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Editorial

Prediction of The Trifecta And Pentafecta İn Minimal İnvasive Partial Nephrectomy

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In the treatment of small renal masses which are incidentally diagnosed by sophisticated imaging techniques, partial nephrectomy (PN) is the gold standard treatment with oncologic equivalence, functional superiority and improved overall survival compared with radical nephrectomy [1]. Over the years, surgery has met the long life expectancy of patients and functional outcomes has become the main subject to pay attention in the selection of treatment modality. 'Trifecta' is the term for describing the achievement of no complications, negative surgical margin, warm ischemia time (WIT)< 25 min is the key surrogate for success of the PN [2].

Hung et al stated that trifecta should be a routine goal during PN surgery and despite increasing tumor complexity, the trifecta outcome of oncological success, low urological complications and preserved renal function has improved significantly [2].The functional results of the PN are influenced by numerous factors including baseline patient characteristics, operation techniques, surgical experience, defination of WIT, and methods used to collect data. Osaka et al assessed trifecta outcomes for laparoscopic PN for clinical T1a renal masses and concluded that tumor size and surgeon's learning curve were strong predictors of trifecta outcomes [3].

In a recent study, Zargar et al investigated the effects of 'trifecta' and MIC (no major perioperative complications, negative surgical margins and WIT<20 min) on the functional outcomes of PN, and emphasized that achievement of both MIC and 'trifecta' is associated with higher proportion of split renal function preservation for cT1 tumors after minimally invasive PN [4].

Zargar et al reported that their more strict definition for 'optimal outcome' might be a better tool for assessing perioperative and functional outcomes after minimally invasive PN and introduced 'Pentafecta' term [5]. The 'optimal outcome' was defined as achievement of 'trifecta' with addition of 90% estimated glomerular filtration rate preservation and no chronic kidney disease stage upgrading [5]. Conditions, such as diabetes, hypertension and chronic kidney disease could potentially effect on the functional outcomes after PN. Considering all patients underwent surgery by high-volume surgeons, the modifications in the operative technique also affects the functional outcomes.

We believe that tumor size and the degree of complexity with surgical experience are significant predictors of trifecta and pentafecta achievement. However, for the prediction of trifecta and pentafecta in minimally invasive PN, a validated nomogram which including all the afore mentioned variables is required respectfully.

Keywords: Functional outcomes; Minimally invasive surgery; Partial nephrectomy; Renal mass; Trifecta

Conflict of interest: The authors declare that they have no conflict of interest.

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