

Parents' awareness and knowledge of testicular torsion: A cross-sectional study

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Abstract

Background: Testicular torsion (TT) is one of the most common emergencies in pediatric urology. Family awareness of this condition could lead to early diagnosis and intervention and salvage of the effected testicle. The purpose of this study is to assess parental awareness about TT and their source of knowledge. We also evaluated the response of the parents to their children's scrotal pain.

Methods: A quantitative, observational, cross-sectional study was conducted from March 2017 to September 2017 at our institution. The study target were parents attending the pediatric urology clinic and the comparison group included parents attending the general pediatric clinic in the same period. We distributed a questionnaire and then compared the results in both groups.

Results: A total of 200 parents participated in this study (100 parents from each clinic). Nineteen percent of pediatric urology clinic parents were aware and 14% of general pediatric clinic parents were aware about TT with no statistically significant difference observed ($P = 0.341$). The parents in urology clinic choose doctor as their main source of knowledge (42.1%), while in general pediatric clinic, doctor and through a friend as the main source of knowledge had the same percentage (28.6%). Response of the parents to their children's scrotal pain during working hours in urology and general pediatric clinics was to drive their children to the emergency room immediately with 85% and 82%, respectively. The response of the parents after working hours in both clinics did not show difference, with 83% of parents in pediatric urology clinic and 85% in general pediatric clinic driving their children immediately to the emergency room.

Conclusion: TT in boys is a common problem we face as pediatric urologists and it may lead to testicular loss if not diagnosed and treated early. We found that the awareness of TT in children is low in our community and it is our responsibility to raise it to improve our children's well-being.

Keywords: Awareness, children, testicular torsion

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INTRODUCTION

Testicular torsion (TT) is the most common pediatric urological emergency that requires urgent intervention. The annual incidence of TT was estimated to be 3.8 per 100,000 boys under the age of 18 years.^[1] Based on a study that was conducted in patients with two or more of the following findings, pain for <24 h, a high position of the testis, nausea and/or vomiting, and abnormal cremasteric reflex will have TT at an exploration of 100%.^[2]

TT must be recognized early for early surgical intervention within 4–8 h to avoid permanent loss of testis; after this window, the child will face decrease in fertility and high orchidectomy rate. It was reported that 42% of boys who had TT and presented late underwent orchidectomy.^[3] Decrease in fertility was observed with abnormal semen analysis in 86% of cases.^[4] The effect of orchidectomy on boys is significant and cannot be ignored, that is why parents should be aware of it. It was estimated that 96% of parents of whom their children had acute scrotal pain believe that it is important to increase awareness about this condition.^[5]

The aim of our study is to assess parents' awareness about TT and their response to their children's acute scrotal pain.

METHODS

An observational, cross-sectional study was conducted from March 2016 to September 2016 at our institution. The study target were the parents of male and female patients who attended pediatric urology clinic and the general pediatric clinic to compare the awareness between the two clinics. We excluded parents whose children suffered from TT.

The objectives of this study were to assess parents' awareness about TT and their source of knowledge. Second, to evaluate parents' response to their children's acute scrotal pain. We used simple random sampling technique by choosing parents attending our pediatric urology clinics on different days for 6 weeks and we distributed the same questionnaire to parents in the general pediatric clinics to compare between them. The questionnaire consisted of three sections: the first section was about general information, the second section involved the response of parents to their children's acute scrotal pain, and the third section included parents' awareness of TT and their source of knowledge. A pilot study was conducted on twenty participants to test the suitability and clarity of the questionnaire and to estimate the time required for data collection. The completed questionnaires were analyzed by

the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) software. We used Chi-square test and Spearman's correlation coefficient for the analysis of data.

RESULTS

The study included 100 parents visiting pediatric urology clinics and 100 parents visiting the general pediatric clinics to compare between the two groups. Nearly 19% of parents in the pediatric urology clinic and 14% in the general pediatric clinic were aware of TT ($P = 0.341$). Regarding the source of knowledge of TT in the urology clinics, it was through the doctor, friend, the Internet, newspaper, and magazines and other sources at 42.1%, 10.5%, 36.8%, 5.3%, and 5.3%, respectively. On the other hand, the source of knowledge of TT in general pediatric clinics was through the doctor, friend, the Internet, newspaper, and magazines and other sources at 28.6%, 28.6%, 7.1%, 21.4%, and 14.3%, respectively.

We found a positive relation between knowledge of disease and total number of boys in the family. The results from the pediatric urology clinic ($r = 0.156$, $P = 0.066$) and the general pediatric clinic ($r = 0.159$, $P = 0.062$) show that high number of boys in the family leads to parents having more awareness about the condition.

We inquired the participants if their children had scrotal pain in the past: 12% and 8% in the pediatric urology and general pediatric clinics, respectively ($P = 0.346$).

Figure 1 depicts the assessment of parents' response to their children's scrotal pain during business hours in pediatric urology clinic which showed that 85% will drive their children to hospital immediately and 8% will use house remedies or put ice on it, but only 4% will arrange appointment with their doctor and lastly 2% will give him over-the-counter medication. In the general pediatric clinic, the results were almost similar, with 82% driving their children to hospital immediately. Figure 2 depicts the evaluation of parents' response to their children's scrotal pain after business hours or in the weekends. In pediatric urology and general pediatric clinics, it was reported that 83% and 85% of parents, respectively, would drive their children to hospital immediately, with close percentages in the remaining choices. In both situations, there was no significant difference in the family response, with their choice of going immediately to the emergency room being the most favorable.

Figure 3 depicts the reason that would make the parent think that this pain is a serious condition. In both groups, they believe that severe pain and the appearance of the

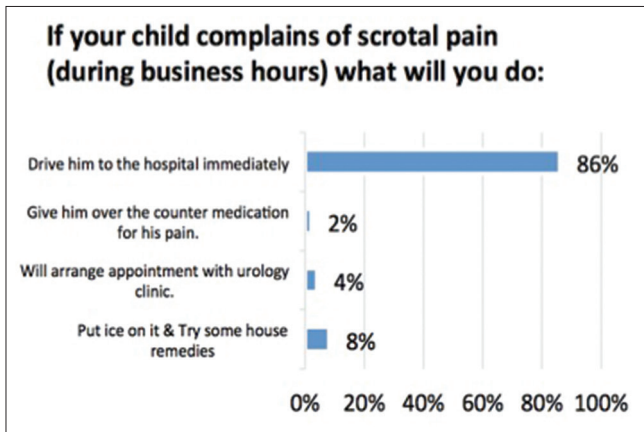


Figure 1: Parents' response to their children's scrotal pain during business hours

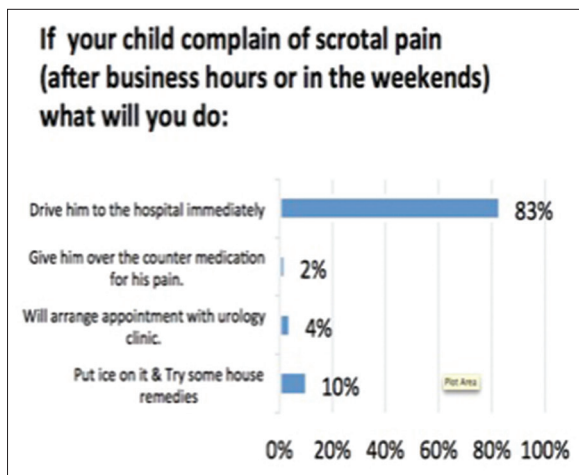


Figure 2: Parents' response to their children's scrotal pain after business hours or in the weekends

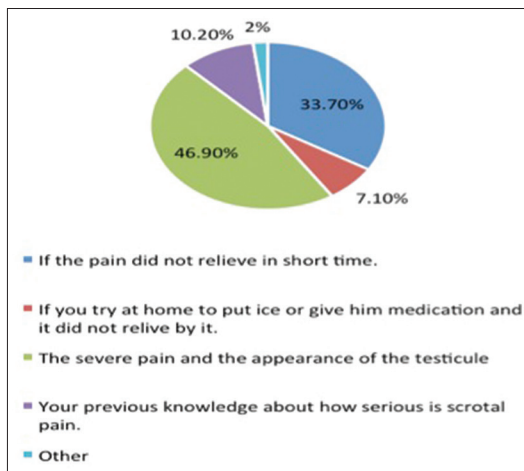


Figure 3: What would make the parent think that this pain is a serious condition?

testicle is an indicator of serious condition, constituting 47% in pediatric urology group and 40% in general pediatric group.

DISCUSSION

Limited evidence is available in the literature about the awareness of family for such critical condition such as TT in children, so we thought that it is important to survey parents to observe their awareness. We conducted this study to document the awareness level in the parents about TT in the general population in our Saudi community. We believe that raising the awareness level about TT is a crucial aspect of the care of our patients.

Friedman *et al.* looked at the parent awareness about TT in urology and ear, nose, throat (ENT) clinics. They found no statistically significant difference in the awareness about TT between the parents in the urology and ENT clinics (34.2 vs. 35.6%).^[6] Our study showed similar finding as there was no statistically significant difference in the awareness of TT in children between the urology and the general pediatrics clinic groups (19% vs. 14%). The parents in our study who knew about TT gained their knowledge mostly through their doctor and the media (the Internet or magazines and newspapers). In Friedman *et al.*'s. study, 34% of parents had heard of testicular twisting/torsion, most commonly through friends, relatives, or knowing someone with torsion (35%).^[6] The awareness about TT is very low in our study which means we should spend more time and invest more in raising the awareness to increase knowledge and avoid the consequences of TT. The media with its diverse tools would play a major role in raising awareness because they provide a lot of information, which is easy to access by the whole community. On the other hand, awareness campaigns also would give another aspect of interaction between health-care providers and the community, which in turn could result in well-informed parents.

In Bayo *et al.*'s. study, the authors assessed the level of awareness among male undergraduates among Nigerian university students about TT and found that 28.2% were aware of the disease.^[7]

We could not find difference in the percentage of families who had any of their children with scrotal pain in the past in both clinics (12% vs. 8%). In Friedman *et al.*'s. study, 65.2% of parents in urology clinic reported that their kids had a history of scrotal pain and none of the parents in ENT clinic had a history of such complaints.^[6] Parents' recall of their children's scrotal pain will be more accurate if they know about the causes of the scrotal pain, which will make them more proactive about their children's complaint and because our community awareness is low, it would affect the parents' memory of their children's complaints.

Our study showed that when the number of boys in the family increases, the parents' awareness of TT also increases. Unfortunately, parents with only girls in the family will have no knowledge about it; of course, this will not affect them directly, but if they had information about it, they may pass it on to other parents who have boys in their family.

We noticed that the response of the parents to their children's scrotal pain during or after the business hours or during weekends is to drive him to the emergency department immediately in both groups, known that this answer is biased as they were informed about the purpose of this study before they start filling the questionnaire, regardless of the high percentage of the parents who answered that they will bring their children to the hospital and that it doesn't go along with low awareness rate in both groups. Friedman *et al.* showed similar findings to our study; 74.4% of parents during business hours and 81.8% after business hours or during weekends will drive their children to the emergency department immediately or will call their pediatricians.^[6] Ubee *et al.* showed that only 22% of parents will bring their children to the emergency room immediately for scrotal pain.^[5] El Anzaoui showed that 72% would come to the hospital late (after 6 h from the beginning of pain).^[8]

Parental knowledge about TT has a huge influence on how would they react to it and that had been shown when the participants in our study choose severe pain and the appearance of the testicle as an indicator of serious condition in 47%. Not known or been aware of TT can delay the parents' response to the scrotal pain in their children and that could impact on the outcomes of this condition as, if it is caused by TT, it might end with testicular loss.

CONCLUSION

TT affects boys of all ages and it may lead to testicular loss if not diagnosed and treated early. Parents are responsible

for their children's health and they need to be aware of the conditions that put their kids at risk. The awareness of the parents about TT and awareness of the future implication of this condition will change the way they react to their children's scrotal pain. We found that the awareness of TT is low in our community and it is our responsibility to raise it to improve the children's well-being.

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Conflicts of interest

There are no conflicts of interest.

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