it tends to be long, frequently widens, and hypertrophies scar can be camouflaged for women when wearing the bra, nor site incision with a length of 15–45 cm. Although the Traditional open LD flap harvest requires a posterior do-
rea, Republic of (South)
Affiliation: Korea University, Seoul, Korea, Republic of (South)

Robotic-assisted Latissimus Dorsi Muscle Flap for Autologous Breast Reconstruction

Presenter: Kyung-Chul Moon, MD, PhD
Co-Authors: Hyun-Dong Yeo, MD; Eul Sik Yoon, MD, PhD; Byung Il Lee, MD, PhD; Seung Ha Park, MD, PhD

Affiliation: Korea University, Seoul, Korea, Republic of (South)

BACKGROUND: Latissimus dorsi (LD) muscle flap has been widely used for autologous breast reconstruction.1 Traditional open LD flap harvest requires a posterior donor site incision with a length of 15–45 cm. Although the scar can be camouflaged for women when wearing the bra, it tends to be long, frequently widens, and hypertrophies with time.2 Therefore, a minimally invasive technique to harvest LD muscle flap via endoscopic approach has been developed. Despite continuous improvements in surgical techniques and technologies, 2-dimensional view and non-flexible instruments are limitations of endoscopic harvest of the LD muscle flap.3 Meanwhile, a robotic-assisted LD muscle flap has been first introduced for autologous breast reconstruction after mastectomy.4 The authors has demonstrated a modified robotic surgical technique using a trans-axillary gasless technique for robot-assisted LD muscle flaps in 2012.5 The purpose of this study was to introduce our 7-year experience with the robotic-assisted LD muscle flaps in autologous breast reconstruction.

PATIENTS AND METHODS: Between October 2012 and February 2019, a total of 33 patients underwent autologous breast reconstructions using robotic-assisted LD muscle flap. Among 33 patients, 21 patients had Poland syndrome. Seven and 3 patients underwent robotic-assisted LD flap following immediate and delayed breast reconstruction after mastectomy, respectively. Two patients had capsular contracture of implant. Subjective assessment was performed to evaluate satisfaction of overall outcome, breast symmetry, and scar. Mean follow-up time was 29.8 ± 12.5 months (range, 3–61 months).

RESULTS: All 33 flaps were successfully transferred without converting to open technique. As our experience with robotic-assisted LD flap increased steadily over the years, we have achieved improvements in surgical techniques and robotic instruments to comfort during surgery, optimize the results, and minimize complications and contour defects compared to the first time with robotic surgery. In addition, the time for robotic surgery system also mark-
edly decreased after experience accumulation. Recently, the time for robotic docking and robotic surgery was about 30 and 60 minutes, respectively. At the last visit, patients’ average grading of satisfaction of overall outcome, breast symmetry, and scar were 4.75 ± 0.23, 4.32 ± 0.63, and 4.88 ± 0.15, respectively. No serious complications such as flap loss were recorded for any patient.

CONCLUSION: Autologous breast reconstruction using robotic-assisted LD muscle flap might be effective and safe.

REFERENCES:
1. Arslan E, Unal S, Demirkan F, et al. Poland’s syndrome with rare deformities: reconstruction with latissimus dorsi muscle through a single short incision. Scand J Plast Reconstr Surg Hand Surg. 2003;37:304–306.
2. Moore TS, Farrell LD. Latissimus dorsi myocutaneous flap for breast reconstruction: long-term results. Plast Reconstr Surg. 1992;89:666–672; discussion 673–664.
3. Pomel C, Missana MC, Atallah D, et al. Endoscopic muscular latissimus dorsi flap harvesting for immediate
Intravenous Tranexamic Acid in Implant-based Breast Reconstruction Safely Reduces Hematoma Without Thromboembolic Events

**Presenter:** Joseph Banuelos, MD

**Co-Authors:** Jason M. Weissler, MD; Christin A. Harless, MD; Steven R. Jacobson, MD; Nho Van Tran, MD; Minh-Doan T. Nguyen, MD, PhD; Oscar J. Manrique, MD; Jorys Martinez-Jorge, MD

**Affiliation:** Mayo Clinic, Rochester, MN

**PURPOSE:** Antifibrinolytic medications, such as tranexamic acid (TXA), have recently garnered increased attention in plastic surgery. Despite its ability to mitigate intraoperative blood loss and need for blood transfusion, there remains a paucity of research on TXA in breast reconstruction. The aim of this study was to investigate whether intravenous TXA reduces the risk of postoperative hematoma following immediate implant-based breast reconstruction.

**METHODS:** A single-center retrospective cohort study was performed to analyze all consecutive patients undergoing immediate 2-stage IBR following mastectomy over 2 years (2015–2016). The incidence of postoperative hematomas and thromboembolic events among all patients was reviewed. The patients in the intervention group received 1,000 mg of intravenous TXA before mastectomy incision and 1,000 mg at the conclusion of the procedure. Fisher’s exact test and the Mann-Whitney–Wilcoxon test were used. Multivariate logistic regression models were performed to study the impact of intravenous TXA after adjusting for possible confounders.

**RESULTS:** A total of 868 consecutive breast reconstructions (499 women) were reviewed. Overall, 116 patients (217 breasts) received intravenous TXA, whereas 383 patients (651 breasts) did not. Patient characteristics and comorbidities were similar among the groups. Patients who received TXA were less likely to develop hematomas (n = 1; 0.46%) than patients who did not (n = 19; 2.9%) after controlling for age, hypertension, and type of reconstruction (prepector and subpectoral; P = 0.018). Adverse effects of intravenous TXA, including thromboembolic phenomena, were not observed. Multivariate analysis demonstrated that age and hypertension independently increase risk for hematoma.

**CONCLUSION:** Intravenous TXA safely reduces risk of hematoma in IBR. Further prospective randomized studies are warranted to further corroborate these findings.

Extended Drain Dwell Duration Following Muscle Flap Closure for Complex Spine Surgery Does Not Increase the Risk of Surgical Site Infections

**Presenter:** Matthew A. Wright, BA

**Co-Authors:** Jaime Lynn Bernstein, MD; Philipp Franck, MD; Daniel O. Lara, BS; Arash Samadi, BS; Leslie Cohen, MD; Roger Hartl, MD; Ali Baaj, MD; Jason A. Spector, MD, FACS

**Affiliation:** Weill Cornell Medical College, New York, NY

**PURPOSE:** Surgical drains are routinely used to prevent the accumulation of fluid at the operative site, an effect known to decrease the risk of seroma and theoretically lower the chance of abscess or small hematoma formation. Despite these potential benefits, significant debate exists in the literature regarding the risk that such drains might be imparting on the development of surgical site infections (SSIs), and the use of prophylactic antibiotics to “cover the drain” remains a common practice despite scant evidence that closed suction drains increase the risk for SSI. The purpose of the present study is to examine our database of over 12 years of muscle flap closure following complex spinal surgery to determine the effect of drain dwell duration on postoperative wound complications including SSI.

**METHODS:** For this retrospective review, 301 consecutive index cases of complex spine surgery with immediate muscle flap closure (paraspinalis, trapezius, latissimus dorsi, and/or thoracolumbar fascia) by the senior author from 2006 to 2018 were identified. The electronic medical record was reviewed for patient characteristics, perioperative details, and outcomes. Examination of the effect of median drain dwell duration on the primary endpoint, SSI, was first conducted via the Mann-Whitney test followed by univariable logistic regression analysis for both the primary endpoint and secondary endpoints including wound