Tailor-Made Mesh for Pelvic Organ Prolapsed Patients

Introduction and Objective: TVM surgery is a common and minimally invasive procedure. Since commercial kits are not readily available in Japan, we custom design the mesh before every TVM surgery. Well-designed mesh and good technical operation result in a better clinical course. The aim of this study was to determine methods to design mesh for individual pelvic organ prolapsed patients. We also investigated the correlations among mesh-size and height, weight, and BMI.
Materials and Methods: Before the operation, we obtained a KUB (abdominal X-ray). Three factors were measured from the X-ray: the first was the distance between the bilateral ischial spine, the second was the distance between the obturator foramen, and the third was the length of the ATFP. Since the ischial spine is located in a more posterior position than the symphysis of the pubic bone, the actual length of the ATFP is slightly longer than that determined in the X-ray. A total of 56 female patients who received TVM surgery in our hospital between January 2009 and July 2011 were consecutively enrolled. The correlations among the bilateral ischial spine distance, obturator foramen distance, ATFP length, and height, weight, BMI were assessed using the Pearson correlation coefficient. We used conventional software (Excel) and regarded p values <0.05 as statistically significant.
Results: Height was correlated with both the bilateral ischial spine and obtulator foramen distance ($r=0.4662$, $p=0.0003$ and $r=0.4186$, $p=0.0013$). Weight was also correlated with both the bilateral ischial spine and obtulator foramen distance ($r=0.3898$, $p=0.003$ and $r=0.3016$, $p=0.0239$). The bilateral ischial spine distance was correlated with the obtulator foramen distance ($r=0.4725$, $p=0.0002$). The length of the ATFP was not correlated with either the bilateral ischial spine distance or the obtulator foramen distance. BMI was not correlated with any parameters.
Conclusion: Although the three factors described above are necessary to design a mesh for individual patients, the bilateral ischial spine and obtulator foramen distance correlated with the height of the patient. On the other hand, since the length of ATFP differs in each patient and is not correlated with height, we should consider this length when we design the mesh.