present as predominantly hypoechoic masses with phleboliths as linear echogenic foci. These areas may show vascularity on CDI.

CT scan and MRI maybe carried out as vital pre-surgery requisite to confirm the diagnosis and also to see the extent of the lesions.¹⁰

Phleboliths are easily demonstrated on CT scans. A non-homogeneous enhancement of the lesion is seen on postcontrast images on the pattern of hemangiomas.¹¹

On MRI, the lesions present as lobulated abnormal signal intensity areas appearing hypointense on T1WI and hyperintense on T2WI. Multiple flow voids are also seen suggesting vascular signal voids and phleboliths. Penile MRI is helpful in better visualization of penile anatomy and depicts the extension of the lesion in the penile shaft.

According to a study done by Hatayama 16 lesions were reviewed in established cases of hemangiomas. All 16 lesions examined by PET with FDG and/or FMT showed tracer uptake. Although plain radiography, CT, MRI, and angiography may be a useful tool to see the anatomic extent, FDG-PET may present as the most accurate imaging modality to differentiate benign hemangiomas from other soft tissue tumors.¹²

All the above mentioned imaging findings were also seen in our case.

Complete annihilation of the lesion is recommended. Sclerosing agent, surgery or laser therapy can be used as treatment options and owes to high success rates of laser treatment 92.8% with minimal complication rate. Laser treatment may also be used an alternate treatment of choice in some settings.¹³

CONCLUSION

Penile hemangioma remains a rare vascular tumor. The present case highlights the importance of an integrated diagnostic approach via multimodality imaging to avoid misdiagnosis of metastatic deposits in patients with otherwise known primary disease.

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