Trust Guideline for the Management of Acute Scrotal Pain in Childhood

A clinical guideline recommended for use

For Use in:	Children's Assessment Unit (CAU), Buxton Ward, Accident & Emergency (A&E), Anaesthetics, Operating Theatres
By:	All Medical & Nursing staff
For:	Male children under the age of 16 years
Division responsible for document:	Women and Children's Division
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This guideline has been approved by the Trust's Clinical Guidelines Assessment Panel as an aid to the diagnosis and management of relevant patients and clinical circumstances. Not every patient or situation fits neatly into a standard guideline scenario and the guideline must be interpreted and applied in practice in the light of prevailing clinical circumstances, the diagnostic and treatment options available and the professional judgement, knowledge and expertise of relevant clinicians. It is advised that the rationale for any departure from relevant guidance should be documented in the patient's case notes.

The Trust's guidelines are made publicly available as part of the collective endeavour to continuously improve the quality of healthcare through sharing medical experience and knowledge. The Trust accepts no responsibility for any misunderstanding or misapplication of this document.

Version and Document Control:

Version Number	Date of Update	Change Description	Author
4.2	28/04/2021	Reviewed – no changes	Mr Ashish Minocha

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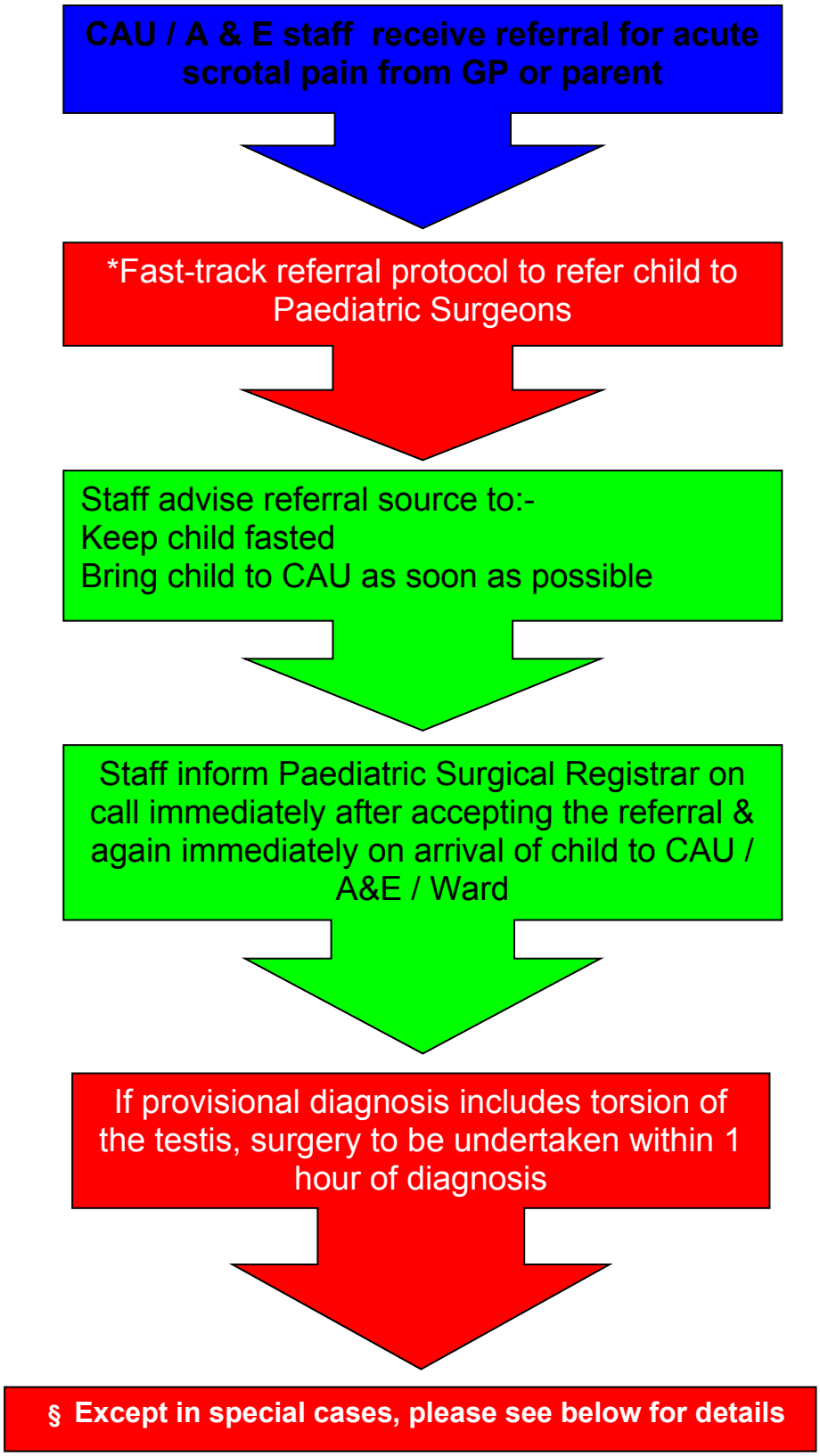
Printed copies of this document may not be up to date. Please check the hospital intranet for the latest version and destroy all previous versions

Quick reference guideline



* Fast-Track Protocol

(Attached at the end of this document) – To be printed, filled and attached to the notes of the patient at the time of referral.

Objective of Guideline

To provide guidance for optimal management of boys with acute scrotal pain.

Rationale for the Recommendation

The guidelines were formulated following the audit of the management of acute scrotal pain within the Paediatric Surgical Unit of the Norfolk and Norwich University Hospital. The audit reviewed such cases which underwent exploration between October 2002 and September 2005 and highlighted significant delay between arrival of the child at CAU and surgery, partly due to delay in the review by a surgeon capable of deciding whether surgery was mandated.

These guidelines are based on evidence-based practice as determined from literature review. **A Fast-track referral protocol was introduced in the A & E in order to reduce the average waiting time. Thereby children with acute scrotal pain can be directed to the Paediatric Surgical team without having to wait in the A & E for an assessment.**

An audit was performed over a year from Jan 2011 to Jan 2012 to check adherence to the protocol and its impact on our standard of care. This audit demonstrated that the average waiting times in the A & E reduced to half from 124 minutes to 60 minutes.

Broad recommendations

All boys under the age of 16 years with painful scrotum are to be referred to the Children's Assessment Unit (CAU) and arrangements made to transfer the child to the CAU immediately. Those referred to A & E should also be advised to attend CAU immediately. If the patient has already arrived in A & E the child may be triaged by the A & E nurse and transferred to CAU using the fast-track template attached below.

The on call paediatric surgical SHO / registrar should be informed immediately by staff on CAU or A & E once a referral has been received, and again immediately on arrival of the child to CAU or A & E. The registrar should review the child within 30 minutes of arrival at CAU / or A & E.

If the on-call paediatric surgical registrar is unable to see the child within 30 minutes and no other paediatric surgical registrar or Consultant is able to assess the child, the case should immediately be discussed with the on-call Consultant to ensure a management plan is reached within 30 minutes of arrival of the child to the CAU or A & E.

Urgent scrotal exploration should take place within one hour of a provisional diagnosis of acute testicular torsion being made as this condition is classified as CEPOD Group 1 (urgent condition requiring surgery within 1 hour).

Aetiology

Acute scrotal pain in children could arise from a variety of causes, some of which may coexist. These causes include infection, (epididymitis, orchitis and epididymorchitis) trauma, twisting or torsion of the testis, torsion of an appendage of the testis, idiopathic scrotal oedema, incarcerated inguinal hernia and Henoch-Schonlein purpura (1).

Clinical Presentation

- **Symptoms –** Pain is the commonest presenting symptom, and, it may start suddenly or be of gradual onset. The child may also complain of difficulty in passing urine, lower abdominal pain, nausea and vomiting.
- **Signs –** The child may be in obvious discomfort, have an unusual gait or be reluctant to move. The scrotal region is usually very tender and may be red and swollen. There may also be a high riding testicle, absence of cremasteric reflex, a focal blue-dot at the upper pole of the testis, diffuse blue discoloration of the hemiscrotum or a reactive hydrocele. A high temperature may also be observed (1).

Investigations

A urine sample should be obtained as soon as possible and a dipstix test performed. The urine sample may be sent for microbiological tests at the discretion of the reviewing surgeon. At surgery, a microbiology swab may be taken at the discretion of the operating surgeon if infection is thought to be present.

Management

Every boy with acute scrotal pain should be reviewed urgently by a paediatric surgical registrar or consultant. Quick and directed history taking is essential. A history of previous transient scrotal pain is significant.

Testicular loss from infarction can occur after as little as 2 hours of onset of symptoms (1). A delay in treatment can result in orchiectomy, and has been associated with reduced fertility (2). Thus surgical intervention should ideally take within one hour and acute scrotal pain should be treated as torsion of the testis until proven otherwise.

Radioisotope scans and Doppler ultrasonography are not part of the initial management of acute scrotal pain in many centres (1, 4). This is because it may contribute to delay in treatment with unacceptable consequences. Moreover, in obese boys and when the testicular volume is about 2 ml, the diagnostic accuracy of these tests is low resulting in limited clinical benefit.

Follow up

Testicular atrophy may result following torsion of the testis if infarction has occurred during the episode. This may be obvious at the time of surgery when the testis is removed and the contralateral testis is fixed. However, testicular infarction may not be evident at surgery and would manifest later as a reduction in the volume of that testicle usually associated with a change in testicular texture as fibrosis sets in. Testicular atrophy is usually clinically evident by 4 weeks (5, 6). Follow up assessment should therefore take place no sooner than 6 weeks after surgery. This allows inflammatory changes to settle, the wound to heal and any atrophic changes to become evident.

§ Special Situations

a. Where the duration of symptoms is 48 hours or more, the emergency surgery need not follow the 1 hour rule.

b. When on examination, the patient has become symptom free and there are no signs of an acute episode of torsion of testis. If a diagnosis of a spontaneous detortion / intermittent detortion is made, the testis should be explored as soon as possible but need not be within 1 hour.

c. Neonatal torsion. This is an antenatal event and the testis is usually non-salvagable. Surgical exploration is indicated for fixation of the contralateral side. The indication/ timing of exploration to be decided by the consultant in charge.

Clinical Audit Standards derived from guideline

Time of referral call to CAU

Time of presentation or arrival of patient at CAU

Time of review by paediatric surgical registrar (if review undertaken by another member of the surgical team, reason given)

Time patient booked for surgery

Time of surgery

Outcome of surgery including definitive diagnosis and viability of testis

Status of testis at follow up review

Summary of development and consultation process undertaken before registration and dissemination

The authors listed above drafted the guidelines. It has been circulated to the departments of paediatric surgery and paediatric medicine (consultants, junior medical staff, nursing staff on Buxton Ward and CAU), Accident and Emergency consultants, paediatric anaesthetists and theatre co-ordinating staff for comments.

Distribution list/ dissemination method

Trust intranet, CAU, Buxton Ward, Accident and Emergency department, Operating theatres.

References/ source documents

1. Pediatric Surgery. O'Neill J A, Rowe MI, Grosfeld JL, Fonkalsrud EW, Coran AG. Fifth edition 1998; 1099-1101. Mobsy Publishers.

2. Testicular Torsion and Risk Factors for Orchiectomy. Mansbach JM, Forbes P, Peters C. Arch Pediatr Adolesc Med Dec. 2005; 159: 1167-1171
3. Clinical predictors for differential diagnosis of acute scrotum. Ciftci AO, Senocak ME, Tanyel FC, Buyukpamukcu N. Eur J Pediatr Surg. Oct. 2004; 14 (5): 333-8

4. The incidence and investigation of acute scrotal problems in children. McAndrew HF, Pemberton R, Kikiros CS, Gollow I. Pediatr Surg Int 2002; 18: 435-437

5. Testicular tissue bleeding as an indicator of gonadal salvageability in testicular torsion surgery. Arda IS, Ozyaylali I. BJU International 2001;87:89-92

6. Testicular torsion: Direction, degree, Duration and Disinformation Sessions AE, Rabinowitz R, Hulbert WC, Goldstein MM, Mevorach RA. The Journal of Urology Feb 2003; 169: 663-665

Fast-Track Referral Protocol For Acute Scrotum In Paediatric Patients

A

Patient Identifier label

	Yes	No
Age < 16 years		
Pain localised to groin / scrotum		
Swelling / discoloration testis / scrotum		
Associated hernia / hydrocele		
Analgesia given: Drugs _____ Patient weight _____kg Dose given _____	Observations: Temp _____ Pulse_____/min RR_____ BP _____ Sats_____%	

Patient should be referred **immediately** to **Paediatric Surgical SPR on call** –
Bleep 1047 or via switch if offsite.

Please inform CAU on extension 5774 and arrange for immediate transfer. Before transfer ensure complete set of observations including patient's weight. Urine dip and application of local anaesthetic cream is useful but should not delay transfer.

The patient can be fast-tracked directly by the nursing staff provided vitals are stable and there are no other co-morbidities.

Signature

Name of the referrer:

Position:

Bleep/Extension: