Suspected testicular torsion: a survey of clinical practice in North West England

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SUMMARY

Several aspects of the management of suspected testicular torsion are controversial. A questionnaire was mailed to all 33 consultant urologists in the North West region of England to elicit their policies for routine clinical management. 29 of 33 questionnaires were returned (2 incomplete).

As regards radiological investigation, 4 consultants always request ultrasound examination; the others do not favour routine imaging. When the diagnosis of testicular torsion is confirmed at operation, all consultants would perform bilateral testicular fixation, although with considerable variations in technique; most use Vicryl sutures (66%) and three-point fixation (57%). One-third would do an ipsilateral orchidopexy if there was no clear evidence of testicular torsion at operation.

The variation revealed by this survey prompted an attempt to formulate a protocol for management. A review of the published work indicates that, in cases of proven testicular torsion, treatment should include bilateral fixation with delayed-absorption or non-absorbable sutures; fixation should be at three points. When torsion is not found at operation, there is no evidence of benefit from orchidopexy.

INTRODUCTION

The acutely painful testicle is a common urological emergency requiring prompt assessment. Suspected testicular torsion demands immediate surgical exploration. Testicular torsion accounts for about 17% of acute scrotal presentations[1] and is the eventual diagnosis in almost 40% of scrotal explorations for suspected torsion of testis[2]. Testicular torsion occurs mainly in adolescents, with a lesser peak in the neonatal period. The risk of a male developing torsion of the testis by the age of 25 years is in the region of 1 in 135[3]. Whilst there is little dissent about the need for surgical exploration, derotation and orchidopexy (or orchidectomy if the testis is not viable), many aspects of the management of suspected testicular torsion are fiercely debated. We reviewed current practice in the North West of England and reviewed the published work to formulate a management protocol.

METHODS

A postal questionnaire was sent to all 33 consultant urologists in the North West region of England registered on the regional audit database. A second copy of the questionnaire was posted to non-responders four weeks later. Questions related to preoperative imaging and surgical management of suspected testicular torsion. The Medline database was searched from 1966 to September 2000 by use of the terms 'testicular torsion', 'orchidopexy' and 'torsion of testes'.

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RESULTS

29 of 33 (88%) questionnaires were returned. 23 stated that in cases of suspected testicular torsion they would not routinely do any radiological investigations before surgical intervention; 4 would request ultrasound examination, and 2 did not answer this question. When operating for suspected testicular torsion the favoured incisions were median raphe 13, transverse 10, bilateral vertical 5, and oblique 1.

There was universal agreement that, in cases of proven testicular torsion, bilateral orchidopexy should be performed. Testicular viability was assumed, although this was not specified in the questionnaire. In the event of a diagnosis other than torsion of testis, 9 urologists would still perform ipsilateral orchidopexy though all said that contralateral orchidopexy would not be indicated.

Having surgically explored the scrotum for suspected testicular torsion, 18 urologists would not perform a synchronous procedure. 5 stated that they would perform a Jaboulay procedure (eversion of the tunica vaginalis) and 2 would excise the appendix testis, 1 would do both, and 3 did not reply.

The suture material used for orchidopexy was as follows: Vicryl 16, silk 7, Prolene 3, PDS 2, non-

absorbable (unspecified) 2, and Dexon 1; one consultant did not reply and 3 specified two possibilities.

As regards the method of orchidopexy, three-point fixation was favoured by a majority (66%). 8 preferred two-point fixation, and one each one-point and four-point fixation.

DISCUSSION

This survey indicated substantial variations in policies for management of suspected testicular torsion. We sought evidence on some of these issues from the published work.

Whilst human testes occasionally survive up to 10 hours of torsion[4,5], viability is considerably reduced after 4–6 hours of ischaemia[6]. What is the role of colour doppler ultrasound scanning in diagnosis? In suspected cases the sensitivity ranges from 89%[7] to 100%[8–12], if the criterion for ischaemia is reduced or absent testicular blood flow relative to the contralateral testis. Coupled with a specificity of between 98.8%[7] and 100%[8–10,12] this makes a compelling argument for colour doppler ultrasound scanning of the acute scrotum, although clearly this is not always practicable, especially 'out of hours'. Kass calculated the specificity of clinical examination of the acute scrotum to be 90%[8] and concluded that ultrasound in clinically equivocal cases would usually spare a child unnecessary surgical exploration. Theoretically the sensitivity of doppler scanning may be lower in incomplete or intermittent testicular torsion, in both of which flow can be normal. A reasonable policy is to request colour doppler scanning of the acute scrotum if signs of torsion are equivocal[13] and an experienced radiologist is readily available. Whilst none of the respondents advocated radionuclide imaging before surgical exploration the sensitivity (87–98%) and specificity (100%) of this method are impressive[14,15]. It is, however, more time-consuming and invasive than ultrasound and inferior in distinguishing differential flow between testes[16]. We therefore do not see a routine place for radionuclide scanning in assessment of the acute scrotum.

What of the operation? In the numerous reported cases of ipsilateral testicular torsion after orchidopexy[17–20], a strong common denominator is the use of absorbable sutures. Kuntze reported on 16 cases, all but one of which had orchidopexy performed with such a suture; in the remaining case fine 4/0 silk had been used, and exploration showed that it had cut through the tunica albuginea[17]. Absorbable suture should be avoided in orchidopexy.

The general view, shared by all the urologists replying to this survey, is that contralateral orchidopexy should be done at the time of initial exploration. Arnbjornsson has challenged this in the past. He calculated that the risk of contralateral testicular torsion following unilateral orchidopexy for torsion is so remote that the complications arising from prophylactic orchidopexy outweigh any benefit[21]. However, testicular torsion is bilateral in up to 1% of cases[23] and there are reports of contralateral torsion following unilateral orchidopexy[22]. The argument for contralateral orchidopexy is strengthened by the 40% reported incidence of anatomical abnormalities predisposing to torsion in the contralateral testis[24]. Furthermore there is no reliable evidence that prophylactic fixation adds to the pre-existing functional impairment found in most cases[25].

When the operative diagnosis is something other than testicular torsion there is no evidence to support the practice of ipsilateral or contralateral orchidopexy. This is the group of patients who have most to lose from needle trauma to the testes, which should be replaced intact.

Van Glabeke has reported the results of 543 surgical explorations for acute scrotal pain in which the incidence of testicular torsion was only one-third of the incidence of torsion of testicular appendage[1]. In view of the ease with which testicular appendages can be excised and the negligible additional morbidity, it is justifiable to remove these at exploration. The argument for performing a Jaboulay repair at the time of exploration is based on the avoidance of direct needle trauma to the testis proper. Lent reported 46 eversion orchidopexies in 35 patients with a follow-up of up to 14 years[26]. There were no cases of recurrent torsion; however, there is no evidence of benefit from avoidance of needle trauma, and Jaboulay repair in addition to standard orchidopexy seems unnecessary as a routine. The technique of testicular fixation should incorporate three non-absorbable sutures anchoring the testis to either the lateral[27] or medial[28] scrotal wall. There are no reported comparisons between different techniques; probably the important factors are the number and security of sutures and avoidance of suture cut-through.

Conclusion

We propose the following protocol for management of suspected testicular torsion

- When findings on clinical examination are equivocal, colour doppler ultrasound scanning should be performed if available
- Radionuclide scanning is not recommended
- In cases of testicular torsion, bilateral orchidopexy should be performed
- Three non-absorbable sutures should be used for orchidopexy
- Testicular appendages should be removed at the time of orchidopexy
- There is no role for additional Jaboulay repair at the time of orchidopexy
- There is no indication for orchidopexy in the absence of testicular torsion.

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