



Research Paper

Major Injuries in the Game of Volleyball

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Abstract

Top most position acquired in the field of competitive game as per the spectators concern that is soccer. Second position grasp in the game of volleyball at International level has one of the highest participation rates in worldwide, including both indoor and beach volleyball. It is played by approximately 200 million players worldwide. Despite the popularity and the large number of players there have been surprisingly few prospective reports on volleyball injuries and their prevention. As volleyball is a non-contact game, where players from the opposing teams are separated by a net, the incidence of injuries might be expected to be low. Nevertheless, volleyball is a sport involving rapid and forceful movements of the body as a whole, both horizontally and vertically, and because of the large forces involved in such movements it is inevitable that injuries occur. Volleyball is one of the most popular sports in the world. It is one of the unique team sports that has evolved into two distinct Olympic events—indoor and beach. Although injury patterns differ between indoor and beach volleyball, there are similar injuries commonly seen between the two sports. The researcher has the experience of more than 25 years in the game of volleyball, as a player, for the Kurukshetra University. Hence, investigator would like to educate the present and future players about the common injuries in the game of volleyball.

Keywords: Common injuries, game of volleyball

I. INTRODUCTION

Volleyball is one of the unique team sports that has evolved into two distinct Olympic events—indoor and beach. Although injury patterns differ between indoor and beach volleyball, there are similar injuries commonly seen between the two sports. Overall, overuse injuries are more common than acute injuries because of the amount of repetition, improper technique, and type of playing surface. Overuse conditions of the knee, shoulder and lower back are not unusual in volleyball. Overall, overuse injuries are more common than acute injuries, because of the amount of repetition, improper technique, and type of playing surface. Overuse conditions of the knee, shoulder and lower back are not unusual in volleyball. Volleyball players repeatedly use their shoulders for spiking and blocking, overuse of injuries of the shoulder are common. Sprains and strains, most often around ankle, also occur. Finger injuries (phalanges), such as dislocations and tendon tears, frequently occur during setting and blocking in the game of volleyball.

THE MOST COMMON INJURIES IN VOLLEYBALL

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1. Ankle Injuries

Ankle sprains are the most common acute injuries seen in volleyball sports persons, accounting for about 40% of all volleyball related injuries. They occur most commonly at the net when an opposing player lands onto another player's foot. When dealing with an ankle sprain it is important to adequately rehab the injury before returning to play, preferably under the supervision of an athletic trainer or physical therapist.

Treatment: Recurrent ankle sprains are extremely common within 6 months of the initial injury, owing to inadequate rehabilitation. A study showed that balance board training to regain balance is an effective tool to help prevent recurrent ankle injuries in volleyball players. Achilles Tendonitis typically occurs when a repetitive stress

is placed on the tendon and gradually causes the tendon to become inflamed. The Achilles Tendon connects the calf muscles to the heel. A rupture can occur when the tendon is placed under a high tension. Ankle Sprains occur through a twisting motion or a movement that causes the ankle to roll, causing minor tears in the ankle ligaments.

2. Knee Injuries

The nature of volleyball requires repetitive explosive jumping, which places a lot of physical stress on the patellar tendon, resulting in pain in this area. At some point, approximately half of volleyball sportspersons develop patellar tendinitis. Although not as common as patellar tendinitis, Anterior Cruciate Ligament (ACL) tears can be a more serious injury and typically occurs in volleyball during a Patella femoral Pain Syndrome is related to the way the patella tracks and moves along the groove of the femur bone. Cartilage Injuries are related to damage and/or loss of cartilage that cause debilitating pain, stiffness and swelling of the knee area.

Treatment: consists of stretching and strengthening exercises, and use of a patellar tendon strap can sometimes improve the pain. For some sports persons, a period of rest from jumping activities may be necessary. Most of the volleyball players, who wish to return to high demand of sports like, volleyball is generally opt for surgical repair to have the ligament reconstructed. Because many players have difficulties returning to high level sports and the potential long term complications, after an ACL tear, there is a lot of emphasis placed on prevention programs. Patellar Tendonitis and Ruptured Tendons involve the tendon that connects the patella to the tibia bone.

3. Wrist Injuries

Injuries in Wrist are extremely common, especially during setting and blocking. Most the time Wrist injuries in volleyball involve joint sprains. cutting manoeuvre or when an spikers / blockers comes down from a jump awkwardly known to many as “jumper’s knee”. The most common site of pain is where the patellar tendon attaches to the lower pole of the knee cap.

Treatment: tendon tears, and dislocations. X-rays are indicated in most wrist injuries in volleyball to evaluate for any fractures. Wrist Strains are the result of an impact that causes the ligaments that connect bone to bone to overstretch and develop minor tears.

4. Shoulder Injuries

Volleyball players repetitively use their shoulders for overhead serving, spiking and blocking, which commonly leads to shoulder pain. Overuse of the rotator cuff muscles can lead to rotator cuff tendinitis or tears, which is more commonly seen in adults than in young athletes, although it can occur. More often, pain from shoulder instability and resulting impingement is what we typically see in our young volleyball players. In addition to the rotator cuff muscles, there are also ligaments that help to stabilize the shoulder joint during movement. In volleyball, the player’s arm typically goes into extreme positions and rotations for hitting. When these muscles and ligaments are overworked and unable to restrain excessive movement of the shoulder, the player may sense as if the shoulder is unstable and typically will develop pain when the rotator cuff and cartilage gets impinged against structures inside the shoulder joint because of excessive shoulder movement. Over time, this can also lead to a labra tear. Shoulder Dislocation injuries occur when the ball of the humerus is dislocated from the socket of the scapula through blunt force trauma. Shoulder Impingement Syndrome occurs when the muscles, tendons and the bursa of the shoulder become inflamed and swollen.

Treatment: Rotator Cuff Tendinitis typically occurs when the rotator cuff muscles and tendons undergo repetitive chronic stress. such as blocking, setting, and digging. Common finger injuries include fractures, dislocations, and tendon and ligament tears.

5. Lower back pain

Back pain in volleyball players is very common because of repetitive bending and rotating of the trunk. Strains of the lower back is the most common back injury although the repetitive hyperextension of the lower back during hitting and setting can also place a lot of stress on the lower back bones. This can lead to stress fractures of the vertebra in the spine, known as spondyloysis, which is a very common cause of low back pain in volleyball players. Adolescents, in particular, are very vulnerable to this injury because their vertebral bones are still weak in this area. Learn how we treat spondylolysis. Although volleyball is a relatively safe sport compared to other high contact, collision sports, it does lend itself to unique injury patterns; particularly overuse injuries of the knee, shoulder and back. Like many young athletes who are training year round or are focusing on just one sport, regardless of which sport, overuse injuries in volleyball players are becoming problematic.

Treatment: To help prevent these overuse injuries, we highly encourage limiting the number of teams an players plays on in a given season, as well as discouraging participation in only one sport year round. Backaches may often occur from excess stress originating from the spine, muscles or nerves of the back region. Backaches due to stress may be a precursor to chronic lower back pain, and should therefore be taken seriously. Back Sprains and Strains are extremely common and can in range in severity from a dull pain to a highly acute sharp pain.

Finger Injuries

Fingers are vulnerable to injury during volleyball activities, such as blocking, setting, and digging. Common finger injuries include fractures, dislocations, and tendon and ligament tears.

Treatment: If you are unable to bend the finger, consultation with your sports medicine professional or athletic trainer is important. Treatment can vary significantly depending on the injury. Finger Fractures typically occur from an acute traumatic impact to one of the finger bones, causing it to fracture.

POTENTIAL PREVENTION STRATEGIES FOR AN INJURY:

Several intervention strategies have been proposed in an effort to reduce the risk of ankle sprains, including modification of the centre line rule, improving attacker spike approach technique, the quality of rehabilitation after the index (or most recent) sprain, and the use of an external support (tape or brace) in an effort to protect the ankle from injury. Each of these strategies will be considered in turn.

Rule changes

In recognition of the fact that most indoor ankle sprains occur at the net and involve (legal) penetration of the centre line, a rule change that would have made any contact with the centre line a fault. When tested during a Norwegian tournament, however, nearly 20- fold more centre line violations were whistled than under the existing rule, and therefore the proposed intervention was abandoned. Interestingly, despite the introduction of a more liberal rule permitting complete penetration of the centre line (as long as such penetration does not interfere with play on the opponent's side of the court), the incidence of ankle sprains in women's collegiate volleyball has not increased significantly over the last several years.-This suggests that a rule limiting centre line penetration only within the "conflict zone" may prove effective in reducing the incidence of ankle sprains without adversely affecting the flow of the game, but this hypothesis has yet to be tested. No centre line exists outdoors, and beach athletes are permitted to cross over into the opposition's side of the court provided that they do not interfere with their opponents.

Technique

Bahr *et al* successfully reduced the incidence of ankle sprains among amateur male and female Norwegian volleyball players through a multifaceted intervention programme that included technical training (emphasising proper spike approach, take off, and landing technique, in addition to block movement drills), balance board training, and injury awareness information. The study showed that the number of injuries resulting from opponent contact under the net was lower after the introduction of the training programme, as was the number of cases resulting from landing on a teammate's foot after a two- person block. More recently, Stasinopoulos showed that technical training alone appeared to reduce the incidence of recurrent ankle sprains in a small cohort of second division female volleyball players in Greece.

Rehabilitation

Neuromuscular (proprioceptive) training, such as that performed using a wobble or balance board, reduced the risk of ankle injuries among volleyball players when included as part of the multifaceted intervention discussed above. A recent, large scale, controlled intervention study, the Amsterdam balance board ankle study, showed that a minimal prophylactic programme of balance board training during warm up effectively reduced the incidence of ankle inversion injury among both male and female indoor volleyball players, but only among athletes with a history of prior ankle sprain.

External ankle supports

Although no study has been conducted proving the benefit of taping or bracing in preventing volleyball related ankle sprains specifically, volleyball players often wear ankle orthoses in an effort to prevent injury. The further work suggests that external orthoses are effective in preventing recurrent ankle sprains in basketball and soccer respectively. However, as the environmental risk factors for volleyball related ankle sprains may be unique to the discipline, the preventive effect of taping and/or bracing should be confirmed through volleyball specific research.

RECOMMENDATION TO PREVENT AN INJURY

Many volleyball injuries can be prevented by following proper training guidelines and these tips:

- Warm up muscles with stretching and light aerobic exercises
- Use proper strength training for the lower back, shoulders, and legs
- Use an external ankle support, such as an ankle brace or taping, to prevent the ankle from rolling over, especially if you have had a prior sprain
- Proper usage of scientific and systematic learning of skills and techniques
- Minimize the amount of jump training on hard surfaces
- Be sure to properly cool down after practice
- If you are having pain, visit your doctor and follow instructions for treatment
- The athlete should return to play only when clearance is granted by a health care professional

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