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A CLINICO-PATHOLOGIC STUDY OF SEVEN CASES OF SARCOMAS OF THE MALE GENITAL TRACT

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Abstract:
Sarcomas are very uncommon in the male genital tract. The biological behaviour and clinical management of these neoplasms vary considerably between the various organs that constitute the male genital tract. Hence it is important to diagnose them accurately. A retrospective six years (2007 to 2012) clinico-pathologic analysis of sarcomas of the male genital tract from the medical records of the Department of Pathology in a tertiary care hospital was carried out and the results are presented here with a review of literature.

Keyword :
Sarcoma - Male Genital Tract - Clinico-pathologic study.

INTRODUCTION:

Mesenchymal tumours of the male genital tract are rare with a wide spectrum of benign and malignant tumours. Sarcomas are even more uncommon in the male genital tract and they exhibit varying degree of differentiation,histological grade and therapeutic options among the various structural organs of the male genital tract. They are diagnostically and therapeutically very challenging neoplasms. In this article we have done a retrospective six years analysis of clinical and pathological characteristics of these malignancies.

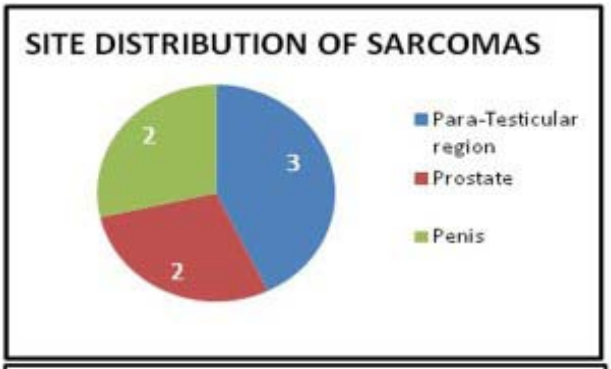
MATERIALS AND METHODS:

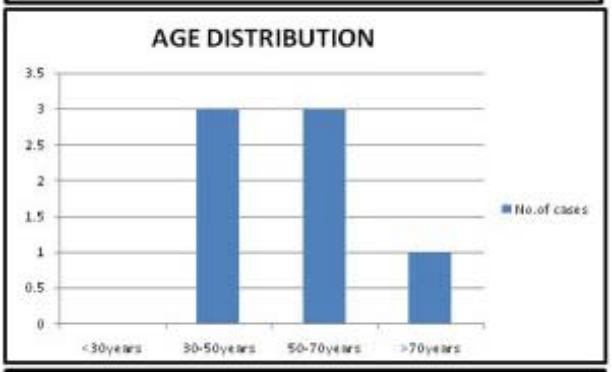
We undertook a retrospective clinico-pathological study of all sarcomas of the male genital tract observed at our Institution from 2007 to 2012. The clinical parameters were documented. The corresponding Hematoxylin & Eosin stained histological slides were examined and various histological types of sarcomas encountered were documented along with the immunohistochemical results.

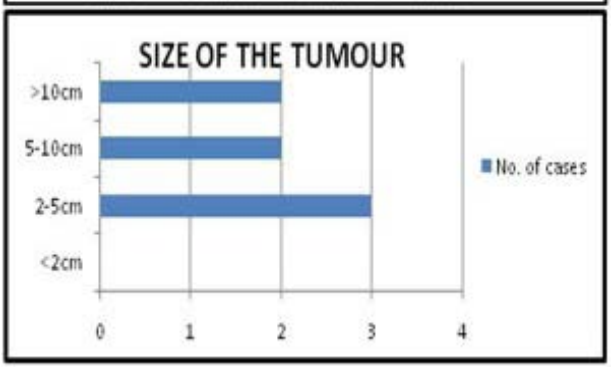
RESULTS:

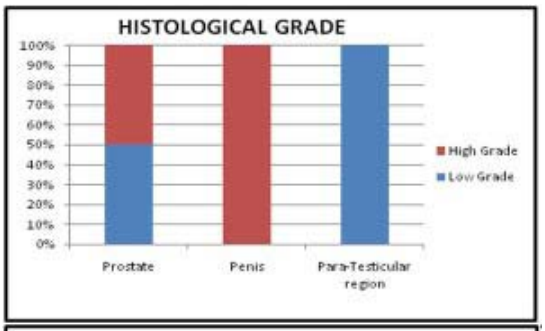
In total, seven sarcomas involving the male genital tract were retrieved from the medical records of our department. Out of them two were of prostatic origin (Leiomyosarcoma), two were of penile origin (Undifferentiated Pleomorphic sarcoma) and three were arising from para-

testicular region (Leiomyosarcoma, Malignant Peripheral Nerve Sheath Tumour, Undifferentiated Pleomorphic sarcoma).









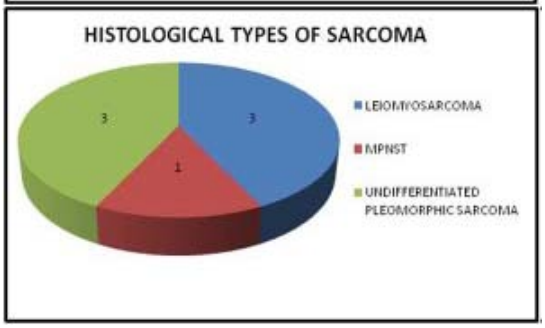
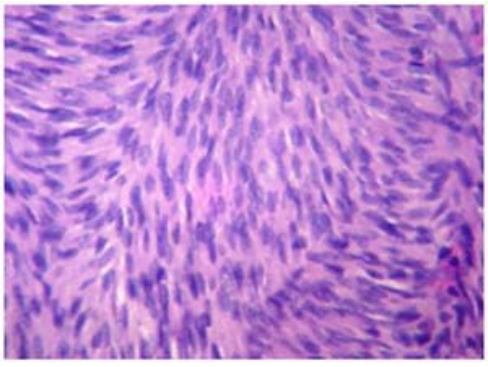
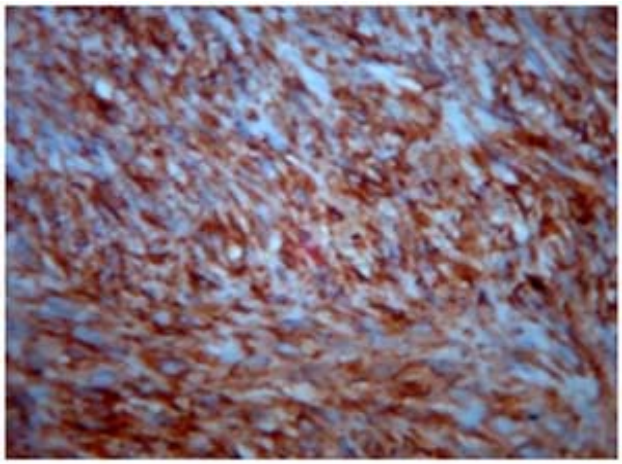


Fig.1: 9605/12 – Leiomyosarcoma-Prostate Fig 2: 9730/12-Undifferentiated Pleomorphic Sar-



MICROSCOPY: Fig.3: Leiomyosarcoma-Prostate (H&E, 40x) Fig.4: Leiomyosarcoma - Vimentin positivity.



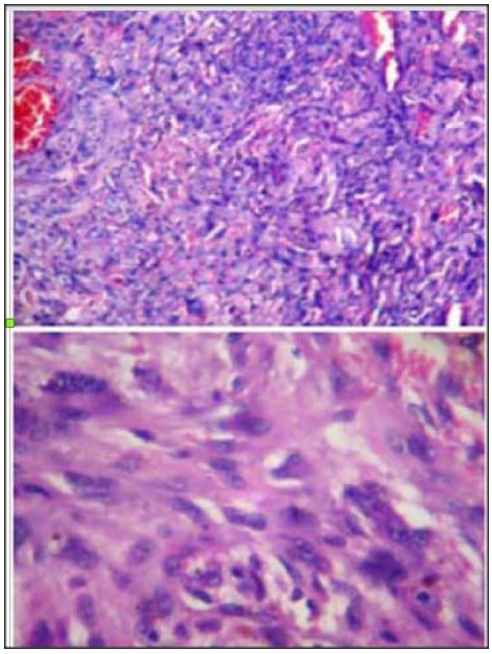


Fig 5 Lelomyosarcoma—SMA Positivity
Fig 6 Lelomyisarcoma—CK Positivity

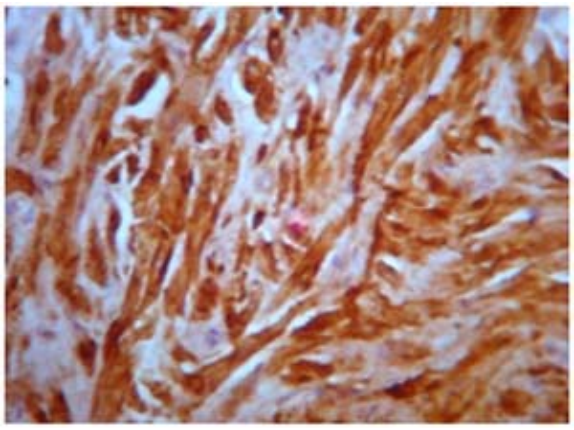
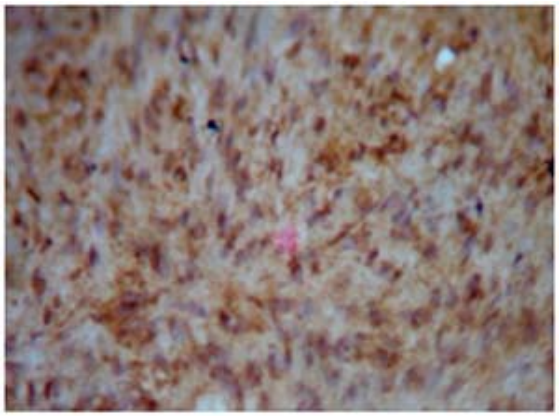


Fig 7: Undifferentiated Pleomorphic sarcoma
Fig.8: Undifferentiated Pleomorphic sarcoma (MFH) – Penis (H&E, 10x) (MFH) – Penis (H&E, 40x)



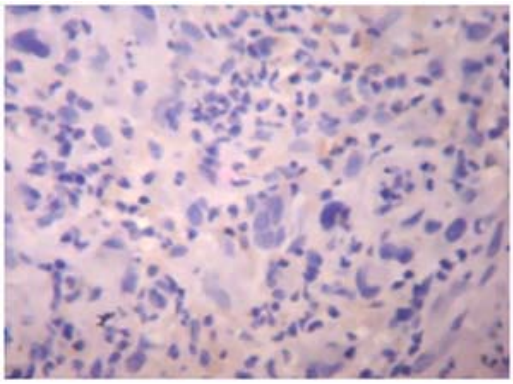


Fig.9: MFH - Vimentin positivity
Fig.10: MFH - CK negativity

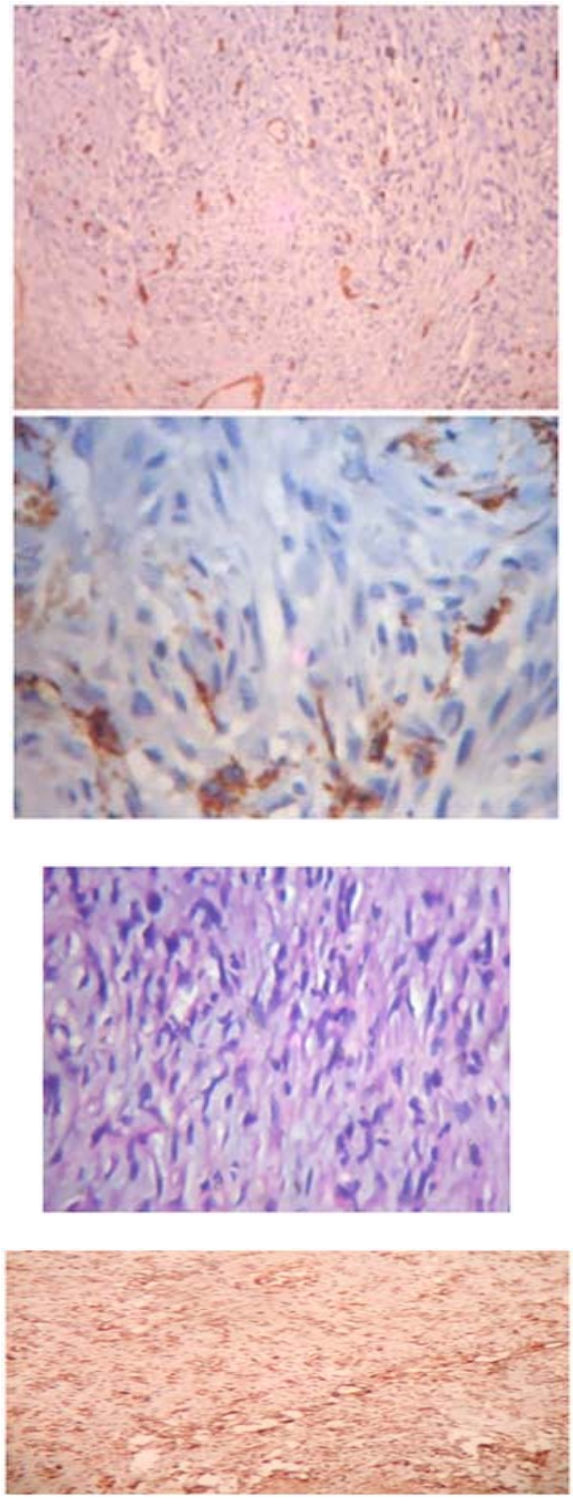


Fig.13: MPNST - Para testis (H&E, 40x)

Fig.14: MPNST – Para testis - S100 positivity

IMMUNOHISTOCHEMISTRY:

S.No	DIAGNOSIS	IMMUNOHISTOCHEMISTRY RESULTS
1	Leiomyosarcoma	Vimentin+, SMA+, Desmin+,CK+,S100-
2	Undifferentiated Pleomorphic sarcoma	Vimentin+, CK-, SMA-, Desmin-, S100-, CD34-
3	Malignant Peripheral Nerve Sheath Tumour	Vimentin+, S100+, CK-, SMA-

DISCUSSION:

Male genital tract includes Testis and its adnexal structures, Penis and Prostate. Primary malignant soft tissue tumours of these organs are exceedingly very rare. Among the prostatic malignancies sarcomas constitute 0.1 to 0.2% of cases[1]- the most common being Leiomyosarcoma in adults and rhabdomyosarcoma in children[1]. In the penis, the most common sarcomas are Kaposi's sarcoma and Leiomyosarcoma[1] whereas Liposarcoma & leiomyosarcoma constitute the most common sarcomas of the paratesticular region in adults[1] . **Leiomyosarcoma** is a malignant soft tissue tumour that can arise from any tissue containing smooth muscle. In the prostate, it originates from the smooth muscle of prostate & periprostatic tissue. Para-testicular Leiomyosarcoma arises from the undifferentiated mesenchymal cells of cremasteric muscle, vas deferens, smooth muscle surrounding the basement membrane of epididymal canal or the dartos muscle of scrotum. Majority of patients are between 40-70years of age[1]. Grossly, they range in size from 2-24cm with a solid grey white cut surface[1](Fig-1) .

Para-testicular leiomyosarcomas present as a discrete nodular mass which is completely separate from the testicle. Microscopically, they are composed of interlacing fascicles of spindle cells with eosinophilic cytoplasm, hyperchromatic pleomorphic blunt ended nuclei & scattered paranuclear vacuoles (Fig-3). Majority of the prostatic leiomyosarcomas are of higher grade[3] compared to paratesticulareiomyosarcomas which are of lower grade[4]. Immunohistochemistry shows positivity for Vimentin, Desmin & Smooth Muscle Actin. Cytokeratin is expressed in 25% of cases (Fig -4,5,6). It carries an overall poor prognosis. **Undifferentiated Pleomorphic Sarcoma,** formally known as malignant fibrous histiocytoma (MFH) is a diagnosis of exclusion. Although it is the most common soft tissue tumour in late adults, primary involvement of genito-urinary tract is very rare[5]. This diagnosis is restricted to pleomorphic tumours that lack morphological & immunohistochemical evidence for another specific line of differentiation even after extensive sampling (Fig. 7 - 12). MFH involving the penis is exceedingly rare with only 5 cases, having been reported in literature[5]. Irradiation has been implicated in its pathogenesis & it affects individuals between 50-70years of age [2]. It commonly involves the shaft of penis & presents as a rapidly growing infiltrative mass[2] (Fig-2). It is imperative to rule out sarcomatoid carcinoma, desmoplastic melanoma & other sarcomas using ancillary techniques. Prognosis is very poor in these patients. **Malignant Peripheral Nerve Sheath Tumour** of the genital tract is very uncommon with limited available site specific data. It resembles the soft tissue counterpart both clinically & histologically (Fig. 13,14) with an overall poor prognosis.

CONCLUSION:

Although sarcomas of the male genital tract are rare, its imperative to diagnose them accurately since the biological behaviour and the clinical management of these neoplasms vary considerably. Thorough Clinical history combined with histology and immunohistochemistry will enable us to overcome the diagnostic challenge posed by these spectrum of neoplasms in the genital tract.

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