A Influência da Exposição a Baixas Temperaturas na Incidência de Torsão do Cordão Espermático – Casuística do Serviço de Urologia do Centro Hospitalar de Coimbra

Is Cold Exposure a Risk Factor for Spermatic Cord Torsion?

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Resumo

Introdução e Objetivos: Os fatores de risco para a torção do cordão espermático não estão completamente determinados. As condições ambientais têm sido responsabilizadas por alguns autores e desacreditadas por outros, embora o número de artigos sobre o tema seja escasso. A amplitude térmica em Portugal é significativa entre estações. Os autores postularam que as contrações cremastéricas poderiam ser mais frequentes e violentas nos meses do ano com temperaturas mais baixas.

Materiais e Métodos: Avaliar e caracterizar as situações de escroto agudo no Serviço de Urologia do Centro Hospitalar de Coimbra no período entre Janeiro de 1998 e Dezembro de 2008. A análise estatística foi efectuada com base no Programa R com a função wilcox.exact da Package exactRankTests.

Resultados: Foram submetidos a escrototomia urgente 44 doentes. Destes, 40 doentes (90,9%) apresentavam torção do cordão espermático. A média de idades foi de 21 anos (12-61 anos). Foram efetuadas 9 orquidectomias (22,5%). A taxa de salvamento testicular foi de 94,1% até às 6 horas, 90,9% das 6 às 12 horas, 0% das 12 às 24 horas e apenas 20% a partir das 24 horas (n=34). Foi testada a hipótese de que haveria um maior número de ocorrências no Outono-Inverno em relação à Primavera-Verão (n=40). Utilizou-se o teste de Wilcoxon para amostras emparelhadas obtendo-se um valor de p de 3,906%. Em média os doentes tiveram alta ao 1,7 dias de internamento (1-4 dias).

Conclusões: A dor testicular no indivíduo jovem deve ser considerada como uma verdadeira urgência urológica. A rápida intervenção (até às 12 horas) garante melhores taxas de salvamento testicular, como se verifica nos resultados obtidos, semelhantes aos de outras séries publicadas. Os resultados deste estudo permitem aceitar a hipótese colocada. As baixas temperaturas condicionam contrações cremastéricas mais violentas e consequentemente, um maior número de torções do cordão espermático.

Palavras-Chave: Torção do cordão espermático, fator de risco, escrototomia

Abstract

Introduction and Objectives: *Risk factors for acute testicular torsion are poorly understood. Environmental factors have been implicated by some authors and discredited by others, although there are very few articles about this theme. In our country average temperature variation over the year is significant. It was hypothesized that cremasteric contractions were more frequent and violent in the months of lowest temperature of the year.*

Material and Methods: *We retrospectively studied patients who were diagnosed with acute scrotum between January 1998 and December 2008 in the Urology Department of the Centro Hospitalar de Coimbra. For statistical analysis we've used the Program R with Function wilcox.exact from Package exactRankTests.*

Results: *Between January 1998 and December 2008, 44 patients were submitted to urgent scrotal exploration. Of those, 40 patients (90.9%) had proven torsion of the spermatic cord and had a mean age of 21 years (12-61 years). Nine orchidectomies were necessary (22,5%). Testicular salvage rate was 94.1% till 6h, 90.9% from 6 to 12h, 0% between 12 and 24h (0/1 case) and 20% after 24h (n=34). The hypothesis that there would be a greater number of events during autumn-winter was tested using Wilcoxon test for paired samples resulting in a p=3.906%. On average patients were discharged from the hospital 1.7 days (1-4 days).*

Conclusions: *Rapid intervention ensures better rates of testicular salvage, similar to other published series. Our results allow accepting the hypothesis rose – the incidence of torsion was higher during the cold months of the year. These and other results suggest that the ambient temperature may have some role in the incidence and etiology of testicular torsion. Low temperatures may condition more violent cremasteric contractions and therefore a greater number of twists of the spermatic cord.*

Keywords: *Spermatic Cord Torsion, risk factor, scrototomies*

Introduction

The risk factors for acute testicular torsion are poorly understood[1, 2 3]. Environmental factors have been implicated by some authors and discredited by others, although there are very few articles about this theme[4, 5]. In our country the average temperature variation over the year is significant. It was hypothesized that the cremasteric contractions were more frequent and violent in the months of lowest temperature of the year (Autumn and Winter, from October to March).

Figure 1) Necrotic testicle after 5 days of spermatic cord torsion

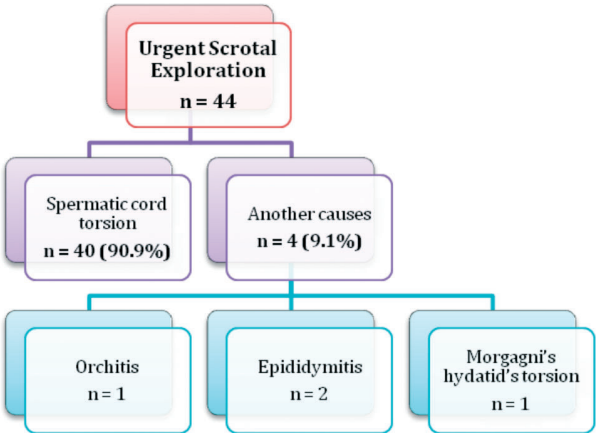

Figure 2) Causes of urgent scrotal exploration in our series.

Materials and Methods

We retrospectively studied patients who were diagnosed with testicular torsion at Hospital Geral of the Centro Hospitalar de Coimbra between January 1998 and December 2008. For the statistical analysis we've used the Program R with Function wilcox.exact form Package exactRankTests.

Results

Between January 1998 and December 2008, 44 patients were submitted to urgent scrotal exploration. Their mean age was 21 years [12-61 years]. Of those, 40 patients (90.9%) had proven torsion of the spermatic cord while 4 (9.1%) had negative scrototomies (1 patient had orchitis, 2 patient had epididymitis and the other had a torsion of the Morgagni's hydatid) (Figure 2). Left and right testicles were equally affected (50% each). In one case, the patient had spermatic cord torsion of a cryptorchid left testis. In another case the testicle was still viable after 48 hours of incomplete torsion. There was one case (2.5%) of testicular atrophy in a patient who presented to the emergency room 6 days after the beginning of symptoms. (Table 1).

Scrotal doppler ultrasonography 14 patients were submitted to. In all cases the exam corroborated the clinical diagnosis.

Symptoms (n = 40)	
Scrotal pain	100,0%
Scrotal swelling	7.5%
Inflammatory signs	10.0%
Abdominal ou inguinal pain	10.0%
Vomiting	12.5%
Testicular atrophy	2.5%

Table 1) Symptoms presented on presentation in the emergency Department

Time to presentation in the emergency department after the beginning of the scrotal pain ranged between 1 and 360 hours (6 days). The mode was 4 hours, but, due to late onset cases, the mean was 26 hours.

After the distribution of the cases according to the seasons, we found that there was a more pronounced occurrences during the months of Autumn-Winter (26 vs. 14 cases in Spring-Summer) (Figures 3 and 4). Therefore we applied the Wilcoxon test for paired samples and obtained a p result of 3.906%.

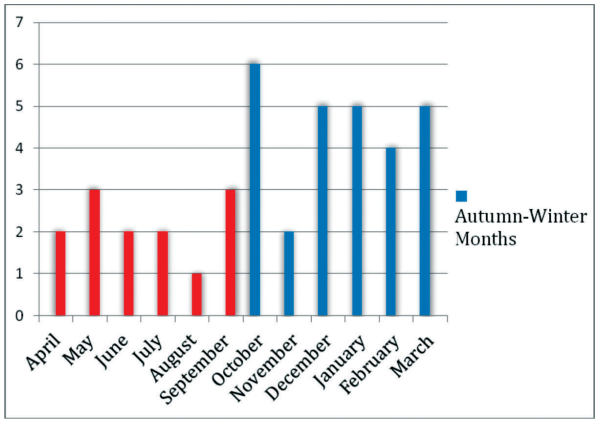

Figure 3) Distribution of the cases per month of the year (n=40)

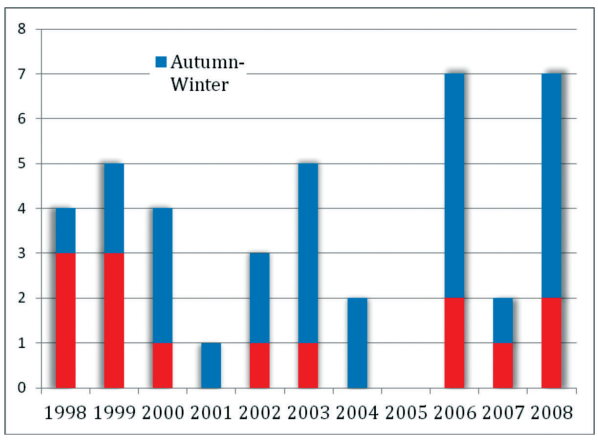

Figure 4) Distribution of events per year (n=40)

From the 40 patients with confirmed spermatic cord torsion, 73.5% were submitted to spermatic cord detorsion and bilateral orchidopexy, 22.5% underwent orchidectomy for non-viable testis and preventive contralateral orchidopexy while 5.0% had a spermatic cord detorsion and homolateral orchidopexy (relates to 2 cases: one case of previous contralateral orchidectomy for non-viable testicle after a spermatic cord torsion without preventive contralateral orchidopexy in another hospital; and another case with a previous contralateral orchidopexy for a previous spermatic cord torsion who didn't received, as well, a preventive contralateral orchidopexy in another institution).

The testicular salvage rates from our series were 94,1% up to 6 hours, 90,9% between 6 and 12 hours, 0% between 12 and 24 hours and 20% after 24 hours (Table 2).

Patients returned home 1,7 days after surgery (mean).

Testicular salvage rate (n = 34)		
< 6 hours (n = 17)	16 cases	94,1%
6 to 12 hours (n = 11)	10 cases	90,9%
12 to 24 hours (n = 1)	0 cases	0,0%
> 24 hours (n = 5)	1 case	20,0%

Table 2) Testicular salvage rates and the time to presentation

Discussion

The rapid intervention (up to 12 hours) ensures better rates of testicular salvage, as reflected in the results, similar to other published series (Table 3) [6,7,8].

Testicular Salvage Rates Comparison to other Series				
	< 6 h	6 a 12 hs	12 a 24 hs	> 24 hs
Cattolica,1982	100 %	67 %	50 %	18 %
Sheldon, 1985	98 %	68%	38 %	11 %
Patriquin,1993	100%	70 %	20 %	desprezível
Waltkins,1998	100 %	61 %	25 % > 16 hs	
, 2009	94,1%	90,9%	0,0%	20,0%

Table 3) Comparison of the testicular salvage rates with other published series.

Conclusion

Testicular pain in young individuals should be considered as a true urologic emergency. The involvement of the left spermatic cord, frequently reported by some authors [3] was not confirmed in this series. The Wilcoxon test p value was 3.906%, which is less than 5% and allows accepting the hypothesis rose – the incidence of torsion was higher during

the cold months of the year. These and other results suggest that the air temperature may have some role in the incidence and etiology of testicular torsion. Low temperatures may condition more violent cremasteric contractions and therefore a greater number of twists of the spermatic cord. This finding corroborates the nickname of "Winter Syndrome" that some authors attribute the pathology [5].

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