

# Suspected testicular torsion – urological or general surgical emergency?

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## ABSTRACT

**INTRODUCTION** Suspected testicular torsion (TT) is a surgical emergency, usually requiring urgent scrotal exploration. Provision of urology on-call cover varies widely between hospitals and often falls under the remit of the general surgical team. The purpose of this study was to investigate whether the management of suspected TT differed between urology (UT) and surgical (ST) trainees in the Severn and South West Peninsula Deaneries.

**SUBJECTS AND METHODS** An on-line questionnaire (SurveyMonkey.com) was sent to all UT and ST within the Deaneries. Questions covered training, on-call cover, intra-operative management and knowledge of complications following testicular fixation. Responses were analysed using an Excel spreadsheet and GraphPad statistical package.

**RESULTS** Responses were received from 26/31 UT and 43/52 ST throughout 17 hospitals. Only three hospitals had separate middle-grade specialist urology cover. Scrotal exploration was taught by urologists to 72% of UT compared with 40% of ST ( $P = 0.012$ , Fisher's exact test). Variability in the number of operations performed, supervision and management of true TT was insignificant. However, ST were more likely to fix a normal testicle either in the absence of other pathology (53% vs 28%) or with a twisted appendix testis (42% vs 15%) than UT ( $P = 0.045$  and  $P = 0.032$ , respectively). UT were more aware of evidence regarding chronic pain (47% vs 14%) and infertility (53% vs 18%) following testicular fixation than ST ( $P = 0.005$  and  $P = 0.003$ , respectively). Medicolegally, 76% of UT would inform the on-call consultant prior to operation compared with 45% of ST ( $P = 0.012$ ).

**DISCUSSION** ST are significantly more likely to fix a normal testicle than UT (and then usually only on the affected side), contrary to best-practice. This variation may be due to the different sources of training received by the two groups. Knowledge of possible chronic pain and infertility following testicular fixation may also affect management.

**CONCLUSIONS** Due to the variation, we suggest urology departments should draw up guidelines for management; trainees should be encouraged to discuss the case pre-operatively with the consultant; core surgical training should include a urology placement.

## KEYWORDS

Testicular torsion – Trainees – Scrotal exploration

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Suspected testicular torsion is a common surgical emergency requiring urgent scrotal exploration in theatre. Where the testicle is found to be twisted then, if still viable, testicular fixation with a suture or dartos pouch construction should be performed to prevent recurrence. Where the testicle is not found to be twisted, subsequent management is guided by clinical suspicion, other intra-operative findings and indeed the surgeon's experience.

Despite scrotal exploration being a 'urological' procedure by the very nature of its anatomy, it is performed by both urologists and general surgeons, the latter being the result of variation in urology on-call cover.

The purpose of this study was, therefore, to investigate whether management of this emergency differs between urology and general surgery SpRs in the Severn and South West Deaneries.

## Subjects and Methods

A questionnaire covering training, on-call cover, intra-operative management and knowledge of possible complications following fixation was compiled (Table 1). It was sent to all urology and general surgery SpRs in the Severn and South West Deaneries using SurveyMonkey, an online questionnaire tool.

**Table 1 Questionnaire****Training**

- In which hospital are you currently working?
- How many operations for suspected testicular torsion have you done?
  - \* *Supervised*
  - \* *Unsupervised*
  - \* *In the last year*
- Who taught you the operation? \_\_\_\_\_

**On call**

- Is there a separate urology SpR on call at your hospital as well as a general surgery SpR?

**Performing the operation**

- If about to perform a scrotal exploration unsupervised for suspected testicular torsion would you make the on call urology consultant aware?
- What is your operative management in the following scenarios?
  - \* *Twisted testicle*
  - \* *Normal testicle*
  - \* *Twisted appendage*

**Knowledge of long-term post orchidopexy complications**

- Are you aware of evidence regarding chronic pain and infertility post orchidopexy?

Data were collected and analysed using Excel and Graphpad statistical packages.

Fisher's exact tests were used to compare data between trainees. Significance was set at  $P < 0.05$ .

## Results

A total of 83 trainees from 17 hospitals received the questionnaire. Responses were returned from 26 of 31 urology trainees and 43 of 52 general surgery trainees.

Only three hospitals out of 17 had middle-grade specialist urology cover on a daily basis.

## Training

Table 2 demonstrates that there is no difference between trainees in the number of scrotal explorations performed supervised, unsupervised or in the last 12 months.

Overall, 72% of urology trainees received training from urologists while only 40% of general surgery trainees received their training from urologists ( $P = 0.012$ ).

## Performing the operation

Table 3 demonstrates the variation in management between the trainees. No significant difference was found for management of true testicular torsion. However, if the testicle was not twisted, 53% of general surgery trainees would still fix that testicle and 5% would go on to fix the contralateral side. This was significantly different to only 28% of urology trainees who would fix a normal testicle ( $P = 0.045$ ).

Furthermore, where there was a twisted appendage testis, 44% of general surgery trainees would fix the testicle with 5% going on to fix the contralateral side. Only 15% of urology trainees would fix a testicle in this circumstance. This again was found to be significantly different ( $P = 0.032$ ).

Prior to taking the patient to theatre, 76% of urology trainees would discuss the management plan with the on-call consultant compared with only 45% of general surgery trainees ( $P = 0.012$ ).

Table 4 demonstrates that urology trainees were significantly more likely to be aware of evidence regarding long-term chronic pain ( $P = 0.005$ ) and infertility ( $P = 0.003$ ) following testicular fixation than general surgery trainees.

## Discussion

Management of the truly twisted testicle by both sets of trainees is broadly similar, most trainees performing bilateral three point suture fixation. This corresponds to proposed guidelines from a study in 2002.<sup>1</sup> A small proportion of trainees in each group use dartos pouch construction instead which is an acceptable alternative.

**Table 2 Operative experience**

	Urology trainees	General surgery trainees
Median range of supervised scrotal explorations	1–5	1–5
Median range of unsupervised scrotal explorations	6–10	6–10
Median range of scrotal explorations in last year	1–5	1–5

**Table 3** Variation in management

	Urology trainees (%)	General surgery trainees (%)
Contact on-call consultant pre-operatively	76	45
Twisted testicle: bilateral 3-point bilateral suture orchidopexy	85	72
Twisted testicle: bilateral dartos pouch construction	15	28
Normal testicle: bilateral suture fixation	16	5
Normal testicle: unilateral suture fixation	12	48
Twisted appendix testis: bilateral suture fixation	5	5
Twisted appendix testis: unilateral suture fixation	10	39

**Table 4** Awareness of complications following testicular fixation

	Urology trainees (%)	General surgery trainees (%)
Chronic pain	47	14
Infertility	53	18

However, where there is a normal testicle, with or without a twisted appendix testis, general surgery trainees are significantly more likely to fix it and then only on the affected side. Although there is little literature and no formal published guidelines, this may be considered to be contrary to perceived best practice. Indeed, Pearce *et al.*,<sup>1</sup> having carried out a survey of 33 urology consultants, declared that there was absolutely no indication for testicular fixation in the absence of a twisted testicle. Furthermore, if testicular fixation is performed, it should always be done bilaterally.

In the majority of hospitals within the Severn and South West Deaneries, general surgery trainees perform emergency scrotal explorations due to lack of daily urology SpR cover. However, the number of operations performed by both sets of trainees is similar. Therefore, variation in management cannot be associated with variation in exposure.

The variation could be attributable to different sources of training received. Only 40% of general surgery trainees were taught the operation by urologists compared with 72% of urology trainees. Urology trainees were also more aware of the risk of complications such as chronic pain and infer-

tility, possibly from knowledge passed on by peers or exposure to these patients in the out-patient setting. The evidence itself though is fairly weak; Coughlin *et al.*<sup>2</sup> suggested that orchidopexy was an independent risk factor for infertility in formally cryptorchid men but very little supporting literature has been published since then.

It was noted that general surgery trainees are less likely to discuss management plans pre-operatively with the on-call consultant than urology trainees. The reason for this is unknown. In an area with such wide variation in management, this should be encouraged from a medicolegal point of view.

## Conclusions

Variation in management of suspected testicular torsion between urological and general surgical trainees has been demonstrated. Suggestions to improve concordance include agreement of a management protocol within hospitals or regionally, and obligatory discussion of the case preoperatively with the consultant on-call to agree on intra-operative management.

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## References

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