

Perinatal testicular torsion - Not an uncommon entity

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ABSTRACT

Perinatal testicular torsion is a rare condition with an incidence of 1 in 7500 live births. 70% are prenatal and 30% postnatal. Postnatal torsion presents as an acute scrotum, whereas prenatal torsion may be usually missed as it is a non-tender hard mass. Management of prenatal torsion is controversial. We are reporting three such case series presenting within a period of 1 year. Prenatal testicular torsion is usually missed as it is asymptomatic and later presents as cryptorchid. Careful postnatal physical examination and documentation is essential, as a missed case can later present as cryptorchid and may lead to medicolegal issues. In torsion in the immediate perinatal period, the testis may be salvaged if promptly operated.

Key words: *Perinatal, Prenatal, Testicular, Torsion*

Perinatal testicular torsion is a rare condition with an incidence of 1 in 7500 live births [1]. Among them, 70% occurs in prenatal period and 30% in the postnatal period. Postnatal torsion presents as an acute scrotum, whereas prenatal torsion may be usually missed or go undetected as it is a non-tender hard mass. Management of prenatal torsion is controversial. Careful postnatal physical examination and documentation is essential, as a missed case can later present as cryptorchid and may lead to medicolegal issues. We are reporting three case series of such patients presenting within a period of 1 year.

CASE REPORTS

Case 1

Term male baby 3.26 kg born to a 33-year-old G3P2L2 mother with gestational diabetes by normal vaginal delivery was presented. Asymptomatic baby on routine examination showed the right hemiscrotum darker with normal rugae. The right testis was hard, mobile, non-tender, and larger than the left (Fig. 1).

Ultrasonography (USG) of the scrotum with Doppler (Fig. 2) showed the right testis to be mildly enlarged, with peripheral calcification and no vascularity. The central hypoechoic area was showing infarction and necrosis. The left testis was normal. Scrotum on exploration showed the right testis atrophic with torsion. The right testis was removed and the left orchidopexy done.

Histopathology (Fig. 3) showed areas of hemorrhage and ischemic necrosis. Only outlines of seminiferous tubules with extravasated red blood cells seen. Spermatic cord and epididymis showed viable tissues.

Case 2

Term 3.4 kg baby born to a 25-year-old primi mother by normal delivery was presented. The right testis was hard, USG Doppler showed heterogeneous echo pattern with no vascularity (Fig. 4). The left testis was normal with the left-sided hydrocele. The right orchidectomy was done in the right testis as it was gangrenous (Fig. 5), and in the left testis, orchidopexy was done.

Case 3

Term 2.8 kg baby born to 28-year-old G2A1 mother by normal vaginal delivery was presented. The left testis was hard. USG Doppler showed heterogeneous echo pattern with no vascularity in the left testis (Fig. 6), and the right testis was normal. The left orchidectomy (Fig. 7) and right orchidopexy were done.

DISCUSSION

Testicular torsion was first described in 1840 by Delasiauve and reported in the newborn by Taylor in 1897 [2]. Prenatal torsion produces minimal or no discomfort and presents with only a few localized findings. Possible etiologies of perinatal torsion include difficult labor, breech presentation, large birth weight, an over-reactive cremasteric reflex, and multiparity. These factors potentially increase intrauterine pressure as well as pressure in the birth canal during parturition. Such pressures may stimulate a brisk cremasteric response in the setting of loose tunica-scrotal attachment. Usually, extravaginal testis, epididymis, and tunica vaginalis twist on the spermatic cord. The degree of torsion varies from 180° to more than 720°. The severity of torsion depends on the degree of twist. Prenatal testicular torsion may be unilateral or bilateral, and bilateral torsion



Figure 1: Scrotum and testis in Case 1 shows that the hyperpigmentation of the right side of scrotum and the right testis was hard, mobile, and larger than the left

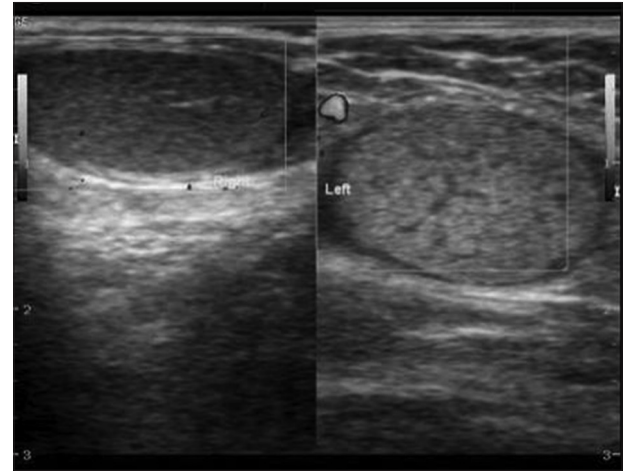


Figure 4: In Case 2, ultrasonography scrotum showing smaller right testis



Figure 2: Ultrasonography scrotum with Doppler of Case 1. The right testis mildly enlarged, with peripheral calcification and no vascularity. Central hypoechoic area showing infarction and necrosis; the left testis normal

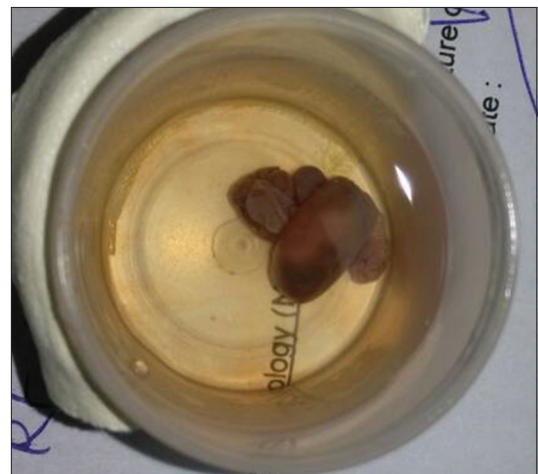


Figure 5: Atrophic testis in Case 2

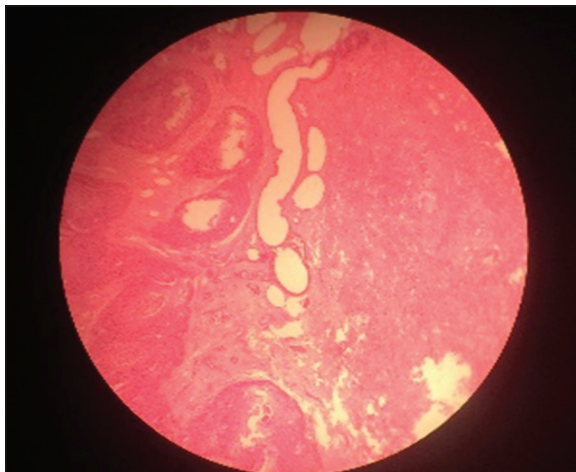


Figure 3: Microscopy of Case 1 showing areas of hemorrhage and ischemic necrosis with outlines of seminiferous tubules and extravasated red blood cells on H and E stain

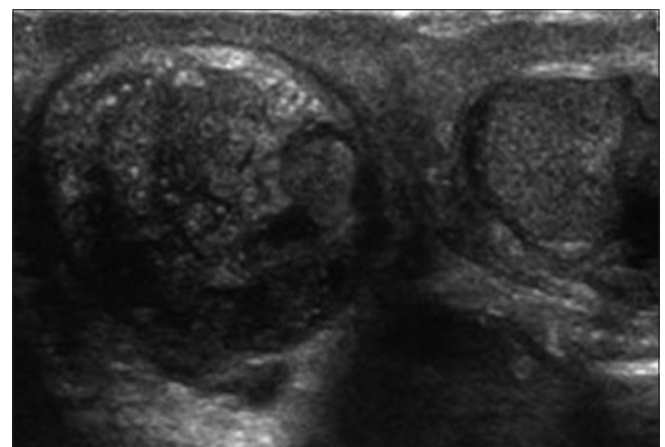


Figure 6: In Case 3, ultrasonography scrotum showing smaller and avascular left testis

can be synchronous (67%) or asynchronous (33%). Antenatal ultrasound is not that sensitive for such cases. A careful routine

postnatal physical examination can diagnose it [3]. Salvageability depends on the time elapsed since torsion.

Torsion in the prenatal period several weeks back presents as a regular, firm, painless scrotal mass, often in the upper part of the hemiscrotum, smaller than the contralateral normal testis, very much attached to the scrotal wall, without acute inflammatory signs, and it does not transmit the light. When torsion occurs in

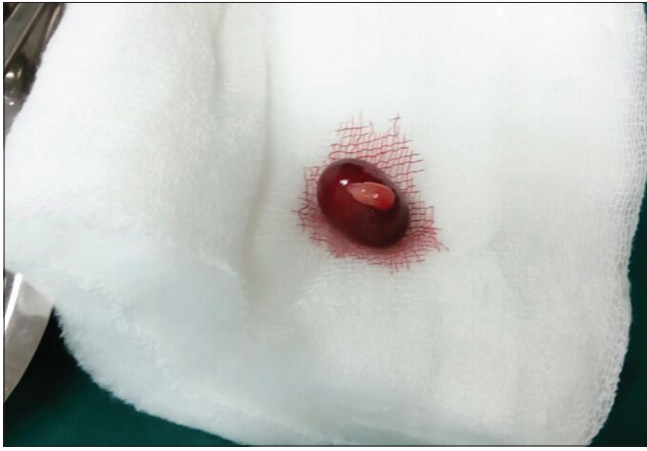


Figure 7: In Case 3, the left gangrenous testis

the prenatal period near birth (several days), a firm and painless scrotal mass, bigger or similar in size than the contralateral normal testis, is seen without acute inflammatory signs and it does not transmit light. Torsion in the prenatal period very near to birth (few days or several hours) will present with acute inflammatory scrotal signs: A painful, enlarged, bluish, or reddish hemiscrotum and an enlarged and sometimes elevated testis - not transmitting light, thickened, and painful cord. Doppler USG is 89.9% sensitive, 98.8% specific; USG alone is equivocal. USG will show enlarged, heterogeneous testis, and thickened tunica albuginea with rim-like hyperechoic reflections (calcifications) at the transitional zone between testis and tunica albuginea in case of prenatal torsion. The hypoechoic central area may also be evident which shows necrosis. A short duration of torsion is characterized by mixed echogenicity. Prolonged intrauterine torsion shows calcification and a hypervascular ring of tunica with a hypodense center.

Technetium-99 m pertechnetate of dose 5 mCi is the agent of choice in such cases. Typically, immediate radionuclide angiograms are obtained, with subsequent static images as well. In the healthy patient, images show symmetric flow to the testes, and delayed images show uniformly symmetric activity. The appearance of testicular torsion on scintigraphy depends on the chronicity. In acute torsion (usually <7 h): Blood flow may range from normal to absent on the involved side, and a nubbin sign may be visible. The nubbin sign is a focal medial projection from the iliac artery representing the reactive increased flow in the spermatic cord vessels terminating at the site of torsion. Static images show photogenic area in the involved testis. In the subacute and late phases of torsion (missed torsion), often increased flow to the affected hemiscrotum through the pudenda artery with a photogenic testis and a rim of surrounding increased

activity on static images - described as a rim, doughnut, or bull's eye sign [4,5].

In all the 3 cases reported here, scrotal exploration was done in immediate postnatal period, but testes were not salvageable. For long-standing intrauterine torsion, there is no urgency; these neonates should be operated on electively when the child is in optimal clinical status to confirm the suspected diagnosis, to remove the affected testis, and to explore the contralateral normal one. If torsion occurs in the prenatal period very near to birth or in the postnatal period within the 1st month of life immediate exploration should be carried out. Early surgical exploration may detect asynchronous torsion and allows its correction. Whether contralateral orchidopexy is justified is controversial. Postnatal torsion will be presenting with considerable tenderness and swelling of a previously normal testicle. Testicular salvage rate in acute torsion: 85–97% – when operated within 6 h, 55–85% @ 6–12 h, 20–80% @ 12–24 h, and <10% if >24 h [3,4].

CONCLUSION

Prenatal testicular torsion is not so rare but usually missed as it is asymptomatic and later presents as cryptorchid. Careful postnatal physical examination and documentation is essential, especially in avoiding future medicolegal complications. Also note that in torsion in the immediate prenatal period, the testis may be salvaged if promptly operated.

REFERENCES

- Gatti JM, Pettiford J. The Acute Scrotum. In: Holcomb GW 3rd, Murphy JP, Ostlie DJ, editor. *Ashcraft's Pediatric Surgery*. 6th ed. Amsterdam: Elsevier Health Sciences; 2014. p. 702-4.
- Taylor MR. A case of testicle strangulated at birth: Castration, recovery. *Br Med J* 1897;1:458.
- Lissauer T. Physical Examination of newborn. In: Martin RJ, Fanaroff AA, Walsh MC, editor. *Fanaroff and Martin's Neonatal-Perinatal Medicine*. 10th ed. Philadelphia, Saunders; 2014. p. 396.
- Riaz-Ul-Haq M, Mahdi DE, Elhassan EU. Neonatal testicular torsion; a review article. *Iran J Pediatr* 2012;22:281-9.
- Callewaert PR, Van Kerrebroeck P. New insights into perinatal testicular torsion. *Eur J Pediatr* 2010;169:705-12.

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