FOREHAND BACKSWING - FROM THEORY TO PRACTICE

Abstract
The aim of this professional work is to determine the main characteristics of forehand backswing and to apply the optimal methodological procedure which would contribute to the improvement of these characteristics. The efficient application of the optimal methodological procedure in tennis requires knowledge of biomechanical principles, especially of the principle of elastic energy of muscles, referring to forehand backswing. Also, it is as important that coaches use creativity to find optimal exercises to resolve a particular problem. In this professional work, seven main characteristics of forehand backswing have been presented: loop backswing, use of opposite arm, flexed elbow at the beginning of the backswing, uninterrupted backswing, pronation of the racket arm at the beginning and at the end of the backswing, backswing with rotation of the trunk and shoulders, and positioning of racket and shoulder alignment at the completion to the backswing perpendicular to the back fence. In addition to determining the characteristics of forehand backswing, the work further provides detailed exercises about the easiest way to perform optimal forehand backswing.

Keywords: tennis, tennis racket, biomechanical principles, coaches, tennis professionals, exercise training
The majority of elite players emphasize trunk rotation and use an open stance in forehand stroke production in preference to stepping into the ball. Rotation of the trunk and lower limbs increase racket – shoulder rotation over the forward swing, so that this forward movement increases the final racket velocity by approximately 10%. The shoulders rotate through an angle of more than 95° from the backswing position, so that at impact the alignment is almost parallel to the net. (Elliot et al., 1989). When performing groundstroke backswing, the shoulders rotate more than the hips to create a “bending effect”, stretching the muscles of the trunk and the shoulder area (Elliott, Reid, & Crespo, 2003). The free arm, initially used to help take the racket back (and assist shoulder and trunk rotation), helps to maintain balance by remaining out in front (as if pointing the ball) and at almost the same height of the playing arm.

In order to have a perfectly perpendicular racket face at impact, you have to make pronation of the arm and close the racket face by at least 30° before starting the forward swing with the racket (Braden, & Bruns, 1977). This swing geometry is necessary to compensate for the natural supination of the racket hand during the forward swing to impact. Today’s players who generate both high speed and high spin rates on their forehands, before they initiate their forward swing, have severely closed racket face by 60° to 90°, which results in a racket face that’s closed by 7° to 15° at impact. In other words, when players pronate their racket hand just before they start their forward swing, their pronated racket hand position enables them to control the natural supination of the racket hand during the forward swing and control the angle of the racket as it approaches impact. By pronating the racket hand at this stage, this position prevents premature external rotation of the shoulder, therefore external rotation of the shoulder prior to the internal rotation of the shoulder enables utilization of the many effects called the stretch-shortening cycle.

From the above mentioned, we can see that the main characteristics of modern backswing forehand are the following:
- Use of opposite hand;
- Flexed elbow at the beginning of the backswing;
- Loop backswing;
- Uninterrupted backswing (fluid backswing);
- Pronation of racket hand at the beginning and at the end of the backswing;
- Backswing with rotation of the trunk and shoulders;
- Positioning of racket and shoulder alignment at the completion of the backswing perpendicular to the back fence.

METHODS

Exercise 1: The aim of this exercise is to teach the player how to easily perform a loop backswing. The coach is holding a racket vertical to the ground, near to the player’s forehand side. The player needs to stand in a basic position facing the net, to make a loop around the coach’s racket, and to hit the ball thrown by the coach. The player needs to use the opposite hand and make the loop by rotation of the trunk and the shoulders, not only by movement of the hands.

Exercise 2: The aim of this exercise is to teach the player how to easily use the opposite hand while performing a backswing. The coach is holding a racket vertical to the ground, near to the player how to easily perform a loop backswing. The player needs to stand in a basic position on the service line, holding the racket in the opposite hand. The player starts the backswing transferring the racket from the opposite hand to the racket hand, performs a backswing and hits the ball thrown by the coach in the service field.

Exercise 3: The aim of this exercise is to teach the player to pronate the hand while performing a backswing. The coach is holding a racket vertical to the ground, near to the player how to easily perform a loop backswing. The player starts the backswing transferring the racket from the opposite hand to the racket hand, performs a backswing and hits the ball thrown by the coach in the service field.

Exercise 4: The aim of this exercise is to teach the player to rotate the shoulders and the trunk. The player is standing in an open stance in the service field and is throwing to the coach a medicine ball with both hands.

Exercise 5: The aim of this exercise is to teach the player to complete the backswing with the racket perpendicular to the back fence. The player is standing sideways to the net, starts the backswing, at the final point of the backswing the racket should not touch the net, then hits the ball thrown by the coach.

Exercise 6: The aim of this exercise is to teach the player to complete the backswing with the racket perpendicular to the back fence. The player is standing sideways to the net, starts the backswing, at the final point of the backswing the racket should not touch the net, then hits the ball thrown by the coach.

Exercise 7: The aim of this exercise is to teach the player to perform an interrupted-racket backswing. The coach is throwing balls at a fast pace using his hands, and the player needs to make an uninterrupted-racket backswing and to hit the ball thrown by the coach.

CONCLUSION

While these technical characteristics and exercises probably represent the core principles of optimal forehand performance, there are even more characteristics, movements and techniques for further improvement of both racket control and racket speed. Without an attitude of (curiosity) openness to new exercises and ideas, it would be difficult to improve the shots. We should not forget that today’s principles are no longer the same as yesterday’s and that we should expect continuous evolution of forehand backswing.

REFERENCES


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