

**EP-117**

**성형외과에서 Propofol-Ketamine 기반 감시하 마취의 장기적 안전성과 임상 적용: 15년간의 후향적 분석**

(Long-Term Safety and Clinical Application of Propofol-Ketamine-Based Monitored Anesthesia Care in Plastic Surgery: A 15-Year Retrospective Analysis)



한림대학교

김경민, 안정훈, 김기현,  
우상석, 이준원, 김성환,  
최재구, 서인석\*

**Purpose:** Modified monitored anesthetic care (MAC) using a single bolus of propofol combined with ketamine has been applied in outpatient plastic surgery to achieve rapid, short-duration sedation without endotracheal intubation. Propofol was selected for its rapid onset, short duration, minimal cumulative effect, and antiemetic properties, making it suitable for ambulatory procedures. Ketamine was added as an analgesic adjunct to preserve spontaneous respiration and maintain hemodynamic stability while reducing procedural pain.

**Methods:** From January 2012 to February 2026, 11,475 operations were performed at our institution, of which 1,743 cases (15.2%) were conducted under MAC. Representative procedures included skin tumor excision/biopsy (n=640), closed reduction of nasal bone fracture (n=232), and debridement with local flap reconstruction (n=180). Sedation (propofol 1 mg/kg and ketamine 1 mg/kg) was administered immediately prior to painful steps without continuous infusion.

**Results:** Sedation was rapidly achieved and maintained for a procedure-appropriate duration with prompt recovery. No clinically significant hypotension or hypertension compared to baseline was observed. Adverse events were infrequent: decreased oxygen saturation in 56 cases (3.2%), nausea in 38(2.2%), dizziness in 68 (4.0%), and hallucination in 14 (0.8%).

All desaturation episodes were successfully corrected with jaw-thrust maneuver, supplemental oxygen via mask, and oral suction; no patient required endotracheal intubation. Symptoms resolved within 30–60 minutes without sequelae.

**Conclusion:** Low dose bolus propofol combined with ketamine provides effective, safe, and reliable short-duration sedation. Compared with general anesthesia, it avoids intubation-related complications such as postoperative sore throat while providing sufficient anesthetic and analgesic effects, making it a valuable alternative in selected outpatient plastic surgical procedures.

Table 1. Distribution of surgical procedures performed from 2012 to 2026 and the proportion conducted under monitored anesthetic care (MAC).

	수술 개수	(%)
Excision and biopsy	640	36.7
Closed reduction (Nasal bone Fx.)	232	13.3
Debridement and local flap	180	10.3
Irrigation and debridement	150	8.61
Fat injection / Graft	100	5.74
Scar revision	88	5.05
Blepharoplasty	63	3.61
Subdermal excision (Bromhidrosis)	51	2.93
Open / Corrective rhinoplasty	45	2.58
그 외	194	11.1
<b>Total</b>	<b>1743</b>	<b>100</b>

Table 2. Incidence of adverse events during monitored anesthetic care (MAC), presented as number and percentage relative to MAC cases and total procedures.

Symptom	
Decreased Oxygen saturation (<80)	56 (3.2%)
Postoperative nausea	38 (2.2%)
Postoperative dizziness	68 (4.0%)
Postoperative hallucination	14 (0.8%)