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Inflammation and infection

Acute scrotum – Torsion of the third testicle!

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Introduction

Polyorchidism is a rare congenital abnormality defined by the presence of more than 2 testes. The majority of cases are asymptomatic although in extremely rare cases polyorchidism can present with acute scrotal pain secondary to torsion (see Fig. 1).

Case report

A 29 year-old man presented to our emergency department with sudden onset of severe left testicular pain that lasted for 9 h. He did not have any urinary symptoms. His most recent testing for sexually transmitted infections was negative two months ago and he had not been sexually active since then. He also did not have any per urethral discharge. He is otherwise fit and healthy with no regular medications. An ultrasound was performed urgently, which revealed two left-sided testicles, an accessory testis with flow and a main testis without flow. An urgent scrotal exploration was performed which confirmed the left sided testicular torsion and the presence of a smaller inferior left testicle of 2cm in size, with a separate spermatic cord. The twisted testicle was untwisted and surprisingly viable after the initial onset of pain over 6 h previously. Fixation was performed on both left-sided testicles and the right-sided testicle. The patient recovered uneventfully following the operation.

Discussion

Polyorchidism (supernumerary testis) is a rare congenital condition in which more than two testes develop within the genital tract. There are approximately 200 cases reported in the literature to date.[1] Triorchidism is most frequently described, although exceedingly rare cases of four and five testes in a single individual have been reported.

During regular embryological formation the testes develop from the genital ridge on the medial aspect of the mesonephric duct whilst the epididymis and vas arise from the mesonephric duct itself. Although the exact aetiology of polyorchidism is unclear, it is thought that a division of the genital ridge and mesonephric duct allows for separate distinct testes to develop. Variation in polyorchidism is thought to arise from the position and orientation of the division. Leung described a classification system based on the site of likely embryological division (Type 1–4).[2] Type 1 has no accompanying epididymis or vas to the supernumerary testis. In type 2, a common vas exists but the supernumerary testis has its own vas. Type 3 has a shared epididymis and vas, whilst type 4 displays a complete duplication of the testes, epididymis and vas. The most common form of cryptorchidism (Type 3) involves only the genital ridge and hence both testes share a common epididymis and vas. The left side is embryologically more prone to division with 75% of polyorchidism occurring on the left.[3]

Supernumerary testes are most commonly situated within the scrotal sac (68%) although non-descended inguinal (23%) and abdominal (9%) positions also occur.[4] Most supernumerary testes remain asymptomatic and are only found on investigation for other conditions or symptoms. Cryptorchidism (40%), hernia (30%), torsion (15%), hydrocele (9%) and malignancy (6%) are the most common abnormalities associated with supernumerary testis. Cryptorchidism is the most important risk factor for malignancy in a supernumerary testis, although malignancy can occur regardless of position. Malignancy in polyorchidism occurs at a higher rate of approximately 4–7%.[3]

The most common presenting symptom of testicular torsion in polyorchidism is pain. More often the torsion occurs in the supernumerary testis as this is thought to be more mobile. This is contrasted in the presented case where the non-accessory testis underwent torsion. Management of uncomplicated polyorchidism is most commonly surveillance as all but those without a vas deferens or epididymis (Type 1) may contribute to fertility.[4] If the supernumerary testis appears viable and without concern for malignancy then every effort should be made to preserve it. In the event of torsion in the setting of polyorchidism the management principles remain the same for that of regular torsion. Ultrasound may help categorise if torsion is present, however should not delay surgical exploration.[5] Timely detorsion and bilateral fixation of all testes is the suggested management.

Conclusion

Acute scrotal pain caused by torsion of a supernumerary testicle is rare. When found, similar principles of orchidopexy of all testicles should be followed. Good surgical outcomes can be achieved.

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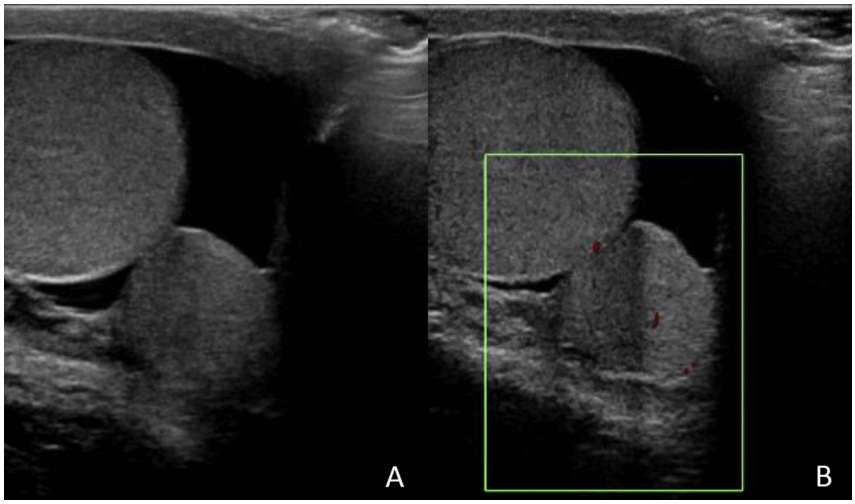

Fig. 1. A) Ultrasound findings showing polyorchidism on the left scrotum, with a larger superior testicle and a smaller inferior testicle. B) Duplex ultrasound showing blood flow to the inferior testicle but no flow to the superior testicle.

Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.eucr.2018.07.010.

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