

Resolution of bilateral testicular masses after viral infection

Fernandino L. Vilson^a, Steven Y. Lin^b, Bogdana Schmidt^{a,*}

^a Stanford University School of Medicine, Department of Urology, Stanford, CA, USA

^b Stanford University School of Medicine, Department of Medicine, Division of Primary Care and Population Health, Stanford, CA, USA

ARTICLE INFO

Keywords:

Viral orchitis
Benign testicular neoplasm
Orchiectomy

ABSTRACT

We present a case of viral-associated orchitis with bilateral testicular masses initially concerning for malignancy on scrotal ultrasound. In this case, patient underwent observation after discussing management options. Literature search revealed two cases of benign testicular mass after viral infection that was managed with radical orchiectomy. The previously documented case allowed for appropriate counseling to delay surgical intervention and allow for spontaneous resolution of the viral-induced testicular masses.

Introduction

Bilateral testicular masses are rare, comprising up to 1% of all testicular masses. Viral infections are an uncommon cause of orchitis, and in rare instances, may also mimic testicular neoplasms. We report a case of bilateral testicular masses after viral illness in an otherwise healthy adult male that was managed non-operatively with sonographic follow-up.

Case presentation

A 41-year-old male presented to the emergency room with 1-day history of bilateral testicular pain, right greater than left, presumed to be induced from forceful coughing. Pain was intermittent, sharp, 10/10 in severity, and associated with left scrotal swelling. Five days prior to presentation he was diagnosed with hand-foot-and-mouth disease, which he contracted from his 2-year-old son. He initially presented to an urgent care center 3 days prior with sore throat and fever, which was managed conservatively. He denied any trauma and history of prior episodes of orchialgia. On physical exam, both testicles were mildly tender to palpation, soft, with no palpable intra or extratesticular masses. Tumor markers - alpha fetoprotein, beta human chorionic gonadotropin - were within normal limits. Lactate dehydrogenase was only mildly elevated. Scrotal ultrasound demonstrated a single right heterogeneous intratesticular mass measuring 2 cm and two left testicular masses: the first was heterogeneous and measured 1.8 cm within the superior pole, while the second was hypoechoic and found along the periphery measuring 1.2 cm (Fig. 1A and B). Both testicles demonstrated mild hyperemia. Given this atypical presentation and a concern for

malignancy, CT imaging of the abdomen and pelvis was obtained but showed no acute findings or evidence of metastatic disease.

The rarity of bilateral testicular masses was discussed with the patient, who was initially counseled numerous options including left radical orchiectomy (given number of lesions), testicular biopsy, right partial orchiectomy, and observation. Literature review revealed two cases of 36-year-old males with testicular masses after a similar viral illness that were managed with radical orchiectomies; final pathology from those cases were benign.¹ After shared decision making with the patient, the patient decided to proceed with observation and close follow-up with serial ultrasounds.

At 10-day follow-up, the patient reported improved testicular pain and near-resolution of his viral prodrome. Repeat scrotal ultrasound demonstrated normal bilateral vascularity and decreased size of intratesticular lesions with new hypoechoic lesions thought to favor multifocal orchitis rather than malignancy (Fig. 1C and D). Repeat scrotal ultrasound at 21 days revealed evolution of bilateral intratesticular masses which were decreased in size with changes in echogenicity (Fig. 1E and F). Finally, at 38-day follow-up, scrotal ultrasound demonstrated decreased bilateral intratesticular lesions with almost complete resolution (Fig. 2).

Discussion

Viral orchitis is an uncommon cause of testicular pain and swelling. Coxsackievirus, which causes hand-foot-and-mouth disease, is a type of enterovirus that has been previously documented to be a cause of viral-induced orchitis.^{2,3} Rarely viral orchitis can mimic testicular neoplasms.⁴ Unfortunately, when testicular masses are present, they are

* Corresponding author. Department of Urology, Grant S-287, 300 Pasteur Drive, Stanford, CA, 94305, USA.

E-mail address: Bogdana@stanford.edu (B. Schmidt).

<https://doi.org/10.1016/j.eucr.2020.101388>

Received 30 July 2020; Received in revised form 13 August 2020; Accepted 17 August 2020

Available online 20 August 2020

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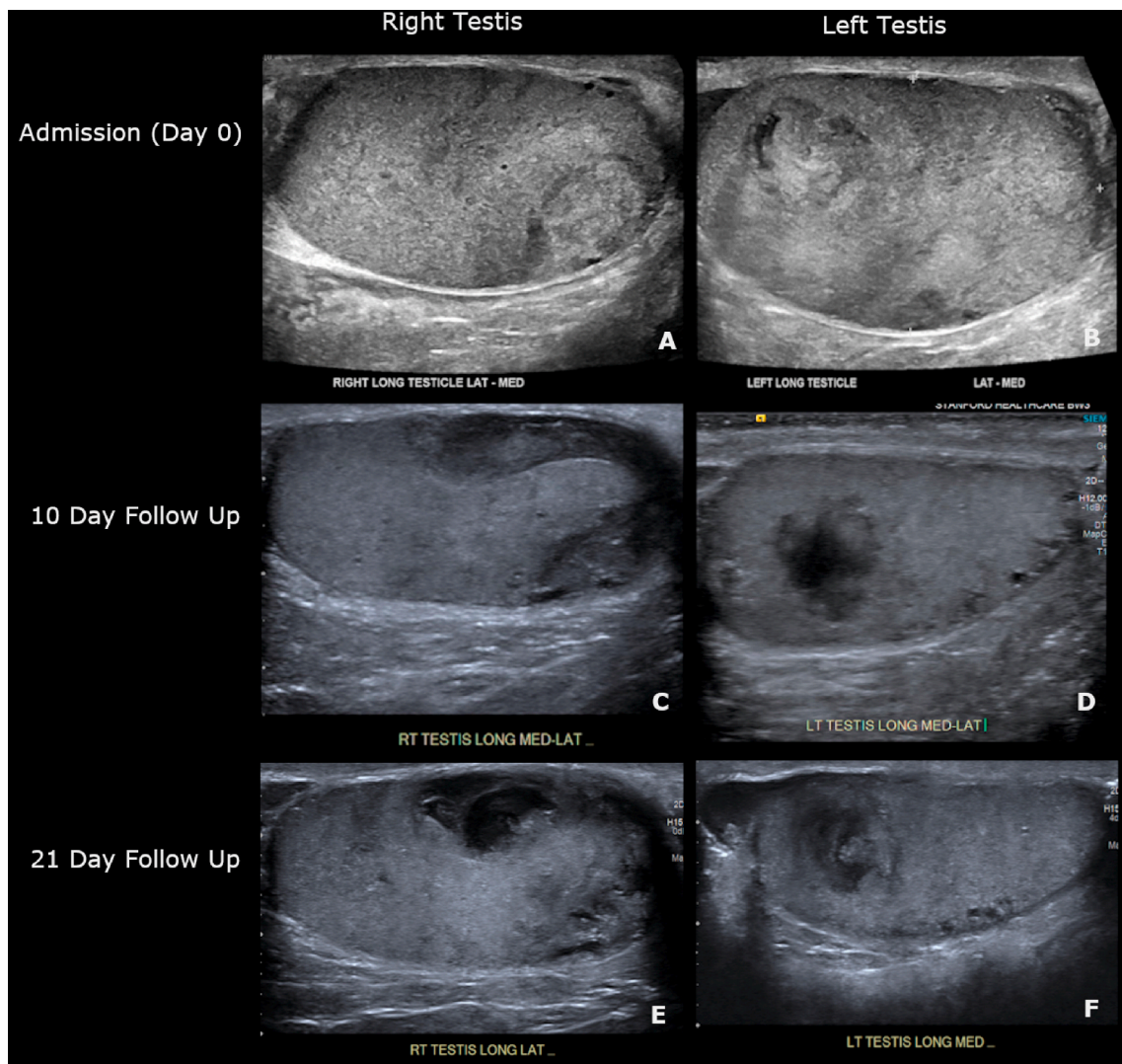


Fig. 1. 21 day follow up of bilateral intratesticular lesions. Right intratesticular testicle changes over 21 days (A,C, E). Left testicular changes over 21 days (B,D,F).

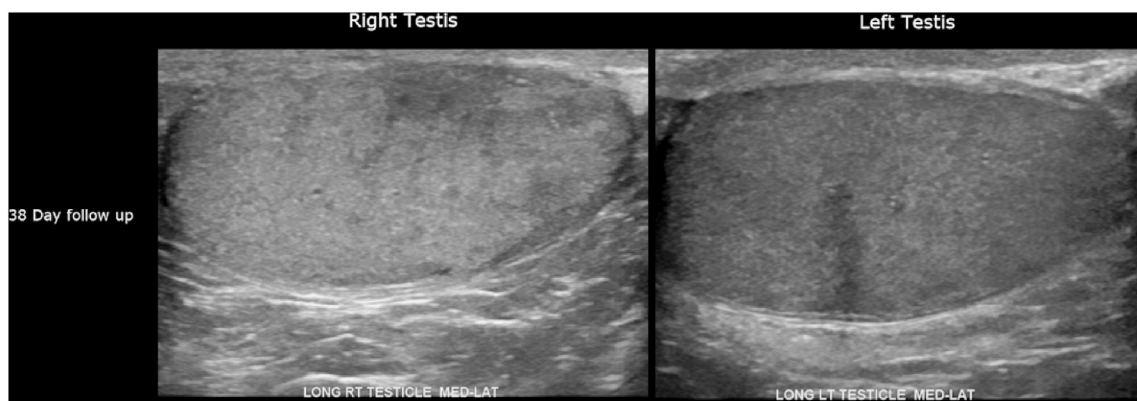


Fig. 2. Almost complete resolution of bilateral intratesticular lesions at 38 days.

often presumed malignant and managed with radical orchiectomy. Our case presents a rare finding of bilateral testicular masses on ultrasound after viral illness, successfully managed conservatively. Bilateral testicular tumors is a rare event with a limited differential including neoplastic causes such as lymphoma and metastases, and nonneoplastic causes such as testicular adrenal rest hyperplasia tumors (TARTs). The

imaging appearance presented in our case was not typical of lymphoma and clinical history along with negative cross-sectional imaging did not provide a primary source to assume metastases. TARTs are an important consideration in the differential for bilateral testicular lesions. However, aside from bilateral presentation, TARTs are typically located along the mediastinum, are well defined, hypoechoic, lobulated lesions that are

typically seen in the setting of congenital adrenal hyperplasia.⁵

Hurt et al. recently presented two cases of unilateral viral-induced testis masses which were managed with radical orchiectomies.¹ After discussing management options, their patients ultimately chose surgery given the level of anxiety over potential malignancy; fortunately, pathology from both cases were negative for malignancy, but resulted in removal of the testicle. Their experience allowed us to engage in appropriate counseling and shared decision making with our patient, who chose conservative management and had spontaneous resolution of his masses, avoiding surgery altogether. Our case is extremely rare not only due to the presence of bilateral testicular masses from viral illness, but also due to the decision to forgo surgery with eventual resolution of the masses.

Conclusion

Observation of testicular masses is not recommended given the risk of malignancy and metastatic spread. However, when present in the

setting of a viral illness, observation with close sonographic follow-up may be considered in selected cases as part of a shared decision making process with the patient, which may relieve anxiety and avoid unnecessary surgery.

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