

2022 World Men's Volleyball League: Serve Technique and Tactics Analysis — Taking the Match between the Chinese Men's Volleyball Team and the Polish Men's Volleyball Team as an Example

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Abstract: The Chinese men's volleyball team finished 13th in the 2022 World Men's Volleyball League with 3 wins and 9 losses. This shows that there is still a big gap between the Chinese men's volleyball team and the strongest volleyball teams in the world. This study compares the serve drop and serves technology of the Chinese team and the Polish men's volleyball team, which is ranked first in the world in the World Men's Volleyball League in 2022, and uses the method of literature, the method of analyzing the video of the match, and the method of comparative analysis to analyze the technical statistics. The results found that: the Chinese team is weaker than the Polish team in the serve direct score and break rate; in the serve drop and line, China is obviously weaker than the Polish team in the line flexibility; in the flexible use of serve technology, the Chinese team can skillfully use two kinds of technology in a smaller number.

1. Introduction

1.1 Basis for Selection

The serve is the beginning of the game and the most important part of the game. After the volleyball rule changes, the serve has become a very important offensive technique, it is both the starting point of the opening game and the offense. A strong offensive serve is also a great opportunity to disrupt the opponent's play. At the same time both stability as well as offensive serve not only can break the first attack, but also can cause psychological pressure to the opponent. This paper mainly focuses on the video of the match between Chinese men's volleyball team and Polish men's volleyball team in the 2022 World Men's Volleyball League to find out the shortcomings and

deficiencies of China's men's volleyball team, and to provide a more reasonable program for the training in the future.

1.2. Research Target

The use and effect of serving techniques of the world's top-ranked Polish and Chinese teams in the tournament were studied.

1.3. Research Methodology

1.3.1 Video Analysis Method

A replay of the 2022 World Volleyball League match between China and Poland was viewed using centralized video, repeated and recorded. Based on the data, the number of people using each serve, the effect of the serve and the point of the serve landing were analyzed.

1.3.2 Documentation Method

The information on volleyball serve was reviewed through Wanfang, China Knowledge Network, etc. as the main sources.

1.3.3 Comparative Analysis

By comparing and analyzing the effect of serving and the point of landing during the match between the Chinese team and the Polish team.

2. Results and Analysis

2.1 Characterization of The Number of People Using the Jump Power Ball and Jump Floaters

Table 1: Percentage of Jumpers and Floaters Utilized in Starting Lineups

sports team (basketball, soccer, football etc)	Only use jumping balls	Use only jump shots	Use of both jumping power ball and jumping floating ball
China (%)	33.3	50	16.7
Poland (%)	0	33.3	66.7

In the Polish team, most of the players can interspersed the jump serve with the jump float ball, with high flexibility. 83.3% of the players of the Chinese team can only use one serve technique in the game when they use the serve technique. At present, the comprehensiveness of serving technique has become the development trend and characteristic of serving technique in the world men's volleyball team.

2.2 Comparative Analysis of The Effectiveness of Chinese and Polish Serve

Table 2: Comparison of the effectiveness of China's and Poland's serves

sports team (basketball, soccer, football etc)	score	scoring rate	attack violently	lit. breakthrough attack rate	fault	failure rate	stand accused of	lapse rate
the Chinese team	1	1.75	4	7.02	13	22.81	39	68.42
Poland	13	16.9	6	7.79	10	12.99	48	62.32

From the data in the table, it can be seen that in the match between China and Poland, the total number of serves of Chinese men's volleyball team and Polish team was 58 times and 75 times in turn. In the match between China and Poland, the total number of direct scores of Chinese team's serve was 1, accounting for 1.75% of the total number of serves, and the number of direct scores of Polish team's serve was 13, with a scoring rate as high as 16.9%; in terms of broken serves, the number of broken serves of Chinese team and Polish team was 4 and 6 in turn, but Polish men's volleyball team is 0.77 percentage points higher than Chinese men's volleyball team in terms of percentage. From the data, it can be seen that Polish team's serve break rate is higher than that of Chinese team. As for the serving error rate, the number of serving errors of China and Poland were 15 and 10 in turn, accounting for 22.81% and 12.99% of the total number of their respective serves, which shows that the serving error rate of China was much higher than that of Poland. To summarize, China's serve percentage and break rate are lower than Poland's, and China's error rate is higher, so China's team is significantly higher than China's team in terms of the overall strength of their serves.

2.3 Characterization of Serve Drop Points

The volleyball court by player position divides the front row area into areas 2, 3, and 4, and the back row into areas 5, 6, and 1, as shown below:

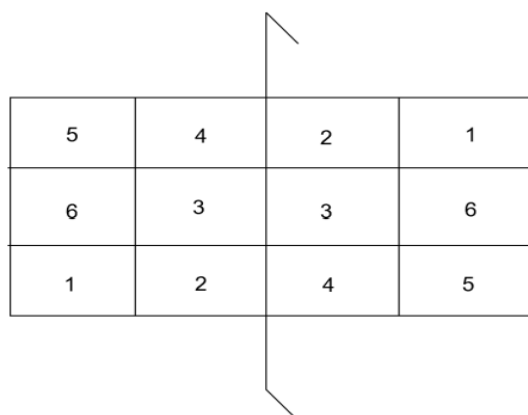


Figure 1: volleyball court divisions

The more tricky the landing point of the ball, the more pressure to the opponent to receive the ball, the more effective to break the opponent's first attack, thus conducive to the organization of the attack. Now serve technology embodied in the serve to find people, find the area, the most commonly used serve to find people that is sent to the other side of the main attack, so as to achieve the other side of the main attack can not be prepared to go on the offensive, thus reducing its attack. As well as in the send the other side of the second pass back row inserted running route, so as to achieve the other side of the second pass can not organize the effect of the attack.

2.4 Analysis of China's and Poland's Serve Drops

Table 3: Comparison of serve drop between China and Poland

sports team (basketball, soccer, football etc)	whereabouts	score	scoring rate	attack violently	lit. breakthrough attack rate	stand accused of	lapse rate	add up the total
the Chinese team	1	1	5.88	1	5.88	15	88.24	17
Poland	1	4	22.22	0	0	14	77.78	18
the Chinese team	2	0	0	0	0	0	0	0
Poland	2	0	0	0	0	2	100	2
the Chinese team	3	0	0	0	0	1	100	1
Poland	3	0	0	0	0	1	100	1
the Chinese team	4	0	0	0	0	3	100	3
Poland	4	0	0	0	0	2	100	2
the Chinese team	5	0	0	0	0	7	100	7
Poland	5	3	23.07	3	23.07	9	53.86	13
the Chinese team	6	0	0	2	14.28	12	85.72	14
Poland	6	5	18.51	3	11.11	19	70.37	27

As can be seen from the table, the Chinese team's ball landing in the 1, 6 position most, and the highest scoring rate in the No. 1 position, while the Polish team's ball landing is mainly concentrated in the No. 1, No. 5, No. 6 position, of which the No. 6 position ball the most, its scoring rate of 18.51% and break rate of 11.11%, and in the No. 5 position of its scoring rate and the Polish team for as high as 23.07% in the search for people, looking for the point to play better.

From the overall situation of the Chinese team and the Polish team's ball landing in the No. 5, No. 1 and No. 6 position, the overall scoring rate of the Chinese team is obviously inferior to the Polish team, the Polish team's ball landing in the No. 6, No. 5 and No. 1 position when the ball is better. Moreover, by watching the video, it was found that the landing point of China's jump-serve power ball was concentrated in the middle of the back area, which also had a great relationship with the break rate of the serve. The proportion of its landing area is similar to that of Brazil, while the Italian team's landing point is concentrated in the middle and the right part of the back area, that is to say, it is manifested as chasing after the main attacker, thus destroying the main attacker's attacking rhythm and greatly reducing its attacking power of the first attack. The Polish team's jump serve is concentrated in the middle and left of the back area, and the ball is fast and with side spin when serving, and the point of landing is often between two people, so the scoring rate of its serve is higher.

3 Conclusions and Recommendations

3.1 Reach a Verdict

3.1.1 Can Skillfully Utilize the Ratio of Two Types of Serves (Jump Serve Power Ball and Jump Float Ball)

At present, the volleyball technique and tactics are developing to comprehensive, and the jump serve and power ball are more and more used in the game⁰. In the 2022 World Men's Volleyball League, the number of Chinese players who can skillfully utilize the jumping power ball and the jumping float ball is relatively small, while on the contrary, the number of Polish players who can intersperse the jumping power ball and the jumping float ball in the use of the serving technique is relatively large, and the aggressiveness is also obviously increased. In the world's strongest team Poland, most of the players are able to interspersed the use of the jumping power ball and the jumping floating ball, which shows that the comprehensiveness of the serving technique has become the development trend and characteristic of the world's men's volleyball team's serving technique.

3.1.2 The Effect of The Serve

The number of direct points and broken attacks of China's serve is obviously less than that of Poland's, and the gap is obviously larger. Compared with Poland, China's break rate was better than Poland's, but the error rate was higher. On the other hand, the scoring rate and broken attack rate of Chinese team's jump serve were lower, obviously lower than that of Polish team, and the error rate of Chinese team's jump serve was also higher, which indicated that the overall effect of our men's team's serve was not good.

3.1.3 Where the Ball Lands

Chinese men's volleyball team jumped to send a powerful ball landing point more than the back of the main area, and serve line is relatively fixed, for example, the main attacker Zhang Jingyin and vice attacker Peng Shikun jumped to drift the ball landing point in the No. 5 position in pursuit of the main attacker, while the Polish team serve the ball is characterized by a fast ball speed, and accompanied by a side spin, as well as the landing point is more in the middle of the two people,

with its own characteristics. The Chinese team in the control of the line of the serve and the changes in the landing point with the world-class team there is an obvious gap.

3.2 Recommendation

3.2.1 Improve Players' Mastery of Both Types of Serves

The interlocking attack and defense conversion system of competitive volleyball games starts with the serve, which has become the dominant link in the attack and defense conversion, and the serve has even become the decisive factor in the victory or defeat of the game⁰. There is an old Chinese saying that "Surprise is the best way to attack". Being able to skillfully use two kinds of serves and be able to skillfully convert can play a very good effect, so as to achieve the opponent difficult to react, thus leading to the opponent's mistakes.

3.2.2 Enhancing the Aggressiveness of The Serve

The most important influence on the aggressiveness of the serve is the speed of the serve, with performance drop and variability of the serve following closely behind⁰. It is important to clarify the guiding idea of jumping and serving vigorously as the main serving technique. Not only to improve the aggressiveness of the serve, but also to improve the stability of the serve technology, and for different teams to develop different serve strategies, through the study of the opponent's position reasonable choice of serve, and before and after the left and right to select the landing point of the serve in a planned way.

3.2.3 Selection of The Drop Point of The Serve

It should focus on changing the landing point of the serve and the line of the serve to find the area and people, find the weak links of the opponent, and interfere with the main attackers of the opponent⁰. For example, the Polish team, the ball is fast when serving, and accompanied by side spin, and its landing point is often in the middle of two people, in the service landing is very own characteristics, it is worthwhile for us to learn, and in the future training in the service using speed changes and action changes, landing point changes so as to achieve the desired effect of the serve, so as to achieve the improvement of the quality of our men's volleyball serve.

3.2.4 Increase the Percentage of Jump Shots

The jump serve technique is still the mainstream, which has a very important role in breaking attack and can score directly, but the error rate of jump serve is higher⁰, so on the one hand, it increases the stability of the serve and improves the aggressiveness of the serve. Moreover, players with strong serving ability can intersperse the use of the jump float technique and the vigorous jump serve technique. The versatility and comprehensive technology of serving technology is the future development direction of the world men's volleyball serving technology.

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