Isolated relapse of a lymphoblastic leukemia T cell precursor in the epididymis

Emin Ozan Akay¹, Engin Kaya¹, Giray Ergin¹, Turgay Ebiloğlu¹, Koray Erten¹, Mehmet Salih Deveci², Oral Nevruz³, İbrahim Yaşar Özgök¹

ABSTRACT

A 41-year-old man who had otherwise asymptomatic right scrotal swelling presented to our urology clinic. He had been diagnosed with T cell precursor lymphoblastic leukemia/lymphoma 2 years previously. On examination, his right epididymis was enlarged. A regular, homogeneous, slightly hypoechoic solid mass was observed at the right caput epididymis. This testicular mass measured approximately 7x11x12 mm. Leukemia and lymphoma appear in a variety of locations throughout the body, but an isolated relapse involving the epididymis is rare. Epididymectomy was performed which naturally removed the patient's right-sided sperm duct system. Especially in the younger age group epididymal masses can lead to fertility problems.

Key words: Epididymis; leukemia; lymphoma.

Introduction

Acute lymphoblastic leukemia (ALL) is one of the frequently observed malignancies, and it is encountered as β -cell (85%), and T-cell ALL (15%).^[1] T-cell acute lymphoblastic leukemia (T-ALL) emerges as a result of supranormal proliferation of immature T cells, and constitutes 10-15% of pediatric, and 25% of the adult cases with ALL. T-cell precursor lymphoblastic leukemia is an aggressive type of ALL. It carries high risk for treatment failure. It is treated with chemotherapy protocols used for ALL.^[2]

Case representation

A 41-year-old male patient was followed up in the hematology clinics. He had undergone bone marrow biopsy 2 years ago, and diagnosed as T-cell precursor lymphoblastic leukemia.

He received chemotherapy, and 12 sessions of radiotherapy, and presented to our clinic during his follow-ups because of painless scrotal swelling. Physical examination revealed left testis, and epididymidis with normal dimen-

sions, and location. In the right epididymis, a painless swelling which can be separated from the testis with distinct contours was detected on palpation. On scrotal ultrasonograms dimensions of the right (18x27x49 ml;12.1 mL), and the left (34x30x48; 18 mL) testes were determined. Besides, a slightly hypoechoic, solid mass with dimensions of 7x11x12 mm and smooth contours was detected in the right epididymis. On Doppler ultrasonographic examination hypervascularity was found on the periphery of the lesion. Its appearance was consistent with leukemic infiltration of the right epididymis. Levels of beta-HCG, alpha-fetoprotein, and lactate dehydrogenase were within normal limits.

After informed consent of the patient was obtained, through inguinal incision the surgical field was explored. Excisional biopsy material sent to the histopathological examination during the operation was consistent with leukemic infiltration, and epididymectomy was performed (Figure 1). Excisional epididymal pathology was reported as T-cell precursor lymphoblastic leukemia with strong CD8, weak CD5, and negative CD20, CD79a expressions (Figure 2a, b). The mass stained strongly with Ki-67 and

¹Department of Urology, Gülhane Military Medical Academy, Ankara, Turkey

²Department of Pathology, Gülhane Military Medical Academy, Ankara, Turkey

³Department of Hematology, Gülhane Military Medical Academy, Ankara, Turkey

Submitted:
18.07.2012

Accepted:
13.02.2013

Correspondence:
Engin Kaya
Department of Urology, Gülhane Military Medical Academy, 06018 Ankara, Turkey
Phone: +90 505 706 01 75
E-mail: drenginkaya@yahoo.com

©Copyright 2013 by Turkish Association of Urology

Available online at
www.turkishjournalofurology.com

Figure 1. Epididymectomy material

terminal deoxynucleotidyl transferase (TdT). During the postoperative period of 12 months, any recurrence was not detected in the patient who received chemotherapy.

Discussion

Extramedullary histopathological recurrence rates secondary to ALL in the genitourinary system have been reported as 5-8 percent. Effective application of chemotherapy has reduced testicular relapse down to 0-3 percent.^[3-5] Isolated relapse of ALL in the epididymis is extremely rare. As reported in the literature, patients with isolated relapse of ALL in the epididymis present with painful scrotal emergency similar to epididymitis or testicular torsion or as is the case with our patient, painless swelling resembling a tumoral mass can be observed.^[5-7]

Mazzu et al.^[8] observed that hypervascularity was associated with every case of testicular leukemic or lymphoblastic infiltration. Diffuse hypervascularity detected on ultrasonograms supports leukemic or lymphoblastic infiltration.

In similar conditions which may emerge in the adulthood, as a point to remember, surgical intervention may adversely affect fertility. In patients with epididymal painless mass lesions detected in cases with a history of leukemia, and lymphoma, the probability of relapse should be taken into consideration.

Informed Consent: Written informed consent was obtained from patients who participated in this case.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - E.O.A., E.K.; Design - E.K.; Supervision - İ.Y.Ö.; Funding - E.K., T.E.; Materials - E.K., G.E.; Data Collection and/or Processing - E.K., E.O.A., O.N., K.E., M.S.D.; Analysis and/or Interpretation - E.K., İ.Y.Ö., M.S.D.; Literature Review - E.K., T.E., G.E.

Figure 2a. Epididymal leukemic infiltration (HE x200)

Figure 2b. Leukemic cells stained with terminal deoxynucleotidyl transferase (TdT)

References

1. Zhang J, Ding L, Holmfeldt L, Wu G, Heatley SL, Payne-Turner D, et al. The genetic basis of early T-cell precursor acute lymphoblastic leukaemia. *Nature* 2012;481:157-63.
2. Coustan-Smith E, Mullighan CG, Onciu M, Behm FG, Raimondi SC, Pei D, et al. Early T-cell precursor leukaemia: a subtype of very high-risk acute lymphoblastic leukaemia. *Lancet Oncol* 2009;10:147-56.
3. Stoffel T, Nesbit M, Levitt S. Extramedullary involvement of the testis in childhood leukemia. *Cancer* 1975;35:1203.
4. Gutjahr P, Humpl T. Testicular lymphoblastic leukemia/lymphoma. *World J Urol* 1995;13:230-2.

5. Bourne AE, Wayment RO, Tarter TH, Hemmer P. Isolated relapse of acute lymphoblastic leukemia in the epididymis: a rare sanctuary site. *J Clin Oncol* 2010;28:327-8.
6. Mehta H, Thirumala S, Palestro C. Leukemic infiltration mimicking epididymo-orchitis on scrotal scintigraphy. *Clin Nucl Med* 1997;22:721-2.
7. Falda M, Frea B, Paolino F, Tasso M. Leukaemic epididymitis in acute lymphoblastic leukaemia. *Haematologica* 1984;69:764-5.
8. Mazzu D, Jeffrey RB Jr, Ralls PW. Lymphoma and leukemia involving the testicles: findings on gray-scale and color Doppler sonography. *AJR Am J Roentgenol* 1995;164:645-7.