What Is the Predictor of Prolonged Operative Time During Laparoscopic Radical Prostatectomy?

Introduction and Objective: The associations between BMI, prostate weight (PW), and operative time (OT) in laparoscopic radical prostatectomy (LRP) have been previously reported. LRP consists of several steps; however, it remains unclear which step is affected by high BMI and large prostate.
Materials and Methods: The records of patients who underwent LRP between 2008 and 2011 were reviewed. Age, BMI, PW, cross section area of Retzius, with or without a history of previous lower abdominal surgery, repeated prostate biopsy, and neoadjuvant hormone therapy were recorded. LRP was separated into 7 steps (Step 1: Port insertion and obturator lymph node dissection, 2: Endopelvic fascia incision and dissection of levator ani, 3: Dorsal vein complex ligation, 4: Prostate dissection from bladder neck, 5: Dissection of seminal vesicle and vas deferens, 6: Prostate dissection from rectum, and 7: Vesicourethral anastomosis) and we reviewed total OT and the time required for each step. Potential predictors for prolonged total OT and each step duration were assessed by multivariate logistic regression analysis.
Results: One hundred fifty-two patients were analyzed. The mean of total OT was 190.7 min. BMI and prostate weight were independent predictors for prolonged total OT (P=0.001, odds ratio (OR)=1.293 and P=0.015, OR=1.034). BMI was an independent predictor for a prolonged Step 3 (P=0.006, OR=1.221), Step 4 (P=0.047, OR=1.132), Step 5 (P=0.029, OR=1.173), and Step 6 (P=0.010, OR=1.192). Prostate weight was an independent predictor for a prolonged Step 2 (P=0.024, OR=1.028) and Step 5 (P=0.028, OR=1.027). A history of previous lower abdominal surgery was a predictor for a prolonged Step 1 (P=0.013, OR=3.968).
Conclusions: BMI and PW were independent predictors for prolonged total OT. BMI seemed to affect most steps of LRP; meanwhile, PW affected dissection close to the prostate since larger prostate results in more narrow working space.