Case Report/*Olgu Sunumu*

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A High-Risk Airway Patient Undergoing Open Gastrostomy Under Subcostal TAP Block: A Case Report

Yüksek Havayolu Riski Olan Bir Hastada Subcostal TAP Blok Altında Açık Gastrostomi: Olgu Sunumu

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ABSTRACT

Hypopharyngeal carcinomas often present at an advanced stage, causing dysphagia, malnutrition, and difficult airway management. In these patients, alternative anesthetic methods for surgical gastrostomy may be required, as endoscopic gastrostomy can fail due to tumor-related anatomical changes and general anesthesia carries a high airway risk. This case report presents the use of a bilateral subcostal transversus abdominis plane (TAP) block and multimodal analgesia for open surgical gastrostomy in a 70-year-old male patient with advanced hypopharyngeal carcinoma and a difficult airway. In the patient for whom the endoscopic procedure failed due to laryngeal edema, fibrosis, and hypopharyngeal stenosis, a subcostal TAP block was performed under ultrasound guidance with 15 mL of 0.25% bupivacaine on each side. Anesthesia was achieved in the T6-T10 dermatomes. The procedure was completed uneventfully under sedation with intravenous low dose ketamine, midazolam, and fentanyl. The patient's hemodynamics remained stable, and his postoperative pain was assessed as 2-3/10 on the visual analog scale, with no need for rescue analgesics. The patient was discharged on the second postoperative day. In conclusion, subcostal TAP block with multimodal analgesia can reduce perioperative risks by offering a safe and effective anesthetic alternative for surgical gastrostomy in patients with hypopharyngeal cancer and a difficult airway.

Keywords: Squamous cell carcinoma of head and neck, gastrostomy, nerve block, case report

ÖZ

Hipofarenks karsinomları sıklıkla geç evrede ortaya çıkarak disfaji, malnütrisyon ve zor havayolu yönetimine neden olur. Bu hastalarda endoskopik gastrostomi tümöre bağlı anatomik değişiklikler nedeniyle başarısız olabildiğinden ve genel anestezi yüksek havayolu riski taşıdığından, cerrahi gastrostomi için alternatif anestezi yöntemleri gerekebilir. Bu olgu sunumunda, ilerlemiş hipofarenks karsinomu ve zor havayolu olan 70 yaşında bir erkek hastada, açık cerrahi gastrostomi için uygulanan bilateral subkostal transversus abdominis plan (TAP) bloğu ve multimodal analjezinin kullanımı sunulmaktadır. Laringeal ödem, fibrozis ve hipofarengeal daralma nedeniyle endoskopik prosedürün başarısız olduğu hastaya, ultrason rehberliğinde bilateral 15 mL %0,25 bupivakain ile subkostal TAP blok uygulandı. T6-T10 dermatomlarında anestezi sağlandı. İntravenöz düşük doz ketamin, midazolam ve fentanil ile sedasyon altında prosedür sorunsuz tamamlandı. Hastanın hemodinamisi stabil kaldı ve postoperatif ağrısı görsel analog skala ile 2-3/10 olarak değerlendirildi; kurtarıcı analjezik ihtiyacı olmadı. Hasta postoperatif ikinci günde taburcu edildi. Sonuç olarak, subkostal TAP bloğu ve multimodal analjezi, hipofarenks kanseri ve zor havayoluna sahip hastalarda cerrahi gastrostomi için güvenli ve etkili bir anestezi alternatifi sunarak perioperatif riskleri azaltabilir.

Anahtar sözcükler: Baş ve boyun skuamoz hücreli kanseri, gastrostomi, sinir bloğu, olgu sunumu

INTRODUCTION

Hypopharyngeal carcinomas typically present late, with progressive dysphagia, malnutrition, and voice changes. Chemoradiotherapy, while standard of care, often worsens mucosal edema and swallowing difficulties (1). Percutaneous endoscopic gastrostomy provides safe and durable enteral feeding access, yet tumor-induced upper gastrointestinal obstruction may hinder endoscopic insertion. Surgical gastrostomy is then required.

Anesthetic management of these patients is challenging, particularly in the presence of upper airway obstruction, laryngeal edema, and comorbidities. General anesthesia with tracheal intubation may be unsafe, especially when compounded by cervical spine pathology limiting airway maneuverability.

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Regional anesthesia techniques, such as the transversus abdominis plane (TAP) block, may offer a safe alternative in such high-risk cases (2).

CASE REPORT

A 70-year-old male with hypopharyngeal squamous cell carcinoma was admitted due to severe dysphagia and weight loss while undergoing concurrent chemoradiotherapy. Endoscopic gastrostomy was attempted, but passage of the endoscope failed at the hypopharyngeal level due to extensive edema, fibrosis, and luminal narrowing. Surgical gastrostomy was therefore scheduled. The patient and his family were informed and written consent was obtained.

Magnetic resonance imaging of the cervical spine revealed loss of cervical lordosis and multilevel degenerative disc disease with protrusions, particularly at C5–6 (right paracentral) and C6–7 (left central). These findings were considered significant risk factors for restricted neck extension and potential airway difficulty. Endoscopy demonstrated markedly edematous and fibrotic laryngeal structures, bilateral vocal cord edema, immobile epiglottis, and a severely narrowed hypopharynx and esophageal inlet, indicating that tracheal intubation would be extremely high risk. Chest computed tomography showed panlobular emphysema. Echocardiography revealed normal left ventricular ejection fraction (65%) with no significant structural abnormality, and perioperative cardiac risk was assessed as low.

Given the high risk of failed intubation, perioperative airway compromise, and emphysema-related pulmonary vulnerability, general anesthesia was avoided to reduce postoperative pulmonary complications. Given the patient's predicted difficult airway and age, a comprehensive airway management plan was established prior to the procedure. An emergency difficult airway cart, including a videolaryngoscope and bougie was kept ready in the operating room. An otolaryngologist was on standby for a possible emergency tracheostomy in case of sedation-induced airway collapse or failure of the regional technique necessitating conversion to general anesthesia. The plan for failed regional anesthesia involved local anesthetic infiltration by the surgeon supplemented with carefully titrated sedation, avoiding general anesthesia induction if possible. The procedure was performed under bilateral subcostal ultrasound-guided TAP block (Figure 1). Fifteen mL of 0.25% bupivacaine were injected on each side. Dermatomal anesthesia from T6 to T10 was achieved 20 minutes after the block, as confirmed using pin-prick testing and cold application. For multimodal analgesia, 25 mg intravenous ketamine was administered at induction. Mild sedation was achieved with small doses of midazolam, boluses were titrated intraoperatively as needed. During peritoneal entry and gastric manipulation, the patient experienced transient discomfort, which was managed with additional light sedation using fentanyl and midazolam. Hemodynamic stability was maintained throughout, and oxygen saturation remained above 95%. A total of 25 mg ketamine, 2 mg midazolam, and 50 µg fentanyl were used. Postoperative pain, assessed using the visual analog scale (VAS), was 2/10 at the first hour, 3/10 at the sixth hour, and 2/10 at the 24th hour. No rescue opioids were required. The patient recovered uneventfully and was discharged on postoperative day two.

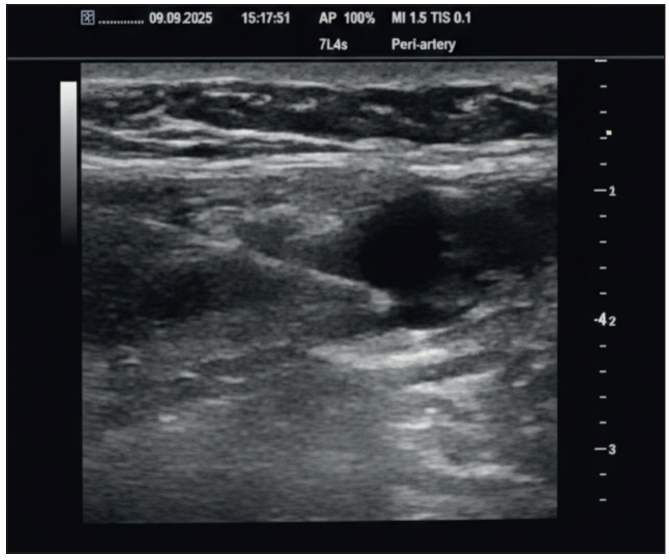

Figure 1. Ultrasound image showing the needle tip and anatomical planes during the application of the bilateral subcostal transversus abdominis plane (TAP) block.

DISCUSSION

This case underscores the intricate challenges associated with anesthetic care in a patient with hypopharyngeal carcinoma undergoing surgical gastrostomy. The combination of upper airway edema, fibrosis, multilevel cervical spine degeneration, and underlying pulmonary emphysema markedly contraindicated tracheal intubation and general anesthesia due to the elevated risk of catastrophic airway compromise and postoperative pulmonary complications. In such scenarios, regional anesthesia techniques such as the bilateral subcostal TAP block can offer a viable and safer alternative.

The subcostal approach to TAP block has been shown to provide effective analgesia for upper abdominal interventions. Bihani et al. questioned whether ultrasound-guided subcostal TAP block could be used as a sole anesthetic technique and reported successful outcomes in upper abdominal surgeries with minimal sedation (3). Similarly, Lee and Choe presented a case of open gastrostomy performed under unilateral sub-

costal TAP block in a high-risk elderly patient, demonstrating that the block provided sufficient somatic analgesia (4).

When considering alternatives for high-risk patients, neuraxial techniques are often evaluated. Viswanath et al. successfully utilized thoracic epidural anesthesia as a sole technique for gastrostomy in a patient with a difficult airway (5). However, in our patient, central neuraxial blocks were avoided due to hypotension risks and spinal degeneration. As demonstrated by Bagaphou et al., while the erector spinae plane (ESP) block is a valid option for visceral analgesia, we aimed to present the subcostal TAP block as a more peripheral alternative (6). This approach avoided the positioning risks associated with posterior blocks in a patient with airway compromise. Furthermore, recent studies have highlighted that ESP block may exhibit inconsistent and variable (patchy) dermatomal coverage patterns between patients, potentially compromising anesthetic reliability in a sole-technique setting (7). Therefore, the subcostal TAP block was chosen for its feasibility in the supine position and direct coverage of the incision site.

It should be noted that the use of intravenous ketamine contributed to the overall analgesic profile. While the dermatomal testing confirmed the success of the TAP block in providing somatic anesthesia, the systemic analgesic effect of ketamine likely provided visceral pain coverage that the TAP block alone might not fully address. This multimodal approach, combining a peripheral fascial plane block with low-dose ketamine, was crucial for patient comfort and safety.

Similar to our case, Ersoy et al. demonstrated the successful use of bilateral ultrasound-guided rectus sheath block as the sole anesthetic technique for midline laparotomy, highlighting the feasibility of regional anesthesia in major abdominal surgery when general anesthesia poses a high risk (8). Additionally, Shamim et al. conducted a case series involving 10 patients who received bilateral subcostal TAP blocks prior to open gastrostomy, resulting in significant pain relief and high patient satisfaction scores (9). These findings collectively support the use of subcostal TAP block as a valuable anesthetic option for open gastrostomy procedures in patients with challenging airways or high perioperative risks.

CONCLUSIONS

This case shows that open surgical gastrostomy can be safely performed in patients with hypopharyngeal carcinoma and difficult airways using regional anesthesia with multimodal analgesia. Bilateral subcostal TAP block combined with low-dose ketamine and light sedation provided effective analgesia, preserved spontaneous respiration, and reduced risks of general anesthesia. Further studies are needed to define standardized protocols and broader applications of TAP block in high-risk surgical patients.

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AUTHOR CONTRIBUTIONS

Conception or design of the work: MCA, MMC

Data collection: OS

Data analysis and interpretation: HU

Drafting the article: MCA

Critical revision of the article: MMC

The author (MCA, MMC, OS, HU) reviewed the results and approved the final version of the manuscript.

REFERENCES

1. Chen SC. Oral dysfunction in patients with head and neck cancer: A systematic review. J Nurs Res 2019;27(6):e58.
2. Hebbard P, Fujiwara Y, Shibata Y, Royse C. Ultrasound-guided transversus abdominis plane (TAP) block. Anaesth Intensive Care 2007;35(4):616-7.
3. Bihani P, Bhatia P, Chhabra S, Gangwar P. Can ultrasound-guided subcostal transverse abdominis plane block be used as sole anesthetic technique? Saudi J Anaesth 2017;11(1): 111-3.
4. Lee AR, Choe YS. Anesthesia experience for open gastrostomy with ultrasound-guided unilateral subcostal transversus abdominis plane block in a high risk elderly patient: A case report. Anesth Pain Med 2015;5(4):e24890.
5. Viswanath R, Parthasarathy A, Ramalingam A, Krishnendu S. Thoracic epidural as the sole anaesthetic technique for gastrostomy in a case with difficult airway: A case report. Anaesthesiol Intensive Ther 2024;56(2):164-6.
6. Bagaphou CT, Piraccini E, Norgiolini L, et al. Anesthesia experience for open gastrostomy with ultrasound-guided erector spinae plane block: A case report. Case Rep Anesthesiol 2020;2020:5413848.

7. Selvi O, Tulgar S, Serifsoy E, Lance R, Thomas DT, Gürkan Y. Quadrant and dermatomal analysis of sensorial block in ultrasound-guided erector spinae plane block. Eurasian J Med 2022;54(2):121-6.
8. Ersoy Z, Ensarioglu M, Araz C. Bilateral ultrasound-guided rectus sheath block for anesthesia of midline laparotomy. J Anesth Reanim Spec Soc 2021;29(4):283-6.
9. Shamim F, Hoda MQ, Samad K, Khan FA. Ultrasound-guided subcostal transversus abdominis plane block for open surgical gastrostomy: A case series. Br J Anaesth 2022;128(6):1006-7.