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An Analysis of the Ways to Improve Footwork Movement Ability in Tennis

Mingfang Wu

Pingdingshan University, Pingdingshan 467000, China

ABSTRACT. *In tennis, the importance of footwork mobility is reflected in improving the response speed of the ball, increasing the hit rate and performing good defense, but there is insufficient physical coordination in the actual practice of footwork mobility. Lack of predictive ability, and poor cohesion of movements have a negative impact on the effect of tennis. In response to these problems, the "ladder training method", the "multi-directional movement training method" and the "single training method" can be used for strengthening, so as to provide strong support for the training of excellent tennis players.*

KEYWORDS: *Tennis, Footwork, Lifting method*

1. Introduction

Tennis is a "small ball game". In this sport, two or two pairs of athletes are in two halves divided by the net. They use tennis rackets to hit the tennis ball. If the tennis ball goes out of bounds, fails to receive the ball, or hits the ball twice in a row, it will be judged to lose points. Athletes need to run continuously in order to catch and hit the ball. Therefore, athletes must practice footwork and movement ability seriously. If this ability is insufficient, it will be difficult to win the game.

2. The Importance of Footwork Mobility in Tennis

2.1 To Improve the Speed of Hitting the Ball

In tennis game, when the opponent hits the ball, it needs to quickly determine the trajectory of the ball and react quickly. For example, when the tennis ball is in the teeing area and has not touched the ground, the tennis ball can be directly intercepted back to the opponent's court. If the tennis ball is fast, you need to move quickly to an angle where you can hit the ball according to the tennis touch point. Once the ball is not moved in time, there will be unreasonable situations such as not receiving the ball or receiving the ball, resulting in loss of points.[1] Tennis players must keep their feet active at all times on the court, which is the guarantee for improving the speed of hitting the ball. The purpose of tennis footwork mobile

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training is to improve footwork flexibility, including starting speed, changing direction ability, running speed, etc. Only by ensuring the quality of training can better training results be obtained.

2.2 To Increase the Hit Rate

Batting is the core part of tennis. Only by improving the quality of hitting and hit rate can you get points in the game. Through experimental observations, it is found that the farther the tennis player moves, the more likely it is to make mistakes, and vice versa, they will have a good hitting effect. The so-called moving distance refers to the distance between the position of the body before the shot and the position of the body after the shot. If the movement distance is relatively long, it means that the athlete's judgment is inaccurate. On the other hand, the athlete's footwork movement cannot keep up with the brain's judgment. From this level of analysis, practicing footwork mobility is not just simply performing “foot movements”, but also training the coordination with the brain, so that you can run faster to a favorable position when hitting the ball, and adjust through shorter distances to increase the hit rate.

2.3 To Perform a Good Defense

There are offense and defense in tennis, and offense needs to be built on the basis of good defense. The defense of tennis is not “response to all changes” in the conventional sense, but highlights the characteristics of “active attack”. For example, after serving, players can quickly run to their own service area, in order to put pressure on the other side to receive the ball. When the other side hits back the ball, they need to quickly make a judgment, whether to intercept in the service area or return to the bottom line to judge the second landing point of tennis.[2] This process requires the support of footwork mobility. If the ability is insufficient, the defensive efficiency will decrease, especially when facing a “master”, the athletes will not dare to run to the service area easily.

3. Analysis of Common Problems in Footwork Exercises in Tennis

3.1 Insufficient Physical Coordination

Physical coordination will affect the flexibility of the footwork and the power when hitting the ball. In practice, some practitioners often encounter the situation that their feet move out of sync with their bodies when they hit the ball, which leads to the phenomenon that they are too reluctant to hit the ball, and can't hit the ball. Phenomena such as flying and failing to hit the ball are common. This not only fails to obtain the ideal training effect, but may also cause physical harm. Many

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practitioners who are new to tennis will subconsciously think that playing tennis is not a “difficult task”. They only need to hold and swing the racket. But in fact, if you want to play tennis well, you must first exercise your physical coordination. The hands, feet, eyes, and waist must be coordinated to lay the foundation for the improvement of tennis skills.

3.2 Lack of Predictive Ability

The seemingly small tennis ball has extremely fast running speed in tennis. Athletes need to predict the trajectory of the tennis ball, and then complete the stroke through the movement of footsteps and the swing of the racket.[3] In actual practice, many beginners often have judgment results that are completely opposite to the actual trajectory. The main reason is that the beginners lack practical experience and cannot accurately identify the speed and route of tennis. Practice anticipation ability is the basis of learning tennis, and it is the support for the good results of footwork exercises. If the training of this ability is neglected, it will have an adverse effect on subsequent practice.

3.3 Poor Connection of Actions

In a tennis match, athletes need to maintain concentration at all times and make good connections. If there is a trace of error, the opponent may find a counterattack opportunity. In the actual footwork movement practice, due to the lack of practice frequency and intensity, the practitioner's mastery of footwork movement is only concentrated in a few aspects. Once a new situation arises, they will be at a loss for a while. Whether it's footwork or swinging the ball, you must not only deal with the current “oncoming ball”, but also quickly adjust after the hit to prepare for the next “oncoming ball”. Poor cohesion of movements is caused by many reasons. In addition to training problems, the lack of real confrontation and high-quality confrontation is also one of the important reasons.

4. Research on the Method of Improving Footwork Movement Ability in Tennis

4.1 To Improve Physical Coordination through the “Ladder Training Method”

“Ladder training method” is a method introduced from the West to exercise physical fitness. The equipment required for this training method is very simple, and there is no high requirement on the venue, so training can be carried out very conveniently. In the long-term development, the “ladder training method” has derived a wealth of training forms, including simple double-legged jumping forwards, lateral “jumping in and out”, and “transimpedance” jumping with the aid of other equipment, and many more. During training, you can get exercises in terms of footwork speed, stepping accuracy, rapid replacement of virtual and actual steps, etc. This is of great significance for improving physical coordination. For example,

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through the exercise of virtual and actual steps, you can enhance the body's ability to change direction, thus reacting quickly when hitting the ball.

4.2 To Adopt the "Multi-Directional Movement Training Method" to Improve the Sensitivity of the Nervous System

The "multi-directional movement training method" is a way of training human tolerance, which plays an important role in improving the level of tennis. From the perspective of energy metabolism, tennis sports are anaerobic metabolism, which will be mixed with aerobic exercises, such as footwork movement and braking, etc. Therefore, it is necessary to rely on the "multi-directional movement training method" for overall strengthening. The key to cultivating athletes' predictive ability is to improve the sensitivity of the nervous system and be able to make judgments on the speed, drop point, and rotation of the ball in a very short time, so as to quickly adjust the footwork to welcome the ball.[4] Excellent predictive ability also needs to be built on the basis of rich practical experience, which requires continuous adjustment of training methods according to the actual situation in the "multi-directional movement training". The purpose is to continuously stimulate the nervous system, so as to further improve the sensitivity of the nervous system foundation.

4.3 To Introduce the "Single Training Method" to Enhance Movement Cohesion

The "Single training method" is formulated for the lack of frequency and intensity in conventional footwork training. It not only has good adaptability, but also can choose different levels of difficulty through artificial adjustment. This training method mainly includes two modes of single-action training and mixed-action training. Single-action training is aimed at strengthening a certain action, while mixed-action training is closer to actual combat and can effectively enhance the cohesion of actions. The guarantee of time can keep athletes in a state of tension at all times. For example, in footwork, athletes can adjust the frequency of "pacing" according to the actual situation to prepare for the next shot.

5. Conclusion

With the continuous innovation of tennis technology, its footwork has a vital impact on players. Therefore, in the training process of tennis players, we should start from the footwork and influencing factors, improve the training strategy, and lay the foundation for the improvement of tennis players' foundation.

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