



Case report of inguinal metastasis of epididymal malignant mesothelioma

Du Lihuan¹ · Zhang Yong¹ · Zhang Nan¹ · Zheng Yichun¹ · Chen Jimin¹

Received: 22 October 2018 / Accepted: 24 November 2018 / Published online: 3 December 2018
© Springer Nature B.V. 2018

Editor,

Malignant mesothelioma of epididymis is an extremely rare tumor, and its diagnosis and therapy are still not well established [1]. We herein describe a case of a 58-year-old male with epididymal malignant mesothelioma.

The patient presented with left intrascrotal pain and epididymal enlargement. Scrotal ultrasound revealed a 2-cm hypoechoic mass in the epididymal end (Fig. 1a). He was primarily diagnosed with left epididymal cyst, and underwent left hydrocelectomy and epididymectomy. Pathology consultant with UCLA revealed malignant mesothelioma with low differentiated epithelioid morphology. The architecture was microacinar, nest, adenoid, and solid, with monstrous nuclei and prominent nucleoli (Fig. 1b). Immunostaining was focally positive for keratin5/6, keratin7, and calretinin, while strong positive for WT1 and pankeratin. Staining for CEA, PSA, AFP, CD30, HCG, Ber-EP4, CD117, PALP, inhibin a, vimentin, P40, SMA, S-100, and CDX2 were negative.

PET-CT was performed and no evidence of local lymphadenopathy or distant metastasis was found. The patient then underwent a left radical orchiectomy, and final pathology revealed residual mesothelioma with negative margin (Fig. 1c). Over the course of 10 months, evaluation with urinary ultrasound showed a solid mass with 2.2 cm in size in left inguinal region. The patient underwent a resection of left inguinal mass. The pathological examination demonstrated inguinal metastasis arising from malignant mesothelioma (Fig. 1d).

Regular follow-up revealed no recurrence and metastasis for 12 months post-operatively.

As a rare neoplasm, epididymal malignant mesothelioma has no specific clinical manifestations. Patients frequently mimic common scrotal diseases such as a progressive enlarging hydrocele which poses a diagnostic challenge for clinicians [2]. Scrotal ultrasonography can be used for detection of the echogenicity of the hydrocele, and is the mainstay of primary diagnosis for malignant mesothelioma which is usually characterized by a hypochoic hydrocele with hyper-echogenicity at the periphery [3]. Computed tomography is helpful in staging and metastasis of tumor, particularly in evaluation of retroperitoneal lymph nodes [4].

Histologically, it is frequently presented with variable features such as microacinar, nest, adenoid, or solid structure. Immunohistochemically, it shows strong positivity for WT1 and pankeratin, focal positivity for keratin5/6, keratin7, and calretinin as indicated in our case. However, it should be pointed that these above markers are not specific, as they may also be expressed in other cancers [2].

Radical orchiectomy is the primary treatment choice for this disease, as simple excision of epididymis may lead to positive surgical margin and recurrence [5]. In our case, we performed a second radical orchiectomy without lymph node dissection as the disease was localized. The usefulness of adjuvant radiotherapy and chemotherapy has not yet been clearly determined due to the limited number of reported cases [5]. As in our case, the patient did not receive radiotherapy or chemotherapy, as he was surgically treated at an early stage.

Approximately 10% patients develop recurrence after radical orchiectomy, with a median survival of 24 months [5]. In our case, the patient showed a left inguinal metastasis 10 months after left radical orchiectomy, and then underwent a radical excision of the lesion. The patient was stable and exhibited no evidence of local recurrence or distant metastasis at the time of the present report.

Du Lihuan and Zhang Yong have contributed equally to this work.

✉ Du Lihuan
dlh1984@zju.edu.cn

¹ Department of Urology, The Second Affiliated Hospital of Zhejiang University, NO. 88 Jiefang Road, 310009 Hangzhou, China

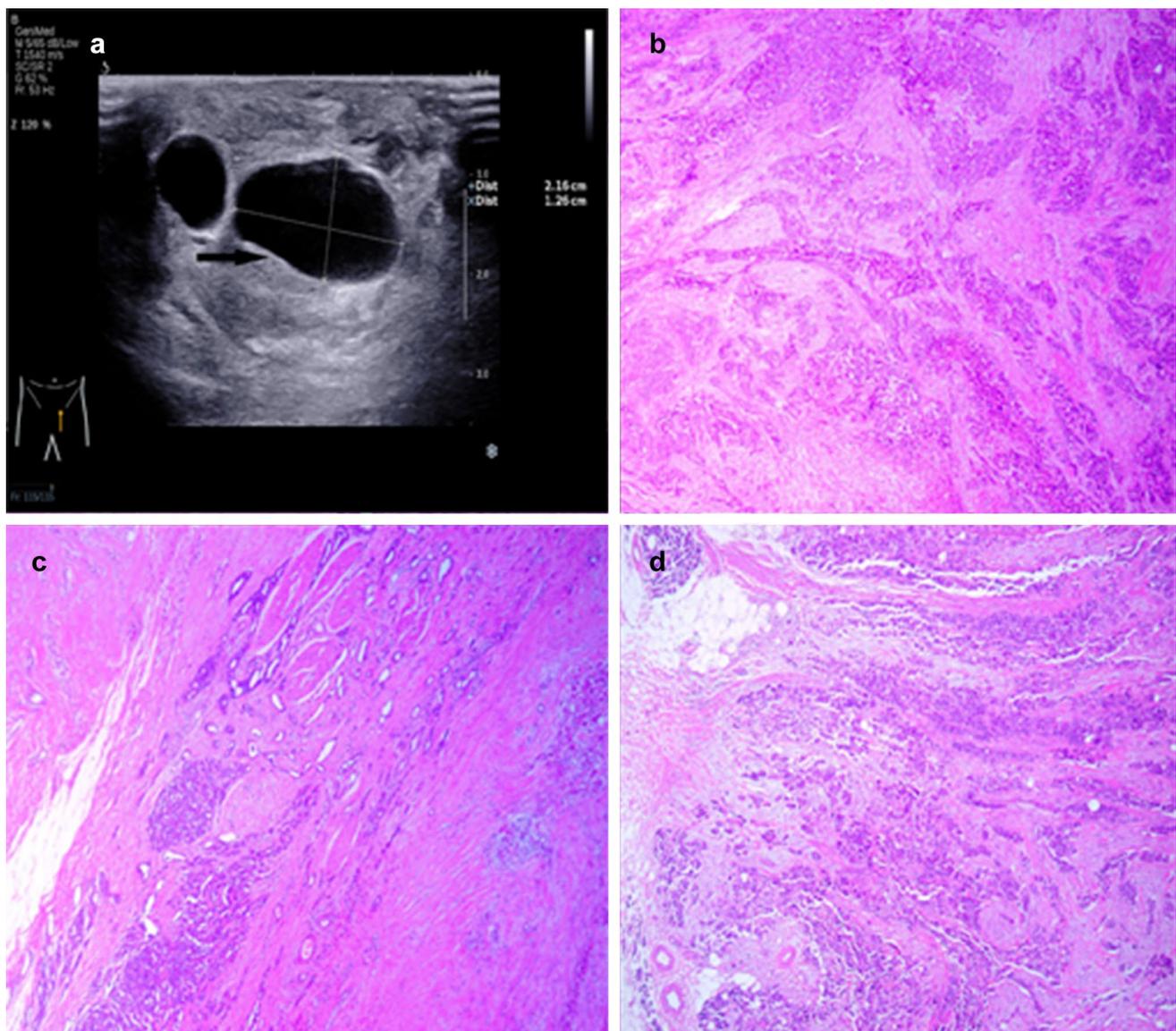


Fig. 1 Ultrasound and histological images for epididymal malignant mesothelioma. **a** Scrotal ultrasound. Epididymal hydrocele marked with black arrows. **b** Malignant mesothelioma in the epididymis with low differentiated epithelioid morphology ($\times 60$). **c** Residual epididy-

mal malignant mesothelioma ($\times 60$). **d** Left inguinal metastasis of epididymal malignant mesothelioma ($\times 60$). Light microscopy of the formalin-fixed, paraffin-embedded tissue using hematoxylin and eosin stain in **b, c, d**

Funding This study was supported by the Public welfare project of Zhejiang Science and Technology Department (2016C33154), Zhejiang Natural Science Foundation (LY18H050002), and Fujian Natural Science Foundation (2018J05124).

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Robinson JC, DeFranco JN, Hollowell CM (2014) Malignant mesothelioma of the epididymis: a case report. *Curr Urol* 7:217–218
2. Yen CH, Lee CT, Su CJ, et al (2012) Malignant mesothelioma of the tunica vaginalis testis: a malignancy associated with recurrent epididymitis? *World J Surg Oncol* 10:238
3. Fields JM, Russell SA, Andrew SM (1992) Case report: ultrasound appearances of a malignant mesothelioma of the tunica vaginalis testis. *Clin Radiol* 46:128–130
4. Garcia de Jalon A, Gil P, Azua-Romeo J et al (2003) Malignant mesothelioma of the tunica vaginalis. Report of a case without risk factors and review of the literature. *Int Urol Nephrol* 35:59–62
5. Plas E, Riedl CR, Pfluger H (1998) Malignant mesothelioma of the tunica vaginalis testis: review of the literature and assessment of prognostic parameters. *Cancer* 83:2437–2446