Thames Valley and Wessex
SURGERY IN CHILDREN
Operational Delivery Network

Best Practice Recommendations

PAEDIATRIC TESTICULAR TORSION

SETTING	Thames Valley & Wessex Surgery in Children Operational Delivery Network (TVW SIC ODN)
FOR STAFF	Staff involved in the pathways for children (under 16 years) undergoing surgery for testicular torsion.
PATIENTS	Children who have acute scrotal pain in organisations across the Thames Valley & Wessex SIC ODN region.

Guidance:

Summary

Testicular torsion occurs when a testicle twists on its axis, cutting off the blood supply. When this happens, the testicle will die within around six hours if there is a complete vascular obstruction, (which is not necessarily within 6 hours of onset of pain) unless the blood flow can be restored by emergency surgery to untwist it. Torsion has an annual incidence of approximately 3.8 per 100,000 males younger than 18 years.[4,5] The consequence of non or delayed surgical management includes testicular loss and impaired fertility, which can still occur despite apparently successful initial operative management.[1,3] Treatment is time-critical scrotal exploration, described as NCEPOD Code 2 (Urgent).[10]

Presentation

Health promotion should support early recognition by children, young people and their parents/carers of acute scrotal pain potentially being caused by testicular torsion which requires urgent treatment: http://www.testicularhealth.info/index.html [16]

Not all boys with acute scrotal pain have a torsion; torsion accounts for approximately a third of acute scrotal presentations,[9] but unless there is a definite alternative diagnosis, all boys presenting with the following signs and symptoms need emergency surgery without delay (within an hour of presentation to hospital).[1] Boys typically present with acute (sudden) scrotal pain which may be intermittent, or continuous once established, and tenderness accompanied by local signs of swelling, and skin changes, as well as potential systemic symptoms such as nausea and vomiting.[2,3]

Boys may present via ED walk in, local Ambulance Service, GP referral or NHS 111 advice. Ambulance Services, local GPs and NHS 111 should all have a paediatric torsion pathway which ensures urgent referral to a local hospital which meets national standards in providing children's surgery. [13]

Assessment, Diagnosis and Treatment

1. Assessment by a surgical decision maker should be made within 60-minutes of arrival at the Emergency Department. [7]

2. Patient history should include any previous episodes of scrotal pain. Physical examination should encompass the abdomen, inguinal region and scrotum, and a urine dip should be performed. However, exploratory scrotal surgery is required in many cases to determine the cause of 'acute scrotum'.[3] Imaging is not recommended as it does not reliably diagnose or exclude testicular torsion and delays treatment.[11,12] The use of the TWIST scoring tool can be considered where clinical teams feel it may aid with diagnosis.[15] A TWIST score of 5 or over mandates a scrotal exploration in a child or young person of any age in the absence of an alternative diagnosis that would significantly change management (see Appendix). [7]

3. Where testicular torsion is suspected, surgery should not be delayed for an ultrasound to be undertaken. Ultrasound is indicated if there is a strong suspicion of an alternative diagnosis, or if pain has been present for ≥ 48 hours.[7]

4. There are two possible treatment routes, depending on the state of the testicle at the time of surgery:
   orchidopexy – if the testicle can be saved, both testicles are fixed to prevent recurrent torsion. Three-point fixation is recommended.
   orchidectomy – if the affected testicle is considered irretrievable, it is surgically removed, and the contralateral testis fixed to prevent torsion.[1]

5. If torsion is not found on exploration and the testes are normal, then no further action is recommended. If however, the index of suspicion for torsion was high, then bilateral testicular fixation should be performed. If on examination there is evidence of 'bell-clapper' testes, then fixation is also recommended. [14]

6. Due to the time-critical element of testicular torsion, best practice recommendation is that wherever possible, boys of 2 years and over should not be transferred between providers with paediatric care capacity, unless co-morbidity requires specialist paediatric intervention.

7. Where local clinician confidence or competence is a limiting factor, this age limit can be increased to a maximum of 5 years of age. However, any providers with a minimum age limit > 2 years must ensure 24/7 consistency in their pathway and avoid variation in practice e.g between different clinicians, day of the week, time of day, etc. All providers with a minimum age limit of > 2 years should have an agreed, and regularly reviewed Action Plan that aims to address gaps in clinical training or provision in order to meet national standards and minimise patient transfers to other providers in the future.

8. If, following review by a senior decision maker, a transfer to another provider is indicated due to co-morbidity or age <2 years old, please discuss directly with their on-call Paediatric Surgery/Urology team as per local protocol. This is a time critical transfer (Level 0 or 1). To facilitate the patient's transfer, the STOPP tool should be used and made available to the receiving hospital on arrival: stopp_tool_v4_sept_2025_-_final.pdf

Emergency Surgery

1. Children should receive surgery in a safe and appropriate paediatric environment.[3] Paediatric scrotal surgery can be performed by either a general or urology surgeon since the training requirements are mandated for CCT (Certificate of Completion of Training).[1]

2. Following the decision to operate, prompt arrangements should be made for general anaesthesia and surgery; surgery should occur within 1 hour of the decision to operate.[1]

3. The anaesthesia should not be delayed for an unfasted patient and other elective operative procedures may require halting.

4. According to surgical preference, either a midline scrotal incision, or a transverse hemi-scrotal incision gives access to the testicle.

5. The tunica vaginalis surrounding the testicle is opened and unless the testicular torsion is longstanding and the testicle totally black, the testicle is detorted.

6. If the testicle remains healthy and viable after detorsion, it should be secured with the tunica everted, preferably with three-point suture fixation.

7. If the testicle is non-viable after 10 minutes of observation after detorsion, it should be removed and sent to pathology.

8. When testicular appendages are present, they should be removed.

9. If viability remains uncertain after 10 minutes of observation, the testicle should be retained, and the parents and patient informed of the risk of atrophy.

10. When torsion is confirmed, the contra-lateral testis should also be secured either in a Dartos pouch or with three-point suture fixation to prevent possible torsion.

11. Local anaesthetic at the appropriate dose should be used to infiltrate the wound.

12. Careful haemostasis is important to prevent post-operative haematoma in the lax expandable scrotal tissue.

13. Closure of the subcutaneous Dartos muscle using absorbable sutures is encouraged to reduce the risk of wound dehiscence.

14. The skin is closed with a rapidly absorbable suture or tissue glue.

Post Operative Care

1. Children should be observed for a minimum of 2 hours after their procedure prior to discharge (starting from the time the child leaves theatre). If a torsion has necessitated an orchidectomy a longer period of recovery may be required to manage post-operative pain.
2. Appropriate analgesia should be administered during the operative period and in recovery to ensure appropriate timely discharge. Dosing should be weight-based according to BNFC post-operative pain management guidance.[6]

Discharge

1. Appropriate analgesia and written instructions should be given to the parents at discharge. This must highlight the importance of giving regular paracetamol and ibuprofen (if not contraindicated) for at least 3 days post-operatively. (11)
2. Give parent information:

   Where torsion with a viable testis was diagnosed - Provide patient/carer with plan in the event of post-operative complications. Wound care advice. Follow up at 3-6 months to assess the testicle.
   In addition, where torsion required orchidectomy - Provide information regarding long-term outcomes (including fertility, prosthesis insertion and development).

Follow up

1. The patient who has undergone an orchidopexy should be followed up to assess for delayed testicular atrophy.(7)
2. The patient who has undergone an orchidectomy should have a PIFU appointment (or a GP re-referral made) to discuss future prosthesis options.(7)
3. Local psychology services should be available to children and parents if required.(7)

Audit

1. As part of the TVW SIC ODN, centres should participate in audits of their acute scrotum pathway for children, using these recommendations to identify opportunities to improve safety, quality, and performance.

2. Each trust should monitor key performance and outcome measures such as time from presentation to scrotal exploration (100% of patients achieving this in <3 hours), coding quality, testicular salvage rate, number of patients transferred to another centre, reasons for transfer, alternative diagnoses, operative/post-operative complications, re-intervention rate, and length of stay should be considered at local and network level. These are all available within the Model Health System.

Appendix: TWIST Score

The Testicular Workup for Ischaemia and Suspected Torsion (TWIST) score[17] is a validated tool to assess the risk of testicular torsion. It use is recommended to support a structured assessment of a child or young person with testicular pain.[7]

Criteria	Score
Testicular Swelling	2
Hard Testis	2
Absent cremasteric reflex	1
Nausea or vomiting	1
High riding testis	1

TWIST Score	Risk of testicular torsion	
0-2	Low	A TWIST score of 0-4 does not completely exclude testicular torsion[8]
3-4	Intermediate	
5-7	High	A TWIST score of 5 or over in a child with less than 48 hours of pain mandates a scrotal exploration in a child or young person of any age in the absence of an alternative diagnosis that would significantly change management [8]

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Authorising Body

This document was ratified by members of the TVW Paediatric Surgery Clinical Forum and approved at the TVW SiC Board on 9th June 2026. For further information regarding this group please contact the TVW SIC ODN team on the details below.

Queries & Contact

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