

A Hydrocele Caused by Testicular Mesothelioma; A Case Report

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Abstract

One of the testicular tumor manifestations is hydrocele. Testicular hydrocele is a common condition characterized by the accumulation of fluid in the scrotum, resulting in swelling of the testicles. However, in rare cases, it can be a symptom of testicular mesothelioma. Forgoing, in this case report we present an exceptionally infrequent case of right testicular hydrocele caused by testicular mesothelioma; a rare and aggressive form of cancer caused by exposure to asbestos. The diagnosis of testicular mesothelioma requires a combination of imaging tests, biopsy, and histopathological examination for confirmation. Therefore, in our case, after a radical scrotal orchidectomy, pathological examinations confirmed that the case was a testicular mesothelioma. No sign of metastasis was detected.

Scrotum hydroceles may occur commonly but the clinician should perform more investigations because of the possibility of presence of an underlying testicular tumor such as mesothelioma. This abstract, aims to provide an overview of testicular hydrocele caused by testicular mesothelioma, highlighting its clinical features, diagnosis, and treatment options. Clinicians should consider testicular mesothelioma as a possible cause of hydrocele in patients with a history of asbestos exposure or other risk factors.

Key Words: tumor, mesothelioma, hydrocele, scrotum, testis.

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Word count: 1643 **Tables:** 01 **Figures:** 04 **References:** 12

Received:-28 October, 2023, Manuscript No. OAR-23-113817

Editor assigned:- 01 November, 2023, Pre-QC No. OAR-23-113817 (PQ)

Reviewed:- 08 November, 2023, QC No. OAR-23-113817 (Q)

Revised:- 21 November, 2023, Manuscript No. OAR-23-113817 (R)

Published:- 29 November, 2023, Invoice No. J-113817

INTRODUCTION

Hydrocele is a sac filled with fluid that is located in the scrotum around the testicles. The incidence of Hydrocele is approximately 1% in men over the age of 40. The etiologies are such as trauma, infectious disease, and rarely a testicular tumor 1.

Physical examination and radiological assessments can lead to diagnosis, thus, tumor markers such as alpha-fetoprotein

(αFP), beta-human chorionic gonadotropin (β-HCG), and lactate dehydrogenase (LDH) have to be measured. In adults Surgical treatment is the gold standard and it is indicated when functional problems are present such as pain, discomfort or disability due to the size 2.

Mesothelioma arises from the serosal surfaces of the pleural, peritoneal, and pericardial cavities and less likely, the mesothelium that covers the tunica vaginalis, epididymis, spermatic cord, or tunica albuginea 3.

Malignant Mesothelioma of the tunica vaginalis can also rarely lead to hydrocele. The risk factors are exposure to asbestos, trauma, herniorrhaphy, long term hydrocele or spermatocele, long-term epididymitis, orchitis or other inguinal inflammation4-8. Although it can occur even in absence of any risk factors. Forgoing, in this case we present an exceptionally rare case of right testicular hydrocele caused by testicular mesothelioma. After a radical scrotal orchidectomy, pathological examinations confirmed that the case was a testicular mesothelioma.

CASE PRESENTATION

A 69-year-old man with a hydrocele in the right side of his scrotum presented to our clinic. There was no history of trauma. On physical examination, right scrotum was not painful and no inguinal lymphadenopathy were found. The patient denied any exposure to asbestos but in the past 20 years, there were exposures to mazut 3 months each year because of his occupation. In 3 months, the scrotum became hard and there was an increase in size and still had no pain. Hydrocelectomy was performed. Incisional biopsy of spermatic cord revealed infiltrating malignant tumor (Fig.1&2).

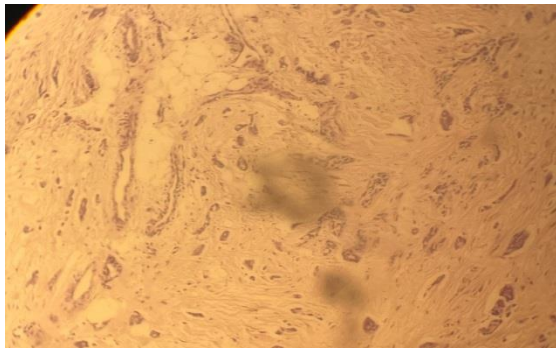


Fig.1. Incisional biopsy of spermatid cord infiltrating malignant tumor.

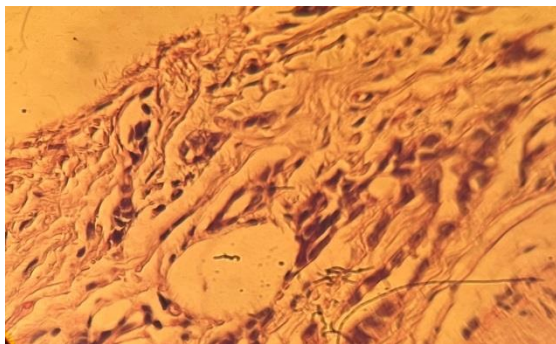


Fig.2. Incisional biopsy of spermatid cord infiltrating malignant tumor.

IHC results were as followed (showed in the Table 1).

Tab.1. IHC results.

Marker	Result
Calretinin	Positive
WT1	Positive
Cytokeratin	Positive
CK20	Weakly positive
Ki67	Positive in 30% of tumoral cells
PSA	Negative
AMACR	Negative
TTF1	Negative
Napsin	Negative
CDX2	Negative

IHC results and histopathologic finding are in favor of malignant mesothelioma. CT Scan was performed (Fig.3&4).

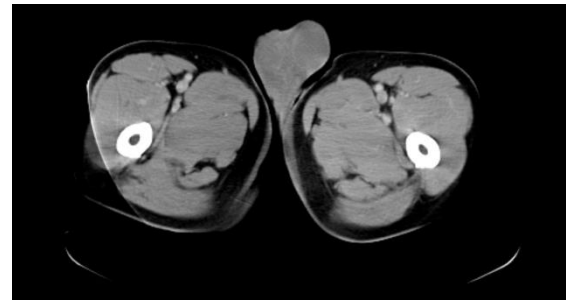


Fig.3. CT scan confirming the tumor.

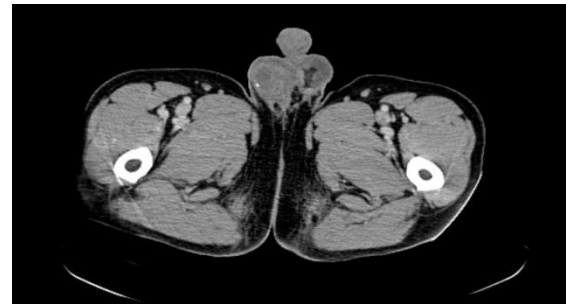


Fig.4. CT scan confirming the tumor.

One month later, right radical scrotal orchidectomy was performed by the urologist. The resected testis with spermatic cord and part of scrotal skin weighed 76gr, testis had an intact tunica albuginea and measured 5x3x2.5cm. On sectioning testicular parenchyma had irregular areas of necrosis but testicular hilar soft tissues and scrotal soft tissues were infiltrated by tumor.

Spermatic cord measured 5cm in length, 2cm in diameter and was extensively infiltrated by a tan ill-defined, firm tumor. Testicular tissue showed regions of coagulative necrosis with no tumoral involvement but testicular hilar soft tissues, spermatic cord and scrotal soft tissues were infiltrated by tumor.

The oncologist suggested that no additional treatment was required and the patient had been on follow-up in our outpatient clinic.

DISCUSSION

Mesothelioma arises from the serosal surfaces of the pleural, peritoneal, and pericardial cavities and less likely, the mesothelium that covers the tunica vaginalis, epididymis, spermatic cord, or tunica albuginea 3.

Testicular mesotheliomas are most often in male patients between ages 55 and 75 years. However there have been reports from cases younger than 25 years 9. As discussed

earlier, exposure to asbestos is a prominent risk factor, as well as trauma, long-term hydrocele, and herniorrhaphy. In 2019, a population-based search was performed using the National Cancer Institute's SEER 18 database. As the results, A total of 113 Patients diagnosed with malignant mesothelioma of the male genital organs from 1973 to 2015 were identified 10. Here in, we add our present case of testicular mesothelioma in a 69-year-old patient, representing neither a history of asbestos exposure nor any other risk factors.

Diagnosing testicular mesothelioma has noticeable difficulties regarding to its rarity. Despite the challenges, physical examination, radiography and ultrasonography are used to detect testicular tumors. Laboratory data including level of tumor markers such as α FP, β -HCG, and LDH can aid in diagnosis 2. Furthermore; IHC results of Calretinin, WT1 and Cytokeratin may also lead to malignant mesothelioma, as in our case.

Patients with testicular mesothelioma may present with scrotal problems. In our case, the right scrotum was increased in size however there was not any tenderness or pain claimed in physical examination. Yet any inguinal lymphadenopathy was found.

For treatment of testicular mesothelioma, surgery (gold standard in adults with functional problems), radiation therapy and chemotherapy may be recommended. Combined treatment options may also be required for patients in the advanced stage. In our case the right radical scrotal orchidectomy was performed and showed no sign of metastasis. And according to our oncologist suggestion, no more radiation therapy or chemotherapy were needed.

The mortality rate testicular mesothelioma has been reported to be 53% over a mean follow-up time of two years 11. Follow-up of our patient has been ongoing since his surgery and will continue in our outpatient clinic.

The difference between other testicular mesothelioma cases and ours, is that our patient denied any exposure to asbestos and had none of the other risk factors. Though there were exposures to mazut (a low-quality heavy fuel oil, used in power plants

and similar applications). Oil spills may involve health risks for people participating in the cleanup operations and coastal inhabitants, given the toxicological properties of the oil components 12.

In conclusion, a hydrocele should be monitored closely. Although mesothelioma is more common in pleural, peritoneal and pericardial cavities, but testicular mesothelioma should be kept in mind. Even with no sign of risk factors 2, 3.

Formatting of funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgements

Special thanks to dear advisors Mr. Bardiya Zamani Ranjbar Garmroodi and Mr. Ehsan Keramati who generously provided knowledge and expertise.

Conflict of Interest

All authors declare that they have no conflicts of interest.

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