Transoral Robotic Resection of Recurrent Neopharyngeal Squamous Cell Carcinoma

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Laryngeal cancer is one of the most common malignancies of the head and neck.1 Early-stage tumors often are treated with transoral surgery or radiation, while advanced tumors usually are treated with combination therapy and radical surgery, often laryngectomy. Recurrence after radiotherapy failure can be treated with laryngectomy, but options for post-laryngectomy recurrence are limited and depend on the location of the lesion.2-4 Common sites of post-laryngectomy recurrence include the neopharynx, stoma, lymph nodes, and distant metastases. If a recurrent lesion is identified at an early stage, it can be excised via transoral robotic surgery (TORS) without the need for reconstruction. This reduces the morbidity associated with larger reconstruction procedures. Only early recurrent tumors can be treated with robotic-assisted surgery, so close follow-up with early diagnosis is key for patients who have undergone a total laryngectomy.

A 51-year-old female with a history of T3N1M0 squamous cell carcinoma of the larynx status post total laryngectomy and postoperative radiation therapy was evaluated for new-onset heartburn 6 years after her initial surgery. Endoscopy showed a 1.5-cm irregularly shaped lesion in the neopharynx that was exophytic and friable. The lesion was biopsied and identified as squamous cell carcinoma in situ. The case was reviewed at a multidisciplinary tumor board, and a recommendation for surgical excision was made. Preoperative evaluation suggested that the lesion could be removed transorally with robotic assistance.

The patient was brought to the operating room, and a nasogastric tube was passed distal to the lesion to verify that the neopharyngeal lumen was patent (Figure 1). The robotic system was oriented at a 30° angle with Maryland and monopolar cautery. The robotic arms were brought in under direct visualization, and the nasogastric tube was manipulated to evaluate the lesion and its margin. An incision was made into the pharyngeal wall through the submucosa and extended circumferentially. Monopolar cautery was used to excise deeper tissue, but no obvious irregularities were visualized (Figure 2). Redundant mucosa around the defect was closed primarily. The nasogastric tube was removed, and a Dobbhoff tube was placed into the neopharynx distal to the resection. The final pathology report revealed squamous cell carcinoma in situ with margins negative for malignancy. The patient’s diet was advanced over the next 4 days, and she was discharged after an esophagram showed no leaks. She was examined via office laryngoscopy and serial imaging at regular intervals over the next 2 years. No recurrent or metastatic disease has been identified.
diameter. The small size and localized nature allowed for an incision that did not require a graft for closure. In addition, the patient had previously undergone a total laryngectomy, leaving ideal anatomy with no risk of aspiration during the surgery. This case serves as additional evidence that TORS can be used to access the pharynx. As the otolaryngology community continues to gain experience with TORS, it should consider employing the technology in resecting small lesions in the pharynx and neopharynx.

**Declaration of Conflicting Interests**
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**
The author(s) received no financial support for the research, authorship, and/or publication of this article.

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