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아시아 환자에서 로봇 복막 질성형술 후 기능적 및 심리사회적 결과 분석

(Beyond Feasibility: Functional and Psychosocial Outcomes after Robotic Peritoneal Vaginoplasty in Asia)

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Purpose: Robotic peritoneal vaginoplasty (RPV) has recently gained attention as an advanced gender-affirming technique offering enhanced precision and visualization. However, data from Asian centers remain limited, and little is known about patients' functional and social outcomes following surgery.

Methods: A descriptive analysis was performed of 61 transfeminine or non-binary patients who underwent RPV between 2023 and 2025. Baseline demographics, preoperative laboratory findings, operative parameters, concurrent procedures, complications, and six-month postoperative outcomes were reviewed.

Results: Mean age was 27.4 ± 6.9 years and mean BMI 21.8 ± 3.9 kg/m². Average hormone therapy duration was 40 months; 34 % had partners and 54 % identified as heterosexual. (Table 1) Mean operative time was 427.9 ± 71.4 minutes and blood loss 300 ± 244 mL. Concurrent procedures were performed in 36 %, most commonly breast augmentation (21 %) and voice feminization (18 %). Minor in-hospital complications occurred in 8 patients (13 %); 1 (2 %) underwent hematoma evacuation under general anesthesia. Mean hospital stay was 11.7 ± 2.4 days. At 6 months, 97 % reported sensory recovery, 57 % attempted intercourse, 52 % achieved successful intercourse, and 87 % completed legal gender recognition. (Table 3)

Conclusion: Among the earliest Asian experiences of robotic peritoneal vaginoplasty, this series demonstrates that RPV provides safe and reproducible results with excellent sensory and functional recovery. In addition to favorable surgical outcomes, most patients achieved meaningful sexual activity and social affirmation within 6 months, supporting the value of robotic approaches in gender-affirming care.

Table 1. Baseline characteristics of patients undergoing robotic peritoneal vaginoplasty (n = 61)

Variable	Value
Age at operation (years)	27.4 ± 6.9 (16.3–59.9)
Height (cm)	170.7 ± 6.3 (154.1–185.8)
Weight (kg)	63.7 ± 12.3 (40.2–103.5)
BMI (kg/m²)	21.8 ± 3.9 (14.4–32.6)
	14 (23%)
18.5–24.9	36 (59%)
25–29.9	10 (16%)
≥30	1 (2%)
Smoking status	
Never	43 (74%)
Ex-smoker†	5 (8%)
Current	11 (18%)
Gender identity (assigned male at birth)	
Trans women	59 (97%)
Non-binary	2 (3%)
Hormone therapy duration (months)	40.4 ± 29.1 (3.7–128.5)
Physical comorbidity‡	13 (21%)
Psychiatric comorbidity§	19 (31%)
History of suicide attempt	8 (13%)
Prior circumcision	22 (36%)
Prior orchiectomy	5 (8%)
Prior abdominal surgery	7 (11%)
Partner status	
Alone	36 (59%)
Has partner	21 (34%)
Not reported	4 (7%)
Sexual orientation	
Heterosexual	33 (54%)
Bisexual	14 (23%)
Pansexual	8 (13%)
Homosexual	3 (5%)
Questioning	1 (2%)
Not reported	2 (3%)

Values are presented as mean ± standard deviation (range) or number (percentage).

† Ex-smoker = stopped smoking ≥ 6 months before surgery.

‡ Physical comorbidities included diabetes mellitus (type 1), asthma, hyperthyroidism, Glanzmann's syndrome, Cushing disease, ankylosing spondylitis, gastroesophageal reflux disease, gallbladder stone, atrophic gastritis, and hypertension.

§ Psychiatric comorbidities were confirmed diagnoses by board-certified psychiatrists, including major depressive disorder, mild depressive episode, bipolar affective disorder, anxiety disorder, and attention-deficit/hyperactivity disorder.

Table 2. Preoperative clinical and operative characteristics (n = 61)

Variable	Value
Preoperative systolic BP (mmHg)	115.5 ± 10.3 (100–140)
Preoperative diastolic BP (mmHg)	76.6 ± 8.1 (60–93)
Preoperative hemoglobin (g/dL)	13.9 ± 1.4 (10–19)
Preoperative platelet (×10³/μL)	265.2 ± 74.5 (83–510)
Preoperative glucose (mg/dL)	107.3 ± 45.6 (70–341)
Concurrent procedures	
Any concurrent surgery	22 (36%)
Breast augmentation	13 (21%)
Voice feminization surgery	11 (18%)
Thyroid notch saving	12 (20%)

Values are presented as mean ± standard deviation (range) or number (percentage).

Table 3. Operative outcomes and postoperative course (n = 61)

Variable	Value
Total operative time (min)	427.9 ± 71.4 (305–700)
Estimated blood loss (mL)	300.0 ± 244.0 (50–1300)
Transfusion (intra- or postoperative)	6 (10%)
Hemoglobin POD#1 (g/dL)	11.6 ± 1.2 (8–15)
Hemoglobin POD#3 (g/dL)	10.9 ± 1.6 (7–14)
Hemoglobin POD#7 (g/dL)	10.6 ± 1.5 (7–14)
In-hospital complication (any)	8 (13%)
Port site infection	1 (2%)
Neovaginal hematoma	5 (8%)
Suprapubic hematoma	2 (3%)
Voiding difficulty	1 (2%)
Foley catheter removal (POD#)	6.9 ± 1.3 (5–12)
Length of hospital stay (days)	11.7 ± 2.4 (8–17)
Return to OR (hematoma evacuation)	1 (2%)
Aesthetic revision performed	7 (11%)
Able to have intercourse (6-month follow-up)	
Yes (successful intercourse)	32 (52%)
No (attempted but not possible)	3 (5%)
Not attempted / unknown	26 (43%)
Legal sex change completed (6-month follow-up)	53 (87%)
Sensation recovered (6-month follow-up)	59 (97%)

Values are presented as mean ± standard deviation (range) or number (percentage).

POD, postoperative day.