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Editorial

Robotic Modified Radical Neck Dissection Through the Bilateral Axillary Breast Approach

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Conventional open thyroid surgery has been performed for the last 100 years. However, open thyroid surgery leaves a visible scar on the front of the neck, which diminishes patients' quality of life, in terms of both cosmetic problems and psychological stress. Since Gagner [1] introduced endoscopic parathyroid surgery in 1997, various remote access thyroid surgery approaches have been widely developed, including the transaxillary, bilateral axillary breast, retroauricular, and transoral approaches [2-5].

As these techniques continue to develop, the surgical indications have expanded from thyroidectomy to more advanced procedures, including selective neck dissection and modified radical neck dissection (MRND). MRND is recommended for thyroid cancer patients with lateral neck node metastasis (N1b) [6]. MRND should remove the cervical lymph nodes from level I through V, with preservation of nonlymphatic structures such as the spinal accessory nerve, sternocleidomastoid muscle, and internal jugular vein. Conventional MRND requires a 10- to 15-cm-long transverse incision or L-shaped incision, which leaves a visible long neck scar. It requires more extensive dissection of the lateral neck and is more invasive than thyroidectomy only. For this reason, endoscopic or robotic MRND has not been widely performed.

At present, the da Vinci Surgical System (Intuitive Surgical Inc., Sunnyvale, CA, USA) is the most widely used surgical robotic system for minimal invasive surgery. Its three-dimensional magnification view, tremor stabilization, and "Endo-wrist" features of the operating arms enable more precise operation than is possible with endoscopic approaches. The development of a robotic surgery system has enabled more complicated surgery to be performed in various medical fields. Due to these advantages, adoption of the robotic approach has been reported for MRND, rather than the endoscopic approach.

In 2007, the bilateral axillary breast approach (BABA) endoscopic thyroidectomy was introduced, which requires four small incisions in the circumareolar region and axilla [7]. The da Vinci robot system was adopted for the BABA method in 2009 and eventually expanded to the robotic MRND procedure. The BABA robotic approach leaves a smaller scar than any other method and provides a symmetric view as in the conventional approach. According to a recent study, the mean numbers of retrieved LNs were not significantly different between open and robotic groups, especially at level 6 (10.61±5.53 in the open group vs. 10.33±5.25 in the robotic group, P=0.883) and level 4 (6.39±4.99 in the open group vs. 7.75±5.38 in the robotic group, P=0.464) [8]. The authors of that study [8] subdivided the operating time between the robotic group and the open group and found no significant difference in console time between the two groups (191.43±60.43 minutes in the open group vs. 200.33±26.86 minutes in the robotic group). In this study, the perioperative complication rates were similar between the two groups after matching.

Robotic surgery involves additional procedures, such as creating a working space, docking, and console use (i.e., the actual operation), resulting in a longer operation time than the conventional approach. Research on robotic MRND using BABA showed excellent cosmetic outcomes, but more studies are required to prove its long-term oncological safety.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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Conceptualization: SHW. Data curation, Formal analysis, & Methodology: YTH. Project administration: SHW. Visualization & Writing–original draft: YTH. Writing–review & editing: SHW.

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