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**Table 1: Rigor Adherence Table**

<u>Ethics</u>
Consent: Consent to publish Written consent was obtained from the patient for publication of this case report.
<u>Inclusion and Exclusion Criteria</u>
not detected.
<u>Attrition</u>
not detected.
<u>Sex as a biological variable</u>
not detected.
<u>Subject Demographics</u>
Age: not detected.
Weight: not detected.
<u>Randomization</u>
not detected.
<u>Blinding</u>
not detected.
<u>Power Analysis</u>
not detected.
<u>Replication</u>
not required.

**Table 2: Key Resources Table**

Your Sentences	REAGENT or RESOURCE	SOURCE	IDENTIFIER
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The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: [doi:10.31222/osf.io/9sm4x](https://doi.org/10.31222/osf.io/9sm4x)). The MDAR checklist is a tool for authors, editors and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

## Materials

<b>Antibodies</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
For commercial reagents, provide supplier name, catalogue number and RRID, if available	No antibodies detected. Please add identifiers for all resources where possible	
<b>Cell Materials</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
<b>Cell lines:</b> Provide species information, strain. Provide accession number in repository OR supplier name, catalog number, clone number, OR RRID	No cell lines detected Please add identifiers for all resources where possible	
<b>Primary cultures:</b> Provide species, strain, sex of origin, genetic modification status.	Not currently checked by SciScore	
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<b>Laboratory animals:</b> Provide species, strain, sex, age, genetic modification status. Provide accession number in repository OR supplier name, catalog number, clone number, OR RRID	No organisms detected Please add identifiers for all resources where possible	
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<b>Plants and microbes</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
<b>Plants:</b> provide species and strain, unique accession number if available, and source (including location for collected wild specimens)	Not currently checked by SciScore	
<b>Microbes:</b> provide species and strain, unique accession number if available, and source	Not currently checked by SciScore	
<b>Human research participants</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Not detected.	
Provide statement confirming informed consent obtained from study participants.	Consent to publish Written consent was obtained from the patient for publication of this case report.	
Report on age and sex for all study participants.	<b>Age:</b> not detected. <b>Sex:</b> not detected.	

## Design

<b>Study protocol</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
For clinical trials, provide the trial registration number OR cite DOI in manuscript.	Not detected.	
<b>Laboratory protocol</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
Provide DOI or other citation details if detailed step-by-step protocols are available.	Not detected.	
<b>Experimental study design (statistics details)</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
State whether and how the following have been done, or if they were not carried out		
Sample size determination	not detected.	
Randomization	not detected.	
Blinding	not detected.	
inclusion/exclusion criteria	not detected.	
<b>Sample definition and in-laboratory replication</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
State number of times the experiment was replicated in laboratory	Not detected.	
Define whether data describe technical or biological replicates	Not detected.	
<b>Ethics</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Not detected.	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Not detected.	
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Not detected.	
<b>Dual Use Research of Concern (DURC)</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval	Not currently checked by SciScore	

## Analysis

<b>Attrition</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.	not detected.	

  

<b>Statistics</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
Describe statistical tests used and justify choice of tests.	Not detected.	

  

<b>Data availability</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
State whether newly created datasets are available, including protocols for access or restriction on access.	Not detected.	
If data are publicly available, provide accession number in repository or DOI or URL.	Not detected.	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Not detected.	

  

<b>Code availability</b>	<b>Yes (indicate where provided: page no/section/legend)</b>	<b>n/a</b>
For all newly generated code and software essential for replicating the main findings of the study:		
State whether the code or software is available.	Not detected.	
If code is publicly available, provide accession number in repository, or DOI or URL.	Not detected.	

## Analysis

Adherence to community standards	Yes (indicate where provided: page no/section/legend)	n/a
MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals have their own policy about requiring specific guidelines and recommendations to complement MDAR.		
State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.	Not currently checked by SciScore	



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*By* Yassine Ben Lahlou

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**Access Microbiology**  
**A hydrocele revealing epididymal tuberculosis**  
--Manuscript Draft--

CONFIDENTIAL

## 1 A hydrocele revealing epididymal tuberculosis

2

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14

15

### 16 Data summary

17 No data was reused or generated

### 18 Summary

19 Urogenital tuberculosis <sup>3</sup> is a severe form of extrapulmonary tuberculosis. The  
20 organs most commonly affected are the epididymis and the testis. Clinical  
21 manifestations may include epididymitis, orchi-epididymitis, hydrocele,  
22 associated with leukocyturia, and significant hematuria.

23

24 We report a case of a patient with a hydrocele that revealed epididymal  
25 tuberculosis.

26

### 27 Introduction:

28 Tuberculosis (TB) is a public health problem, especially in developing countries.  
29 Urogenital tuberculosis, known as a severe variant of tuberculosis, constitutes  
30 20-73% of all extrapulmonary cases [1]. Among the organs affected, the  
31 epididymis and testis are the most commonly involved. However, epididymal  
32 localization remains relatively rare [2].

33 In this report, <sup>11</sup> we present a case of a patient with a hydrocele that revealed  
34 epididymal tuberculosis.

33 **Observation:**

34 <sup>8</sup> This is a 70-year-old <sup>6</sup> man from Tangier, in the north of Morocco. He is a  
35 chronic and active smoker, with a medical history of Chronic Obstructive  
36 Pulmonary Disease (COPD) and rheumatoid arthritis, for which he is receiving  
37 immunosuppressive treatment.

38 The patient presented with a left hydrocele, along with a one-month history of  
39 mild scrotal pain. Upon clinical examination, the patient was in a satisfactory  
40 overall condition, with no signs of hernia and a soft lower abdomen. The  
41 appearance of the penis was normal, while the scrotum displayed fluid  
42 accumulation. Scrotal ultrasound revealed a significant amount of fluid in the  
43 left hydrocele and a smaller amount in the right hydrocele.

44 Subsequently, surgical treatment was undertaken, during which epididymitis  
45 was identified. An intraoperative unilateral epididymectomy was performed. In  
46 terms of laboratory findings, the cyto-bacteriological examination of urine was  
47 negative for bacterial growth but showed elevated leukocyturia ( $37.10^3$  /ml) and  
48 haematuria ( $13.10^3$  /ml).

49 Further testing using a molecular biology assay (GenXpert®) on the  
50 epididymectomy specimen confirmed the presence of *Mycobacterium*  
51 *tuberculosis*, without any indication of rifampicin resistance. However, a urine  
52 test specifically for *Mycobacterium tuberculosis* was not conducted. The  
53 histopathological examination of the epididymectomy specimen supported the  
54 bacteriological diagnosis, revealing caseous-follicular granulomatous  
55 epididymitis consistent with a tubercular origin. Consequently, the patient was  
56 initiated on the recommended anti-bacillary treatment.

57 **Discussion:**

58 Tuberculosis continues to be a <sup>4</sup> significant global public health issue. The World  
59 Health Organization (WHO) reports that more than 10 million people contract  
60 active tuberculosis each year, with 1.6 million deaths resulting from the disease  
61 [3]. Urogenital tuberculosis, considered as a severe form of tuberculosis,  
62 accounts for 20 to 73% of all extrapulmonary cases [1, 4].<sup>3</sup> The epididymis  
63 (22%) and testis are the most commonly affected organs, followed by the  
64 bladder, ureter, prostate, and penis.

65 In most cases, involvement is unilateral [2, 5]. This was our patient's case. While  
66 the average age of onset is typically between 38 and 40 years [2], TB can affect  
67 individuals of all age groups, including children. Risk factors such as  
68 immunosuppression, smoking, and alcoholism increase the susceptibility to

69 urogenital tuberculosis. Our patient has two risk factors related to smoking and  
70 immunosuppressive therapy.

71 The manifestations of urogenital tuberculosis can vary, with epididymitis [5, 6,  
72 7] or orchi-epididymitis [8] being common presentations. However, it can also  
73 be revealed by the presence of a seemingly ordinary hydrocele [5, 7, 9, 10] or  
74 present as a pseudotumoral appearance. In our patient's case, the hydrocele was  
75 the presenting symptom that led to the consultation.

76 Several theories have been proposed regarding the route of infection of the  
77 epididymis in tuberculosis. While the ductal route, where the infection ascends  
78 along the path of sperm from the prostate and seminal vesicles, has been  
79 implicated, hematogenous dissemination may also be responsible for cases of  
80 tuberculous epididymitis without renal involvement or *Mycobacterium*  
81 *tuberculosis* detection in the urine. Lymphatic involvement is also recognized  
82 [2]. In rare instances, tuberculous epididymitis can result from venereal  
83 transmission.

84 Due to the variability of clinical symptoms, diagnosing urogenital tuberculosis  
85 can be challenging [11]. Therefore, identifying additional diagnostic clues is  
86 important. Biologically, hematuria and/or leukocyturia are commonly observed  
87 without the isolation of any specific bacteria on standard culture media. Our  
88 patient exhibited significant leukocyturia and hematuria ( $37.10^3/\text{ml}$  and  $13.10^3$   
89  $^3/\text{ml}$ , respectively) in sterile urine.

90 In our case, molecular biology testing provided a definitive diagnosis. This  
91 diagnostic tool is highly valuable for paucibacillary specimens due to its high  
92 sensitivity, specificity, and rapid results, facilitating prompt management and  
93 preventing complications [12]. While the most common complication of  
94 epididymal tuberculosis is the potential impact on fertility due to seminal tract  
95 obstruction or testicular necrosis caused by caseous necrosis [5, 11], it can also  
96 lead to severe, life-threatening complications such as psoas abscess and  
97 Addison's disease [13].

98 In terms of treatment, the national tuberculosis protocol involving rifampicin,  
99 isoniazid, pyrazinamide, and streptomycin was followed. Some authors have  
100 reported success with treatment involving rifampicin injection into the testicular  
101 vagina, enabling higher concentrations to be achieved in contact with the lesion  
102 [11].

103

104

105 **Conclusion:**

106 The case presented highlights the importance of considering tuberculous  
107 epididymitis as a possible diagnosis when encountering a hydrocele, particularly  
108 in an endemic setting. It emphasizes the value of employing molecular biology  
109 testing for such cases, enabling accurate detection of *Mycobacterium*  
110 *tuberculosis*.

111 **Ethical approval**

112 Written informed consent was obtained from the patient to publish this report in  
113 accordance with the journal's patient consent policy.

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117 **Author contributions**

118 Yassine Ben Lahlou: Conceptualization 8b73531f-db56-4914-9502-  
119 4cc4d4d8ed73.

120 Zakaria Laanibi, Zakaria Malihy: Data curation f93e0f44-f2a4-4ea1-824a-  
121 4e0853b05c9d.

122 Elmostapha Benaissa, Adil Maleb: Methodology f21e2be9-4e38-4ab7-8691-  
123 d6f72d5d5843.

124 Mariama Chadli, Mostafa Elouennass: Validation 4b1bf348-faf2-4fc4-bd66-  
125 4cd3a84b9d44.

126 **Conflict of interest statement**

127 The author(s) declare that there are no conflicts of interest.

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