International Archives of Medical Research 12:2 (2020) 39-45

CASE REPORT

Intrauterine Testiscular Torsion: A Case Report

Geliş Tarihi: 15.12.2020, Kabul Tarihi: 22.12.2020

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Abstract

Neonatal testicular torsion, especially intrauterine testicular torsion (IUTT) is so rare. In testicular torsion, hard testicular tissue is felt in physical examination. Doppler ultrasonography is a sensitive method in diagnosis. Testicle can be rescued in only 0-5% cases even with urgent surgery exploration in IUTT treatment. In this paper, a newborn case with IUTT, who was administered orchiectomy on the first day of life, is presented.

In the first examination of healthy term baby were detected big bilateral scrotums. The skin of right scrotum was darker than normal, hard mass in scrotum was felt. Right testicle was harder than contralateral testicle and placed higher. Paratesticular structures were not exactly distinguished. Other examination findings were normal. In scrotal doppler ultrasonography, right testicle was seemed heterogeneous with decreased parenchymal echo. There is no bloodstain in right testicle. The torsion was first considered and operated. Torsion was detwisted, orchiectomy was applied, fixation was applied to contralateral testicle. The patient was discharged on 2 day after the operation.

Testis torsions seen in postnatal period must be discussed even though they are admitted as surgically urgent due to the recovery of testis. The torsion cases being generally healthy, term and normal-weight babies decreases the risks.

Keywords: *Intrauterine testicular torsion, orchiectomy, testicular fixation, newborn, surgery.*

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Introduction

Neonatal testicular torsion, divided in two as those formed in intrauterine period and the ones that occur in post birth period, has a prevalence of 6,1/ 100000 [1], accounting for 10-12% of childhood testicular torsions [2]. Intrauterine torsion is, on the other hand, a rather rare condition and was first identified in 1897. Although its etiology has not been entirely enlightened, hyperactive cremasteric reflex, non- provision of sufficient in-utero fixation of tunica vaginalitis to scrotal wall, hard delivery, breech delivery, big baby, and multiple pregnancy are stated to be the factors carrying risk [3, 4]. Unlike intravaginal torsions seen in big child, it is generally of extravaginal character. Only 0-5% of the testicles torsioned before birth can be rescued [2]. Yet, it should be kept in mind that in cases with NTT, shortening of the time between diagnosis and operation is of vital significance in terms of rescuing the testicle [5, 6].

In this paper, a newborn on whom orchiectomy and contralateral testicle fixation was applied because of intrauterine testicular torsion was proposed, and the importance of carrying out a detailed genital organ examination at the first physical examination, urgent surgery operation and contralateral testicular fixation have been discussed.

Case

The first and fifth apgar scores of the baby, born in 38th week with C-section from the first pregnancy of the mother at the age of 25, were 8 and 9. There was not a different pathological follow-up report in the mother during pregnancy except for hypertension that came up in the period close to delivery. In the physical examination, baby's weight was 3070 g, height was 49 cm, head circumference was 34,2 cm and body temperature was 36 ºC. As seen in Picture 1 shot after the permission was taken by the family, his bilateral scrotums were big and in the left scrotum was hydrocele. Left testicle was 8x8mm. The skin of right scrotum was darker than normal and 15x15mm hard mass in the scrotum was felt (Figure 1). Right testicle was harder than the contralateral testicle and placed higher. Paratesticular structures were not exactly distinguished. Other physical examination findings were natural. In preoperative laboratory examination, complete blood count, blood glucose, blood gas, and liver and kidney functions were normal. In scrotal Doppler ultrasonography, it was detected that both testicles were in scrotum, right testicle was 9x14 mm, left testicle was 7x10mm. Parenchymal echogenity and bloodstain of left testicular was normal, and there was minimal fluid measuring 3,7mm in the left peritesticular region. Right testicular seemed heterogeneous with decreased parenchymal echo and there was anechoic cyctic

space (Figure 2). There was not bloodstain in the right testicular. In accordance with Doppler ultrasonography findings, torsion was first considered. In the patient operated at the fourth hour of his life, right spermatic cord was determined to make three complete turns. Torsion was detwisted and testicle was covered by gauge bandage with physiological saline solution, waiting for 25 minutes, but testicular bloodstain was observed not to recover (Figure 3). Hematoma and necrotic tissue was discharged from testicular capsule, and orchiectomy was applied and fixation was applied to contrlateral testicle. The patient on whom no complication was observed after the operation was discharged on the second day after the operation.

Figure 1. *Color change on the right scrotum skin*

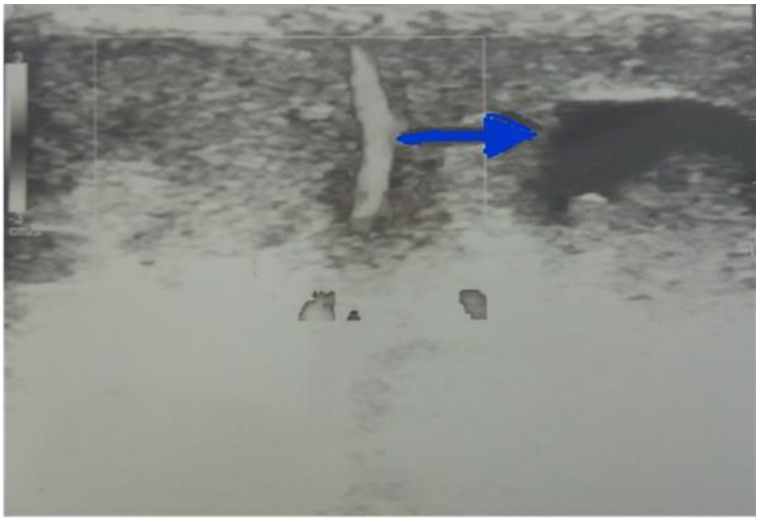

Figure 2. *Decreased heterogeneous appearance in the righ testicle parenchymal echo on ultrasonography and anechoic cyctic space (blue arrow) in the center.*

Figure 3. *The gross appearance of the testicle. Hemoragical and necrotic appearance of the outer skin draws attention.*

Discussion

72% of NTTs in literature is intrauterine and the rest have been diagnosed in the fist month [2, 3]. Our patient was accepted to be inutero testicle torsion because a mass in the testicle was found in the first examination after birth. Unlike intravaginal torsions seen in adolescents and adults, 2/3of newborn torsions are extravaginal [7]. In a review studying neonatal torsion cases, it is reported that 90,6% of them are extravaginal, 5,4% are intravaginal; 48% are on the left, 44% are on the right and 8% of them are bilateral [8]. In intravaginal torsion, the testicle twisted in tunica vaginalitis (bell clapper deformity) and this predisposing anomaly frequently exists in the other testicle. In extravaginal torsion, testicular and tunica structures twist together around spermatic cord axis. Finding spermatic cord in a spiral position during surgery supports this opinion [2]. Spiral cycles are generally in two turns and can go up to a complete turn [2]. This condition shows that bots testicles are under risk [2]. In our patient three complete turns were detected.

Etiology of IUTT has not been entirely enlightened, yet it has been stated that the situations increasing intrauterine stress such as hyperactive cremaster reflex, insufficient attachment of tunica vaginalitis on scrotum, hard delivery, breech delivery, big baby, and multiple pregnancy are factors creating risk [4, 9, 10, 11]. We did not find out any apparent risk factor. In a study made by

Kaye et al., vaginal delivery was also shown as a risk factor and 90%of the cases were born through vaginal delivery [2]. Counterlateral hyrocele is often determined in IUTT cases [3]. This can be a reactional situation depending on ischemic attacks caused by torsions as they can be coincidental phenomena [7]. In 11 case-series by Al-salem [5], counterlateral hyrdocele determined in 6 cases (60%) was present in our patient as well.

Doppler ultrasonography is a sensitive method in diagnosis. Although there can be enlarged, heterogeneous-avascular normal volume testicle on ultrasonography, small hyperecogenic testicle can be seen [12]. The existence of enlarged testis makes us think that it developed previously in two conditions in which torsion is more acute. It can be indicated that the bloodstaining of testis gets reduced with nuclear scintigrapy [2, 13]; yet, the sensitivity of scintigraphy is remarkably low during the first age [1].

There is no agreement on pathophysiology of testis torsion, necessity and timing of surgery and management of contralateral testis. Immediate or late scrotal exploration can be made by doing or without doing orchiectomy; in addition, "contralateral" orchiopexy can be made or is not made. Leaving necrotic testis in its place in unilateral torsion can damage contralateral testis through antisperm antibody reproduction theoretically[2].

Testis torsions seen in postnatal period must be discussed even though they are admitted as surgically urgent due to the recovery of testis. Although there can be general risks depending on anesthesia, torsion cases being generally healthy, term and normal-weight babies decreases the risks. Early surgery enables exploration diagnosis to be clarified and other rare reasons. (benign and malign tumors, hematocele) to be excluded [5]. However, in bilateral torsion, urgent surgery is advised for the purpose of preserving the rest healthy testis tissue [2].

Unfortunately, testis cannot be recovered in most of the cases even with proper surgical exploration [1]. Intrauterine testicular torsion can take place in the period close to delivery or during the delivery. For this reason, testis tissue can be recovered even though it is intrauterine torsioned. Al-salem [5] stated that, in his series of 11 cases, three torsioned testicles can be preserved through urgent surgical operation. Olguner et al. [6] sai that they applied urgent surgery on their patients, who came with postnatal right scrotal swelling at the 28th hour and on whom they determined bilateral hypoperfusion on technetium 99m pertechnetate scintigraphy, and rescued non-necrotic testis by detorsioning it. In a review, it was stated that the rescue rate of testis was 8,96% in newborn testis

torsions but this rate rose up to 21,7% in those applied urgent surgeries [8].

Three ways to follow as a general strategy are not operating contralateral, retarded orchiopexy or making orchiopexy in urgent conditions [14]. Considering the fact that insufficient attachment of tunica vaginalitis to scrotum causes extravaginal torsion, the first 1-2 month period in which this attachment can be ensured is risky in terms of torsion [3, 15]. Bilateral torsion is rare but triggering factors have come to be emphasized with the recently increasing case reports. Therefore, it is common to apply fixation on the healthy side in order to prevent bilateral testis loss [2, 5]. In our case unilateral orchiectomy and contralateral fixation was applied.

Because testis has a chance of being rescued, even though little, newborn testis torsion must be kept in mind in the distinguishing diagnosis of newborn scrotal masses, and genital organ examination must be made carefully without any retard. Also, there is need for studies revealing whether there is any damage in solitary testis in adolescence or adulthood in the children left with single testis after torsion.

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