

# Torsion of the cryptorchid testicle: A patent emergency, a latent diagnosis

## Summary

The torsion of the spermatic cord is an extreme functional emergency in urology which can engage the functional prognosis of the twisted testicle. Although the diagnosis of testicular torsion is quite easy and must be evoked first in front of a painful acute scrotum, that of a torsion on cryptorchid testicle is more delicate. We will discuss through a two clinical cases the epidemiological, physiopathological, clinical and prognostic aspect after torsion surgery of the cryptorchid testicle.

**Keywords:** testis, torsion, cryptorchidism, spermatic cord

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## Observations

**Case 1:** An 18-year-old patient with a history of vacuity of the right hemiscrotum at birth, who consulted the emergency room of the Ibn Sina hospital in Rabat for right inguinal pain that had been evolving for a week. Clinical examination revealed an anxious patient with a soft abdomen, tenderness to palpation of the right inguinal region which was erythematous and edematous and an empty ipsilateral hemi-scrotum. The hernial orifices were free and the rest of the clinical examination was normal.

**Case 2:** An 18-year-old, also, with cerebral palsy. Who consulted the emergency room following the appearance of digestive symptoms for 2 days, including vomiting and left inguinal pain, which his mother had noticed when changing his diapers. The clinical examination found a bedridden patient, with a soft abdomen, a sensitivity, which he expressed by grimaces, to the palpation of the left inguinal region which was oedematous (Figure 1), with an empty ipsilateral hemi-scrotum. The hernial orifices were free.



**Figure 1** Asymmetry of the inguinal region.

In view of these 2 suggestive clinical cases and after having eliminated a strangulated inguinal hernia, the patients were taken to the operating room without delay. The surgical exploration found a necrotic testis without any stigma of vitality (Figure 2, 3). The orchiectomy associated with the orchidopexy of the contralateral testis, were performed at the same time. The postoperative course was simple.



**Figure 2A-C** Intraoperative aspect of the right testis.



**Figure 3** Intraoperative aspect of the left testis.

## Discussion

Cryptorchidism or non descent of the testis is a congenital anomaly of testicular migration resulting in a defect of descent of the testis into the scrotum. The first cryptorchid torsion was described in 1840 by Delasiauve et al.<sup>1</sup>

About 75% of cryptorchid testis are located at the inguinal level.<sup>2</sup> It is the most frequent congenital anomaly of the boy, its incidence is estimated between 2% and 5% of newborn males<sup>3</sup> of which 1.2-1.8% will persist at 1 year of life, which means a possibility of postnatal descent and 10% of bilaterality.<sup>4</sup> The median age of occurrence of cryptorchid testis torsion is 9 years (0.58 to 80 years).<sup>5</sup>

Although the incidence and relative risk of cryptorchid testis torsion is unknown, several studies have suggested a 10-fold increased risk of torsion in this population<sup>6</sup> with an incidence of 21% reported by Johnson.<sup>7</sup> The pathophysiological mechanism of torsion of the cryptorchid testis remains poorly understood but two theories have been proposed. The first is that of abnormal abdominal contractions or spasms of the cremaster muscle which will be at the origin of torsion of the spermatic cord. This theory is supported by a 53.8% incidence of cryptorchidism observed in patients with cerebral palsy. The second theory explains the torsion of the cryptorchid testis by the increase in its size, observed in case of tumor development on this testis.<sup>5</sup> In our 2 cases, one was suffering from cerebral palsy supporting the first theory.

The clinical presentation of torsion of the cryptorchid testis in inguinal location is often easy especially in case of acute inguinal pain associated with localized swelling and vacuity of the ipsilateral scrotum on clinical examination. This clinical presentation can be more delicate and confusing in case of a higher located testis simulating a surgical abdomen.

Several authors have described an association of inguinal hernia with cryptorchidism, according to Ilkul et al.,<sup>5</sup> and Mlay et al.,<sup>8</sup> this association is respectively of the order of 7 to 17.5%. In our cases, the patients presented late, at our hospital, with a classical clinical presentation without hernia association.

The torsion of the cryptorchid testis is an extreme emergency which requires exploratory surgery on the only clinical suspicion, this exploratory surgery has the advantage of being diagnostic and therapeutic. Complementary examinations are not systematic in the presence of clinical suspicion and are reduced to an ultrasound coupled with inguinal doppler.

In this indication, inguinal Doppler ultrasound has a sensitivity of 77% and a specificity of 90%.<sup>9</sup> In addition, Doppler ultrasound has the advantage of being available in the emergency department, particularly in our context, but it is an operator-dependent examination. Doppler ultrasound allows to study the arterial flow of the twisted testis and to characterize its echogenicity. However, Slijper et al. reported two false negatives of cryptorchid testis torsions diagnosed as strangulated hernias,<sup>10</sup> hence the need to explore any inguinal pain associated with ipsilateral scrotal vacuity.

Technetium Tc-99m scintigraphy, CT scan and MRI have been proposed by several authors but their indications are limited in emergency situations and can even be misleading.<sup>4,10</sup> In our cases, imaging was not used because of the typical clinical presentation.

Historically, the salvage rate of the cryptorchid testis is 10%, which is a very low rate compared to the 70% rate observed in case of torsion produced on a testis in normal position and this within 12 hours after the onset of the symptomatology.<sup>9</sup>

The prognosis depends on the time of surgery and the degree of torsion, because Sertoli cell lesions are present from the 4th hour after torsion, hence the need to proceed immediately on clinical suspicion alone. Cimador et al. studied 3 parameters to help in the therapeutic decision: a delay of more than 10 hours, absence of blood flow on the Doppler ultrasound and absence of bleeding from the albuginea 10 minutes after its incision. The presence of these parameters leads to orchietomy.<sup>11</sup>

A new approach has recently appeared, described by Rouzrokh et al. who demonstrated the interest of a re-evaluation re-exploration 48 hours after the emergency surgical exploration in the evaluation of testicular viability, thus allowing orchidopexy to be performed in 63% of patients included in this study. Only 9% of this group had secondary orchidectomy for testicular atrophy after a median follow-up of 3 years.<sup>12</sup> Furthermore, orchietomy remains the treatment of choice in the majority of cases, especially in adults.<sup>4</sup>

Orchidopexy of the contralateral testis is still classically recommended by several authors when orchietomy has been performed despite its low level of evidence.<sup>4,6</sup> In our cases, seen late, the orchietomy was performed immediately and we opted for an orchidopexy of the contralateral testis.

## Conclusion

The torsion of the cryptorchid testis is an extreme and rare urological emergency, which often remains unrecognized in our context, hence the need to examine the scrotum in any child or adolescent presenting with abdominal or inguinal pain. Cold management of the cryptorchid testis remains the best option, thus allowing to watch out for unpredictable functional and degenerative complications.

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## Conflicts of interest

Authors declare that there is no conflict of interest.

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