Benefits of the Modified Valdivia Position in PNL

Introduction and Objective: Percutaneous kidney lithotripsy (PNL) has the benefit of treating a large calculus such as a staghorn calculus in a short time period. The general PNL operation starts with lithotomy position and inserts the catheter for causing hydronephrosis. Thereafter we convert to prone position for making nephrostomy. We perform stone lithotomy and remove in several hours. After stone removal is finished, we return to the lithotomy position for put on ureteral catheter. However, the prone position operation and the position conversion increase the risk for the patient, such as the extubation, the cardiopulmonary disorder by chest oppression, and the delay of the react at the time of the sudden change by the head observation insufficiency. Therefore, we performed PNL in the modified Valdivia position, which is a mixed hemilateral decubitus position and lithotomy position, and compared the results with PNL performed in the prone position.
Materials and Methods: The subjects were 20 patients who underwent PNL operation from 2008 to 2011. Fifteen patients were in the prone position, and 5 patients were in the modified Valdivia position. The examination was performed and the following values were determined: operation time, Hb change, blood transfusion, complications, calculus size, and curative effect.
Results: In the cases in the modified Valdivia position, the operation time tended to shorter compared with the prone position (153 ± 39 vs. 136 ± 43 min.), and no large differences were noted in the Hb change (1.6 ± 0.74 g/dl. (prone position) vs. 1.4 ± 0.59 g/dl. (modified Valdivia position)), blood transfusion (1 case in 15 cases (prone position) vs. 0 case in 5 cases (modified Valdivia position)) and curative effect (stone free rate after 4 weeks was 67% (prone position) and 60% (modified Valdivia position)).
Conclusion: Because PNL performed in the modified Valdivia position does not require position conversion to the prone position from the lithotomy position, we can reduce the risk of losing general anesthesia control during operation, and perform the treatment in a shorter period. This study demonstrates that modified Valdivia position is a beneficial position for the patient.