

Multi-incident analysis of testicular torsion clinical incidents in Queensland 2010–2015

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Background

- A clinical Incident is an unexpected event arising as an outcome of health care which causes or may cause unintended harm.⁽²⁾ Within Queensland, clinical incidents are categorised using a severity assessment code (SAC). Most serious cases resulting in death or permanent harm are categorised as SAC 1. The QPQC reviews all Queensland SAC 1 paediatric clinical incident reports to identify opportunities for prevention and health promotion and to share these opportunities statewide. Between 2010–2015, the QPQC identified a cluster of SAC 1 paediatric clinical incidents involving testicular torsion (TT).
- TT occurs when the spermatic cord, which carries blood vessels, twists, thereby compromising the blood supply to the testis.⁽³⁾ It is the most common paediatric emergency of the genitourinary tract, representing 0.3% of all paediatric emergency presentations.⁽⁴⁾ TT has been shown to have an incidence of 3.5 cases/100,000 person years in males under 25, peaking in the 10-14 year age group at 7.7/100,000 person years.⁽⁵⁾
- TT can occur spontaneously or from trauma to the scrotum. Symptoms usually include pain in the scrotum, usually on one side only. The pain starts suddenly, is severe and can be accompanied with abdominal pain, nausea or vomiting.⁽³⁾ Sometimes the boy reports the pain as abdominal not scrotal. Treatment involves an operation to untwist the spermatic cord. If treated within 6 hours from the start of the pain, there is over a 90% chance of saving the testis.⁽⁵⁾ If treated after 24 hours, there is less than 10% chance of saving the testis. Unfortunately, young and adolescent boys can present late due to reluctance to inform their parents or carers of their symptoms.

Aim

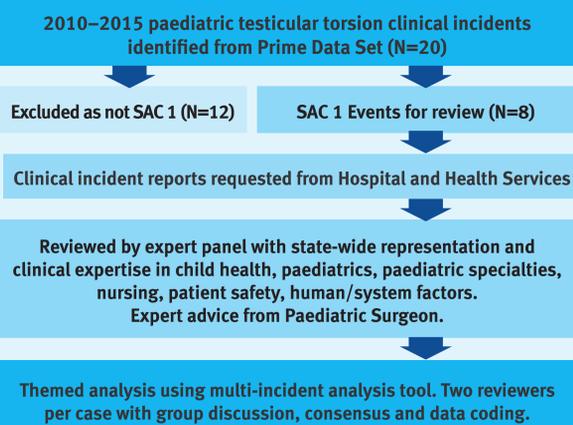
To review Queensland SAC 1 paediatric clinical incident reports from 2010–2015 involving TT to identify factors that contribute to permanent patient harm and opportunities for prevention and health promotion.

Methodology

The QPQC conducted a retrospective multi-incident analysis of Queensland SAC 1 paediatric clinical incident reports involving TT which occurred in 2010–2015.

A multi-incident analysis tool was developed to identify demographic, facility, human and system factors associated with the event. This was adapted from an unpublished Clinical Management – Children and Young Person RCA Review Committee Taxonomy Dictionary developed by the New South Wales Clinical Excellence Commission and unpublished Queensland Health tools.

This work was supported by a funding grant from the Queensland Health Clinical Excellence Division. The documents were obtained in accordance with legislation supporting QPQC as a Quality Assurance Committee. An Ethics Waiver was approved by the Children's Health Queensland Health Research Ethics Committee.



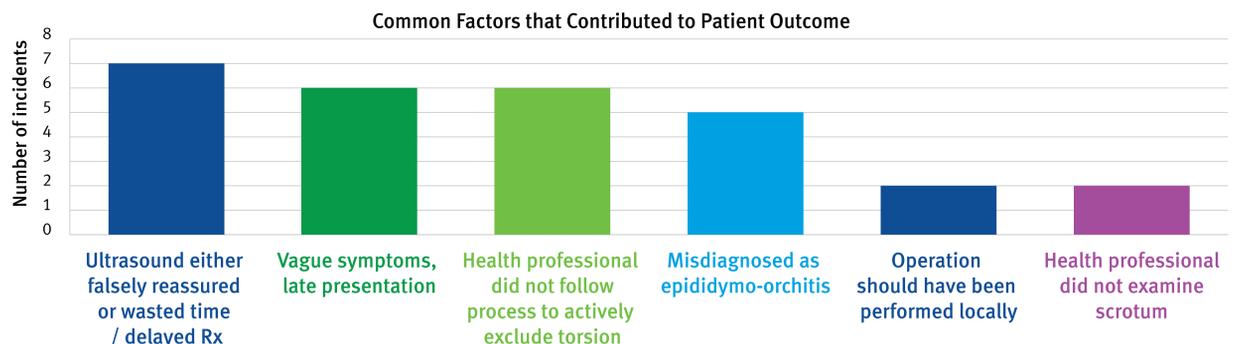
Profile of Testicular Torsion (TT) Clinical Incidents

8 SAC 1 clinical incidents involved paediatric TT during 2010–2015

75% were boys aged between 11-17 years

75% presented within Major Cities (using Accessibility/Remoteness Index of Australia (ARIA)⁽⁶⁾)

Key themes



Lessons learnt

- 1** Think of TT - boys, especially teenage boys, may not volunteer symptoms and symptoms may be vague.
- 2** Keep thinking of it – TT must be actively excluded when boys present with abdominal pain and/or scrotal pain or swelling. The scrotum must be examined.
- 3** No ultrasound unless requested by consultant surgeon – Ultrasound imaging of the scrotum is associated with a high false negative rate and delays in diagnosis and surgery.
- 4** Treatment can be undertaken locally if the boy is older than 8 years of age⁽⁷⁾ (unless there are paediatric-specific concerns) – Transfer time may threaten testis viability.
- 5** Rule out TT when diagnosing epididymo-orchitis (which is uncommon between age 3 years until sexual activity starts in teen years).

Interventions

The following strategies were implemented in response to the key lessons learnt:



Conclusions

- Multi-incident analysis of clinical incidents provide a rich source of learning at the statewide level. Opportunities for improving the management of TT were identified. It is anticipated this will result in a reduction in SAC 1 events relating to testis loss over time and increased clinician confidence regarding scope of practice.
- QPQC has learnt the value of developing strong action partnerships with stakeholders to translate learnings into practice. These partnerships have evolved over time. Having these in place at the initiation of the project will maximise outcomes.



Contact the Queensland Paediatric Quality Council at qpqc@health.qld.gov.au for more information

Acknowledgements

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