



ORIGINAL ARTICLE

Suture Technique and Complications following Paediatric Testicular Fixation

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Abstract

Aim: Following a case of stitch pain following testicular fixation after testicular salvage the authors sought to investigate whether fixation technique or suture type was associated with short and mid-term complications.

Methods: All boys undergoing fixation of testes for emergency testicular torsion was identified over a 3-year period from prospectively maintained theatre registries. A retrospective case note review was undertaken with collection of surgical technique and the outcome of post-operative complications. Hospital board governance approval was awarded.

Results: 40 boys had testicular torsion requiring unilateral or bilateral fixation as appropriate.

Twenty-six children had 3-point fixation, 10 had single point fixation, 3 had 2-point fixation, and 1 operation note described a central box stitch. Thirty-five were fixed with Prolene, 3 with PDS and 2 with Vicryl.

Ten children had post-op complications. Five had haematoma; 2 of which got infected. Two children had wound infection, but there was no wound dehiscence. Three children had excess acute post-operative pain. Three had persistent pain; with 1 child requiring removal of sutures which led to resolution of pain. There was no association of complications with technique or suture type.

Discussion/Conclusion: Our data shows no superior technique in the fixation of testes following emergency detorsion.

Aim

Testicular torsion occurs in 1:4000 males between the ages of 11 and 16 years of age (original data). In the case of detorsion and salvage of testes bilateral fixation is to be recommended due to the anatomical configuration predisposing to intra-vaginal rotation around the suspensory cord containing the testicular vessels.

Though fixation is mandated by BAPU and ESPU references method of fixation remains surgeon preference. Following a case where severe stitch pain required a return to theatre and removal of suture material the authors were interested to see if fixation technique was associated with complications. The aim of this study is compare outcomes following testicular fixation by fixation technique.

Methods

All children presenting with acute testicular pain over a 3-year period, from 1/4/2011 to 1/4/2014, to Sheffield Children's Hospital were identified from the hospital codings department. A retrospective case note analysis was undertaken of those children with emergency detorsion and fixation of testis as defined by surgical note. Theatre notes were inspected for surgical technique with particular reference to suture material, size and fixation technique (3-point, box suture or single suture). Outcomes measured were post-operative complications with focus on infection and pain. Hospital board clinical governance approval was given (SE542).

Results

40 patients were taken to theatre with acute testicular torsion. Median age of the patients was 14 years (range 11-15 years). Median time to presentation is 6.25 hours (range 30 mins to 170 hours). 21 testes were salvaged, 19 lost.

In all cases testicular fixation was performed (either bilateral if salvage was possible and unilateral as appropriate). All testes were placed within a subdartos pouch.

Twenty-six children had 3-point fixation, 10 had sin-



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Table 1: Showing distribution of suture type used in the fixation of the testes following torsion in the paediatric population at sheffield children's hospital.

Material	Size	N
Prolene	4/0	18
	3/0	11
	5/0	5
	2/0	1
PDS	4/0	1
	3/0	1
	2/0	1
Vicryl	2/0	1
	4/0	1

Table 2: Comparing complication rates following testicular fixation by different surgical technique.

Surgical Technique	Percentage with Complication %	P value
Prolene vs. Vicryl pds	23 vs. 40	0.4
3-point vs. < 3 point	21 vs. 31	0.45
> 5/0 vs. < or equal to 5/0	26 vs. 20	0.78

gle point fixation, 3 had 2-point fixation, and 1 operation note described a central box stitch. Thirty-five were fixed with Prolene, 3 with PDS and 2 with Vicryl. The distribution of fixation suture type is shown in [Table 1](#).

Ten children had post-op complications. Five had bruising or haematoma; 2 of which got infected. Two

children had wound infection, but there was no wound dehiscence in this cohort. Three children had excess acute post-operative pain, and three had persistent pain; with 1 child requiring removal of sutures which led to resolution of pain. There was no association of complications with technique or suture type, see [Table 2](#).

Discussion

This data indicates that the choice of suture technique does not influence the development of short and medium-term complications following testicular fixation. We hypothesised the suture features of size, braided vs. unbraided, and fixation technique that may cause complications following fixation. Comparative analysis did not reveal a statistically significant difference in outcomes see [Table 2](#). The small numbers in the study may be underpowered to detect a difference and our follow up period is moderate and may not detect late complications. This paper goes no way to answer the debate round anti-sperm antibodies following testicular fixation.

Conclusion

This is the first study to look at specific suture material and technique in pediatric testicular fixation. Despite the limitations of our small study number at present we feel there is no superior testicular fixation technique and leave the decision making up to the surgeon.