

Relation between cold weather and testicular torsion in children

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Abstract

Introduction: Reports were recently published on relation of cold weather and testicular torsion (TT). That is why we decided to evaluate this hypothesis at our children's hospital. The aim of this study is to evaluate the relation between cold weather and testicular torsion in children.

Materials and methods: In this retrospective and descriptive study from January 2011 to December 2015, one hundred and seventy patients were admitted at Mofid Children's Hospital due to acute scrotum. Patients who had proven TT were candidates for this study. The records of all operated children were analyzed according to age, season of the year, and operation type.

Results: A total of one hundred and seventy patients were included in this study within five years, with a mean age of 28.6+32.9 months (range 1 to 144). Winter was the peak time for testicular torsion (42%).

Keywords

- Testicular torsion
- Cold weather
- Children

Introduction

Testicular torsion (TT) is a surgical emergency in which the testicle can only be saved by early diagnosis and treatment.¹ A hypothetical risk factor for TT is cold weather or low temperature, as the cremasteric reflex activity may induce TT.² Although this seasonality event has been reported on many occasions, it is not undisputed.^{3,4} Methodological drawbacks might be behind these conflicting results. Some studies use administrative databases, allowing the inclusion of patients with other causes of acute scrotum.⁵⁻⁸ The aim of our study was to evaluate that relation in our center.

Materials and methods

In this retrospective and descriptive study, 250 patients underwent surgical exploration due to acute scrotum between January 2011 and December 2015 at Mofid Children's Hospital.

One hundred and seventy had TT. According to our hospital guidelines, all patients presenting acute scrotum are candidates for early exploration. The records of all operated patients with proven TT were evaluated for age, season of year and operation type.

Results

A total of one hundred and seventy patients out of two hundred and fifty patients were included in this five year study, with a mean age of 28.6+32.9 months (range 1 to 144). Winter season showed a peak of (42%) cases. Among them, 108 (60%) children underwent orchidopexy, and 67 (40%) orchiectomy. Thirty (18%) patients were admitted in spring, 16 (9%) in summer, 52 (31%) in autumn, and 72 (42%) cases in winter. Our report depicts that in winter season 72 (42%) cases were operated for testicular torsion

Table 1.

Table 1: Relation between number of cases, seasons, and type of surgery

Seasons	Orchidectomy n=67	Orchidopexy n=103
Spring	10 (6%)	20 (12%)
Summer	12 (7%)	4 (2%)
Autumn	18 (11%)	34 (20%)
Winter	28 (16%)	44(26%)

Discussion

The hypothesis of correlation between cold weather and testicular torsion was announced nearly about 40 years ago.⁹ It is postulated that cold weather causes TT after persistent cremasteric activity, especially in trauma and body position changes. We should be aware of TT in late autumn and winter season. There are three reports from Ireland,¹⁰ Scotland¹¹ and Kuwait.¹² An investigation from New York shows that 81% of their 58 surgical cases occurred in the cold season.¹³ In our series 42% of the operated cases happened in winter time and 31% during late autumn. Rouzrokh et al⁷

reported that 44% of patients with TT presented in winter time. The Nigerian study showed also increased incidence of TT during cold weather.¹⁴ An investigation from Taiwan, using a national database, showed an association between cold weather and TT.¹⁵ Another Taiwanese study using a national database demonstrated an association between TT and cold weather higher than 6 centigrade.¹⁶ A Brazilian study with 21,289 surgically cases detected a seasonal difference in the monthly incidences of testicular torsion between the hot and cold weather.⁸ More recently, a Brazilian study also observed a significant increase associating TT with the coldest months.¹⁷

Table 2: Shows comparative studies about relation of testicular torsion and cold weather

Studies Number	Rouzrokh M et al ⁷	Korkes F et al ⁸	Shukla RB et al ¹⁰	Molokwu CN et al ¹¹	AlHunayan AA et al ¹²	Mabogunje OA et al ¹⁴	Chiu B et al ¹⁵	Chen JS et al ¹⁶	Gomes DO et al ¹⁷	Our study
Winter time	44%	Highest	Highest	Highest	Highest	Highest	Highest	31.1%	39%	42%

Conclusion

Cold weather is a predisposing factor in testicular

torsion, therefore we should be aware of it in our practice.

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