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**Original Research Article**

# Testicular appendage torsion managed non-operatively

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## ABSTRACT

**Background:** Acute testicular pain is one of the commonest reasons of testicular exploration. Testicular appendage torsion is one of conditions presenting with testicular pain. If the diagnosis is certain this can be managed conservatively. Operative management is reserved for those patients in whom non-operative management fails. The objective of this study was to ascertain the success of conservative management.
**Methods:** The medical records of thirty-four consecutive patients who were diagnosed with testicular appendage torsion, were managed non-operatively and satisfied the inclusion criteria were retrospectively analysed.
**Results:** The average age of patients was 16.3 years. 94% of the patients were successfully managed non-operatively. Pain not controlled by analgesia was the main reason for representing to the emergency department. All patients were discharged from any further follow up by day 9.
**Conclusions:** Where the diagnosis of testicular appendage torsion is confidently made, non-operative management is a viable option. Larger studies are required to confirm these findings.

**Keywords:** Acute scrotum, Non-operative management, Testicular appendage torsion

## INTRODUCTION

Acute scrotum is one of the common surgical emergencies requiring prompt surgical exploration.[1,2] Testicular torsion being the condition needing urgent diagnosis and operative management to prevent testicular loss.[3] Timely scrotal exploration and fixation being the most critical factor in determining outcome.[4]

However differential diagnosis of the acute scrotum can include conditions such as testicular appendage torsion and epididymo-orchitis.[5] Where the diagnosis is in doubt scrotal exploration is required for a definitive diagnosis.[6] A 2010 study showed 51% of scrotal explorations had testicular torsions, 24% had a testicular appendage torsion, 9% had epididymo-orchitis with the other 5 % classified as other diagnosis.[7] In cases where the diagnosis of testicular appendage torsion can be confidently made clinically, non-operative management is an option.[8] The recovery for those patients managed conservatively is however slow with some requiring operative management if the symptoms persist.

A search of the literature did not ascertain the success of conservative management of testicular appendage torsion. Our study aimed to review the clinical outcome of patients managed non-operatively at out institution.

## METHODS

A retrospective analysis of patients who were diagnosed with testicular appendage torsion and were managed non-operatively on initial presentation at the Townsville Hospital was carried out. The study period was January 2005 to December 2015 (11 years). The data was obtained from clinical records. The patient inclusion criteria were all patients who presented during this period, were diagnosed with testicular appendage torsion

and were planned for non-operative management. Exclusion criteria were patients operated on presentation and those not followed up and whose outcome was therefore unknown. The data recorded included pain, erythema, scrotal swelling and duration of symptoms. The symptoms were analysed at day 4 and on time of individual patient discharge. The end point was full discharge from the surgical team outpatient clinic after resolution of symptoms. The data was recorded on a Microsoft excel 2007 spread sheet file.

## RESULTS

**Table 1: Side affected.**

| | |
|---|---|
| **Right** | **16(47%)** |
| Left | 18 (53%) |

**Table 2: Management outcome.**

| | |
|---|---|
| **Discharged after non-operative management** | **32/34 (94%)** |
| Failed non-operative management | 2/34 (5.9%) |

**Table 3: Analgesic requirements.**

| | Only when required | Regular NSAID | Regular NSAID + Opioid |
|---|---|---|---|
| Presentation | - | 6 (17.6%) | 28 (82.3%) |
| Day 4 | 8 (23.5%) | 16 (47%) | 10 (29.4%) |
| Discharge | 34 (100%) | - | - |

**Table 4: Patient characteristic.**

| Characteristic | Mean | Standard deviation |
|---|---|---|
| Age (years) | 16.3 | 9.14 |
| Duration of symptoms (hours) | 8 | 3.6 |
| BMI (kg/m$^2$) | 26 | 4.7 |
| Length of follow up (days) | 5 | 3.2 |

A total of thirty-four patients satisfied the inclusion criteria. Three patients were excluded as their post discharge outcome could not be ascertained. The average age of patients was 16 years of age. The youngest patient was eight and the oldest was forty-two. Eighteen patients (53%) were affected on the left side with sixteen (47%) affected on the right side. Urinalysis was obtained in eight patients and had been clear.

Of the thirty-four patients analysed, thirty two (94%) went on to be successfully discharged with no need of operative intervention. Two (5.9%) represented to the emergency department, requiring admission and operative management. Of the two, one was readmitted on day 4 and the other on day 6. These two patients requiring operative management were discharged day 1 post op.

On initial presentation, twenty-eight (82.3%) were discharged on Non-steroidal anti-inflammatory drugs (NSAIDS) as well as oral opioid analgesia. Six (17.6%) were discharged on NSAIDS alone. 4 days after initial presentation, ten (29.4%) of the patients were still taking opioid analgesia in addition to the NSAIDS. Sixteen (47%) were taking NSAIDS alone. Eight (23.5%) were off analgesia completely. But the time of discharge from follow up, all patients were off analgesia.

Scrotal oedema was not present on those managed conservatively. On day 4, twelve (35.3%) had developed unilateral scrotal oedema on the affected side whilst 22 (64.7%) did not develop scrotal oedema. The twelve developing scrotal oedema included the two later requiring operative management. The other ten (29.4%) managed conservatively were oedema free on final discharge.

Twenty- seven (79.4%) had a localised inflammation/erythema on presentation. Day 4 this remained in six (17.6%) of the patients. This number also included the patients that went on to require operative management.

The patient followed up the longest was discharged on day 9 post initial presentation.

## DISCUSSION

Testicular appendage torsion is one of the frequent causes of acute scrotum.[9] The confidence with which this diagnosis is made is clinician dependent and may require radiological confirmation.[10] Where the diagnosis is in doubt, scrotal exploration is the management of choice as the symptoms of testicular appendage torsion and those of testicular torsion proper can be difficult to distinguish. However, in situations where the clinician has confidently made a diagnosis of testicular appendage torsion then conservative management is an option. Operative management being reserved for those failing conservative management. In our study, conservative management seemed to have a very high success rate with only 5.9% of the patients later requiring operative management.

Scrotal oedema was not present on presentation on any of the patients on initial presentation. This is likely due to the effect of scrotal oedema having a negative effect on how confident a diagnosis of testicular appendage torsion can be made. Those patients with scrotal oedema on initial presentation end up having operative management.

Unbearable pain was the single factor cited as pushing patients to represent and require operative management. Once pain was under control the patients successfully managed conservatively tolerated scrotal oedema and erythema very well. This is likely due to patient education on initial presentation on expected symptoms.

## CONCLUSION

Where the diagnosis of testicular appendage torsion is in doubt, operative management is still recommended. However, in those patients with a confident clinical diagnosis of testicular appendage torsion, non-operative management is a valid and viable option as long as follow up and patient education is adequate. Larger studies are needed to confirm these findings.

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