

## **MATCH PERFORMANCE ANALYSIS OF ELITE JUNIOR TENNIS PLAYERS IN MADRID**

Yixiong Cui and Jose Antonio Aparicio

Faculty of Physical Activity and Sport Sciences, Technical University of Madrid, Madrid, Spain.

Correspondence: amtf000cui@gmail.com

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### INTRODUCTION

Notational analysis is an objective and useful method to analyze match performance of tennis players (O'Donoghue & Ingram, 2001; Hughes & Franks, 2008, 9; Gillet, Leroy, Thouwarecq & Stein, 2009). The study aims to analyze the tactical and technical match performance of elite Spanish junior male and female tennis players on hard courts. And their performance was compared with that of professional players in Indian Wells Open.

### METHOD

Match data of 58 elite junior players ( $16.3 \pm 1.1$  yrs,  $63.6 \pm 8.9$  kg,  $173.3 \pm 8.3$  cm) competing in U-18 tournaments of hard court in Madrid from February to May of 2014 (38 males and 20 females respectively) and of professional players in Indian Wells Open was collected by a validated mobile notational analysis application for tennis "Pasa la Red" (version: 2.2.0 for Android System). According to suggestions of professional tennis coaches and available literatures (Hughes & Bartlett, 2002; O'Donoghue, 2005; 2010), 15 performance indicators were selected for analysis, and they were classified into two groups. The first one consisted of different tactical indicators when analyzing matches on the basis of the total points played and total points won: attack (the situation when a player plays approaching shot or volleys), defense (the situation when opponent attacks), rally (the situation when two players remain at the baseline) and serve and return (aces, double faults, winner returns and return errors); the second group included general performance indicators: aces, double faults, unforced errors, forced errors of opponents, winners, productivity (ability of serving aces, stroking winners and forcing more opponent's errors), first serve in, return points in, attack points won, defense points won and rally points won. Independent samples t-test was undertaken to compare the difference in performance indicators between male and female junior players, junior and professionals, male junior winners and losers, Man-Whitney U test was employed to compare the performance winners and losers of junior female players ( $n=20$ ) and test of Pearson's correlation was performed in the analysis of unforced errors and productivity.

## RESULTS

Tactically, junior male players played more offensively ( $t_{54}=4.96$ ,  $p<0.001$ ), achieving greater productivity ( $t_{53}=4.36$ ,  $p<0.001$ ) than junior female players. The latter was found to end more points in serve and return ( $t_{29}=2.93$ ,  $p<0.01$ ) because of committing more unforced errors ( $t_{56}=2.04$ ,  $p<0.05$ ) and double faults ( $t_{20}=1.98$ ,  $p<0.05$ ); the rally play was their major tactical choice compare to boys ( $t_{44}=4.36$ ,  $p<0.001$ ). Correlation was found between unforced errors and productivity in junior male players ( $r=-0.361$ ,  $p<0.05$ ). Male junior players were revealed to have a weaker serve and return capability in comparison to the professionals ( $t_{56}=3.81$ ,  $p<0.001$ ), and female juniors were found to serve fewer aces ( $t_{30}=-3.31$ ,  $p<0.01$ ) and more double faults than the professionals ( $t_{36}=2.76$ ,  $p<0.01$ ).

## DISCUSSION

Being tactically active, male junior players played and won significantly more points than female junior players in attack and defense and less points in rally, which was in accordance with the theory of Davies (1962) that men approach the net more than women, who usually approach the net after carefully building the point to maximize their chances of winning the point at the net. But compared to professional players, junior winners still built their victory mainly on the opponent's unforced errors and lacked tactical consciousness and efficiency. The study showed juniors losers committed more unforced errors and double faults than winners and unforced errors was the major cause of rally ending, which confirm the findings of Katić, Milat, Zagorac and Djurović (2011) and Brody (2006). According to Katić et al. (2011) and Martínez-Gallego et al. (2013), match winners in whatever surface, played a greater number of winner shots than match losers, and in professional level, game winners tend to spend more time in offensive zones than game losers. But contrary to their results, the current study showed that the junior players did not played significantly more winners and forced more opponents' errors. Male professional players were showed to end more points in serve and return than male junior players and the serve is more important in men's singles (Gillet et al., 2009). However, it does not mean that the serve and return ability is not important in ladies' singles. With such a high percentage of double faults and return errors showed in the study, female junior players still need to pay special attention to their serve and return ability. Hence, future training should focus more on the serve and return ability of junior players and on the basis of playing with more control and productivity, junior players are also suggested to

foster tactical awareness and coaches should treat it as a prerequisite in daily training and match strategy planning.

#### REFERENCES

- Davies, M. (1962). *Lawn Tennis*. London: Museum Press.
- Gillet, E., Leroy, D., Thouwarecq, R., Stein, JF. (2009). A Notational Analysis of Elite Tennis Serve and Serve-Return Strategies. *Journal of Strength Conditioning Research*, 23(2), 532-539.
- Hughes, M. D., & Bartlett, R. M. (2002). The use of performance indicators in performance analysis. *Journal of Sports Sciences*, 20(10), 739-754.
- Hughes, M & Franks, I. (2008). *The Essentials of Performance Analysis: An Introduction*. Routledge. Canada.
- Katić R, Milat S, Zagorac N, Djurović N. (2011). Impact of Game Elements on Tennis Match Outcome in Wimbledon and Roland Garros 2009. *Collegium Antropol*, 35(2): 341-346.
- Martínez-Gallego, R., Guzmán, J. F., James, N., Ramón-Llin, J., Crespo, M., & Vuckovic, G. (2013). The relationship between the incidence of winners/errors and the time spent in different areas of the court in elite tennis. *Journal of Human Sport & Exercise*, 8(3).
- O'Donoghue, P., & Ingram, B. (2001). A notational analysis of elite tennis strategy. *Journal of Sports Sciences*, 19(2), 107-115.
- O'Donoghue, P.G. (2005). Normative Profiles of Sports Performance. *International Journal of Performance Analysis of Sport*, 5(1), 104-119
- O'Donoghue, P.G. (2010). *Research Methods in Performance Analysis of Sport*. London: Routledge.