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MUCINOUS ADENOCARCINOMA OF TESTIS-A RARE CASE REPORT

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ABSTRACT: Ovarian-type surface epithelial neoplasms of the Testis and Para testis are uncommon, and the Mucinous subtype is particularly rare. These tumours represent a counterpart to ovarian cancer. Malignant tumours have the potential for metastatic spread and are often fatal. Doubts and controversy persist regarding the histogenesis of these tumors, the general consensus among authors supports a mullerian origin, but there is argument that mesothelial inclusions or germ cell derivations too play a role. They pose significant diagnostic challenge by showing positivity of various immuno-histochemical staining which are also significantly positive with metastasis of colonic neoplasms and paratesticular tumours. We present to you a case of mucinous adenocarcinoma of testis in a 42 year old male.

KEYWORDS: Testis, Adenocarcinoma, Mucinous.

CASE REPORT: A 42 year male presented to Surgical OPD with a 1-year history of right testicular mass which is painless and gradually increasing in size. There is no history of infertility and difficulty in micturition. No other risk factors for testicular cancer such as Cryptorchidism were found. He had no significant prior medical history and occupational history and was not taking any medications. General examination: Patient is well built and well-nourished with mild pallor. Physical examination revealed a firm mass with an irregular surface in the right scrotum. Skin over the swelling is slightly thickened. No lymph nodes were palpable in the inguinal region or elsewhere. Laboratory investigations: Hb%: 9.6gm%, TLC: 8500 cells/mm³, DLC: N (68) L (28) E(2) M(2), Platelets: 1.5 lakhs/mm³. Blood picture: Normocytic Normochromic anaemia. RBS, Blood urea, Serum Creatinine were within normal limits. Urine microscopy was normal. Chest radiography was normal. Trans-scrotal Ultrasonography revealed a predominant hypoechogenic and heterogeneous mass in the right testis measuring 6×4×2cms which includes solid and cystic areas replacing most of the testicular parenchyma contralateral testis was normal. Ultrasound abdomen was also normal. Abdominal computed tomography (CT) was advised to check the status of Para-aortic and pelvic lymph nodes, which came out to be normal. Serum germ cell tumour markers such as lactate dehydrogenase (LDH), β -human chorionic gonadotropin (β -hCG), and α -fetoprotein (AFP) were advised, which came out to be within normal limits. Right primary testicular tumour was diagnosed and the patient underwent right inguinal orchidectomy. Gross examination: An orchidectomy specimen measuring 6×4.5×2.5cms along with a spermatic cord of length 3cms was received. Cut-section showed cystic areas, largest area measuring 2×1.5cms filled with mucinous material along with few grey-white solid areas. The tissue was fixed in 10% neutral buffered formalin and embedded in paraffin for histologic sections and stained with hematoxylin-eosin.

Microscopy: Histopathological examination of H&E stained section showed tissue composed of single layer of columnar epithelium with focal areas of stratification arranged in pseudopapillary pattern and stromal invasion. Also seen are pools of mucin in the fibromyxoid stroma replacing the normal

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testicular parenchyma. [Image 1, 2] Individual cells are cuboidal to columnar exhibiting marked pleomorphism and with hyperchromatic nucleus [Image 3]. No teratomatous elements and germ cell neoplasia was evident. Also sections from rete testis and epididymis were normal and free from tumor invasion.

DISCUSSION: Primary ovarian-type surface epithelial carcinomas of the Testis and Para testis are rare. Six subtypes have been defined: a) Serous b) Mucinous c) Endometrioid d) Clear e) Transitional & f) Squamous. The most frequent of these is the serous subtype; while the mucinous subtype is very rare [1]. The incidence of these tumours is higher among older age groups, with a median age at onset of 54 years.^(2,3) Similar to ovarian tumours, the biological behaviour ranges from benign to borderline to malignant with metastasis. Although the gross features resemble the well-known ovarian tumours, a few differences are worth noting. Testicular tumours are not generally as large as the ovarian ones, and the more conspicuous location results in patients seeking attention earlier. As a result, the chief complaint is commonly painless enlargement of the testis, sometimes with a hydrocele and rarely with infertility. Compared to an ovarian tumor, a testicular tumor is more often a unilocular cystic tumour. The histogenesis of the ovarian-type surface epithelial tumours of the testis and paratestis remains unclear. These tumours are possibly derived from müllerian remnants or by metaplasia of the mesothelium of the tunica vaginalis. The most important differential diagnosis is metastasis from the gastrointestinal tract. In cases with ovarian tumours, immunostaining for cytokeratin 7, MUC2, MUC5AC, and MUC6 has been reported to be useful in distinguishing from metastatic tumors.^[2] Also, with intratesticular mucinous adenocarcinoma, some reports have suggested the utility of immunohistochemical staining. However, solid evidence is lacking, because of unavailable material and lack of specific markers. The possibility of metastatic lesions from other primary sites should thus be excluded by appropriate clinical, endoscopic, and radiographic investigations. The standard treatment for localized disease is radical orchidectomy. The significance of adjuvant chemotherapy remains controversial, as most reported cases have not shown metastases and had a good prognosis but some cases showed metastatic spread.

Mucinous neoplasms of testis both benign and malignant have only sporadic representation in literature. Kellert described the first case in 1959; that involved an ovarian-type pseudomucinous cystadenoma in the scrotum. He attributed the origins of the tumour to persistent müllerian duct remnants.^[4] Young and Scully described 4 cases of testicular and paratesticular tumors. They discussed these tumors in terms of the müllerian-type epithelium that occurs in the vicinity of the testis and epididymis.^[3] Nistal et al described a case of bilateral mucinous cystadenocarcinoma of the testis and epididymis. They suggested a mesothelial origin citing tubular connections between the mesothelium covering the tunica albuginea and seminiferous tubules, which are implicated in testicular disorders, as well as in the normal testis. However, they also cited that their case may have originated directly in the müllerian remnants.^[5] Likewise, Elbadawi et al reported a case of intratesticular papillary mucinous cystadenocarcinoma in a 60-year-old man, citing müllerian remnants as the likely culprit in its histogenesis.^[6] Recently, Mesia et al described a case of ossified intratesticular mucinous tumour of low malignant potential. Because rare foci of mature bone were found in the cyst wall, a teratoma could not be ruled out. Most of the bone identified in this case was located in fibrotic areas, supporting the presence of metaplastic change similar to the ovarian counterpart. The article didn't conclude the etiology of the tumor.^[7]

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The most recent series by Ulbright and Young nine cases of primary mucinous tumors of the testis and paratestis were described. Two cases from this series described as mucinous cystadenoma were both paratesticular, unlike the intratesticular cases described herein. They are also characterized by testicular counterparts to ovarian mucinous tumors, for which the histologic findings could represent a form of neometaplasia of the epithelium, rather than supporting a germ cell origin.^[8]

CONCLUSION: The mucinous adenocarcinoma of testis behaves similar to that of its ovarian counterparts. Standard treatment is radical orchidectomy while adjuvant chemotherapy might have potential efficacy.^[9,10] Clinical evaluation is necessary to rule out metastatic spread from a primary adenocarcinoma of the appendix, colon, stomach, pancreas, lung, or prostate. A literature review reveals an extensive controversy regarding the origins of these rare tumors, mostly surrounding mullerian versus mesothelial and germ cell derivations. While our study does not resolve this controversy, we believe that the microscopic, clinical and radiographic evidence classifies this tumor as a testicular mucinous adenocarcinoma.

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Fig. 1

Fig. 2

Image 1

Image 2

Image 3

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