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Research Article

Prevalence and Evaluation of Keratoconus in Wrestlers - a

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ABSTRACT

Background: Wrestling is one of the oldest and most famous sports among the people and has existed in different nations since ancient times. Wrestling is a painful and dangerous sport and in terms of the division of sports is one of the most popular sports. In this study, we did screen and evaluation of the wrestlers for the prevalence of keratoconus among them

Method: In this study, 70 wrestlers with a history of 3 years or more were randomly selected in collaboration with the Wrestling Federation. Examinations were performed in SINA Hospital by a corneal specialist. Examinations included field of view, perimetry, refraction, orb scan, slit lamp examination, ophthalmoscope and retinoscope. Data analysis was performed using software spss16.

Results: The mean age of wrestlers was 22 ± 4.25. Years with a history of 3 years and above with an average of 4 training days per week. People had a history of trauma to the eye. 7 glasses were prescribed for refraction and field of view examinations. Based on the examinations, 2 of your veterans were diagnosed with keratoconus.

Conclusion: The athletes are exposed to Valsalva maneuvering and changing body position during the practice of Wrestling, followed by an increase in eye pressure. These factors may be effective factors in the development or progression of eye disease such as keratoconus. Since this study is the first time, more extensive studies are needed to provide a more accurate strategy.

Keywords: Eye; Injury; Wrestling

INTRODUCTION

Sight is the function of the eye index and the main factor in establishing communication with the outside world and creating individual independence [1]. More than 40,000 sports-related eye injuries are reported annually in the United States [2]. Baseball and basketball are the most common eye injuries. Exercises can be divided into low-risk, high-risk, and high-risk sports in terms of eye injury. Such as gymnastics, swimming and cycling. High-risk sports, racquet sports and collision sports such as baseball, basketball, hockey and football High-risk sports including collision sports and sports that do not use eye protection such as boxing and wrestling [2,3]. Wrestling is one of the oldest and most famous sports among the people and has existed in different nations since ancient times. Wrestling is a painful and dangerous sport and in terms of the division of sports is one of the most popular sports. Danger and collision [4]. Wrestlers are exposed to direct collisions with opponents and mats while guarding, training and competitions, they are also exposed to Valsalva maneuver, change of body position and d This is followed by an increase in eye stroke and trauma to the eye [5]. The sum of these factors causes eye injury in these athletes [6]. In 2006, a study was conducted to evaluate the types of eye injuries. Yazd In this study, which was divided into age-based injuries, the most injuries were related to the age of 7-11 years, 15% of injuries were related to sports, and the most injuries were related to ball sports [7].

A study of eye injuries in athletes was conducted by Mac Ewen, in which sports such as football, rugby, hockey and racquet sports had the most sports injuries [8]. In 1960-1970, the rate of sports-related eye injury was 4%, and in the 1980s, sports-related eye injury reached 42% [9].

The probability of having a blood relative of a person with keratoconus is about 10% [8]. The cause of this disease is not fully understood, but the effective factors in causing or spreading this disease are eye rubbing, increasing eye pressure, changing body position, trauma and Valsalva maneuve [10]. Because wrestlers are exposed to changes in body position, increased eye pressure, trauma, and Valsalva maneuvers. These factors can be effective in causing or spreading the disease in these people. There is no gold standard in the treatment of this disease and there are several solutions such as prescription glasses, contact lenses, intraocular lenses, cross links, or corneal transplants.

METHODS

This study was performed in the presence of 70 wrestlers in Tehran province. The selection of individuals was randomly selected with the cooperation of the Wrestling Federation based on more than 3 years of continuous activity. After completing the informed consent and obtaining a complete history of various diseases, especially in terms of eye diseases and history of trauma, a complete eye examination was performed. These athletes were invited to SINA Hospital for examination. Examinations included field of view measurement, refraction, perimetry, orb scan, slit lamp examination and ophthalmoscope by corneal subspecialty. The obtained data were statistically analyzed by 16 SSSP software and p less than 0.05 was considered significant. In this study, Arb scan was used for examinations. Arb Scan is a multidimensional diagnostic system that provides a complete analysis of the corneal optic system.

One of the indicators that have a diagnostic value in the study is elution. This index shows the height of the cornea relative to a reference level. If this index is more than 55 diopters, it is abnormal. The Difference index allows you to compare maps taken at different times. This index should be less than 48 microns. The zone 3 index shows the amount of corneal irregularities and the amount should be less than 1.5 diopters. The zone 5 index should be less than 2.5 diopters. Shows the thickness of the cornea and is considered abnormal if it is less than 470 micrometers. Radius index that this index should be less than 0.9.

RESULTS

The wrestlers included 3 juniors, 25 juniors, 37 adults and 5 veterans. The mean exercise history of the subjects was 6 Years. The average number of exercises per week was 4 days. In eye redius 0 index 18 eyes, in zone 3 index 9 eyes, zone 5 in 9 eyes and in posterior elevation index 10 eyes were abnormal, interior ElevationAn4 index abnormal eyes and in Diff index 8 abnormal eyes. In the field of vision examination, 7 people were prescribed glasses.

In the results of Arb scan (Table 1), two patients with keratoconus were diagnosed. Because 10% of the family history of the disease was mentioned, eye examinations were performed to ensure the athlete's siblings, they were not infected

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Table 1: ORB SCAN result in wrestler.

ORB SCAN										
		anteriorod	posteriorod	diffaod	diffpod	simod	zone 3od	zone5od	thinnestod	radiusod
N	Valid	35	35	35	35	35	35	35	35	35
	Missing	0	0	0	0	0	0	0	0	0
Mean		41.8457	51.3229	.01040	.02631	.7771	.9971	1.5829	531.2571	.7429
Minimum		38.30	46.10	.000	.008	.20	.60	.90	413.00	.00
Maximum		45.20	55.80	.020	.046	2.80	2.80	3.40	619.00	1.40

DISCUSSION

No study has been done in this field so far. It is not possible to compare the results of this study with a similar study. However, several studies have been performed on eye injuries in athletes, and in 2002 a case of Valsalva maculopathy was reported by Anthony in Italy. A 20-year-old male weightlifter has a sudden loss of vision. The athlete did not mention a family history of eye disease [10]. Valsalva trauma and maneuvering itself is an effective factor in the development or spread of eye injuries and diseases that are highly prevalent in these athletes. A study conducted in 2006 in Finland by Leivo looked at eye injuries in various sports. This study was performed with 565 eye injuries in a period of 6 months. 17% of the injuries were related to sports injuries. Their average age was 22 years. The most injuries were related to floor ball exercise. The most observed injury was Hyphema [11]. Vision following bodybuilding exercise in Athens was reported in 2004 by Stamatis, a 37-year-old man with no history of eye disease. He suffered a decrease in vision in the left eye of 20.30. In this athlete, the mentioned factor was the Valsalva maneuver [12,13]. It was sports and 71.1% was related to ball sports. Eye traumas lead to future complications such as glaucoma, cataracts and retinal injuries, in addition to primary traumas leading to vision loss. Extensive studies have been reported in the field of vision loss following sports injuries [13]. The use of eye protection in various sports prevents eye injuries most eye injuries occur in unorganized sports [14]. Most eye injuries have been reported in young men. In 2003, the study was conducted by orgeJ. This study reports American sports injuries. More than 40,000 sports-related eye injuries are reported annually. (Basketball, baseball and racquet sports) 30% were reported [15]. Numerous eye injuries have been reported following sports injuries, including several eye injuries in golf in 1975 by LIM HK in Singapore Appearance [8]. In 2009, a study was conducted in Pakistan by Junaid on eye trauma, with 52% of sports injuries related to sports trauma reported, of which 172 were sports injuries [8,16,17]. Collisions there is a possibility of eye injury in athletes and in a number of sports such as wrestling, this is uncontrollable. One of the solutions that can be mentioned is the initial and periodic examinations. Corneal hump is a phenomenon. It is a non-inflammatory disease in which the corneal stroma becomes thinner in or around the center and the cornea becomes conical. This thinning leads to myopia, irregular astigmatism, and decreased vision [18].

In 2006, a study was conducted under the title of examining the types of eye injuries. This study was conducted by Shoja in Yazd. Exercise and. Most injuries were related to ball sports [7].

A study of eye injuries in athletes was conducted by Mac Ewen, in which sports such as football, rugby, hockey and racquet sports had the most sports injuries. In 1960-1970, the rate of sports-related eye injury was 4%, and in the 1980s, sports-related eye injury reached 42%.

In 2009, a study was conducted in Pakistan by Junaid on eye trauma, with 52% of sports injuries related to sports trauma reported, of which 172 were sports injuries [8]. A Collision There is a possibility of eye injury in sports and this is uncontrollable in a number of sports such as wrestling. One of the solutions that can be mentioned is the initial and periodic examinations. Since this study is the first in the world, it is a hypothesis and for comparison and general conclusions, more extensive studies are needed in the larger community. Given that wrestling is a collision sport and is an ancient and popular sport, and preventing eye damage due to the lack of eye protection in this sport is inevitable. And impaired vision causes very serious consequences in people's lives. Therefore, it is important to pay attention to it. Performing examinations at the beginning of exercise to prevent progressive complications or disease progression or performing risky activities if there are any dangerous symptoms. Periodic examinations can also help in the early diagnosis of diseases because this is the first time this study has been done. According to the results obtained, to achieve this hypothesis, more extensive studies are needed. It is important to come to the relevant federation.

CONCLUSION

Complete eye examinations should be part of any exercise activity, and athletes with high-grade myopia, retinal disease, and eye surgery, and athletes with this history, are at greater risk for ocular risk. Athletes with a history of retinopathy, diabetes, and retinal disease should also be visually examined during high-risk exercise. Investigation of eye injuries in high-risk individuals is a key and essential factor in considering special safety measures that are necessary and unavoidable.

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