

Endoscopic Submucosal Dissection of Secondary Hypopharyngeal Neoplasia in Trismus Oral Cancer Patients: Case Series Report

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Abstract

The incidence of second primary tumor (SPT) in head and neck (H&N) cancer patients is not uncommon [1,2]. When using image-enhanced endoscopy (IEE) screening in patients at risk, especially narrow-band imaging (NBI) endoscopy and chromoendoscopy with Lugol's solution, approximately 20% of H&N cancer patients have synchronous neoplasia in H&N regions of esophagus [1,2]. Unfortunately, some of them have trismus because of oral submucosa fibrosis secondary to long-term betel quit chewing or post-irradiation therapy, and tumor-related airway compromised. These situations make the pharyngeal passages difficult to reach with conventional endoscopes. Traditionally, hypopharyngeal neoplasia in trismus patients are managed with widest field of resection, open partial pharyngectomy and usually in conjunction with partial or total laryngectomy, which are accompanied with poor quality of life (QoL). We present three trismus patients with early hypopharyngeal neoplasia treated by transoral endoscopic submucosal dissection (ESD).

Keywords: Neoplasia; Endoscopy; Pharyngectomy; Laryngectomy

Case Report

Three trismus oral cancer male patients with mean (\pm SD) age of 56.7 (\pm 2.1) years old were reported (Table 1). All of them received endoscopic examinations with NBI and magnifying endoscope which has powerful 80 times optical magnification (EVIS LUCERA

CLV-260NBI, GIF-H260Z endoscopy, Olympus Medical Systems Corp, Tokyo, Japan), and chromoendoscopy with Lugol's solution (Sigma-Aldrich, St. Louis, Missouri, USA). One early synchronous esophageal neoplasia (high-grade intraepithelial neoplasia, HGIN) with hypopharyngeal squamous cell carcinoma (SCC, case 1), one stage I hypopharyngeal SCC (case 2), and one hypopharyngeal HGIN (case 3) were reported (Table 1).

Case	Age (year)	Sex	Primary tumor	cStage	SPT	cStage	SPT size (mm)	Margin free	Adjuvant therapy	Status	Survival (months)
1	59	Male	Oral cancer	III	EsoHGIN	0	15	Yes	Nil	LD	39
					HypoSCC	I	15	Yes	RT		
					NSCLC	IIIB	42	NA	CCRT		
2	56	Male	Oral cancer	IVB	HypoSCC	I	6	No	CCRT	DF	26
3	55	Male	Oral cancer	II	HypoHGIN	0	6	Yes	Nil	DF	75

CCRT: Concurrent chemoradiotherapy; DF: Disease free; EsoHGIN: Esophageal high-grade intraepithelial neoplasia; HypoHGIN: Hypopharyngeal high-grade intraepithelial neoplasia; HypoSCC: Hypopharyngeal squamous cell carcinoma; LD: Live with disease (metachronous lung cancer); NSCLC: Non-small cell lung cancer; NA: Not applicable; SPT: Second primary tumor

Table 1: Demographic and survival data of reported patients.

The mean (\pm SD) size of synchronous neoplasia were 9.0 (\pm 5.2) mm. After general anesthesia with endotracheal tube and assistance of adult size Lindholm operating laryngoscope (length 15 cm, Karl Storz 8587A), ESD were carried out by endoknives IT-nano (KD-612L, Olympus) and DualKnife (KD-650U, Olympus) with electrocautery unit ESG-100 (Olympus, Tokyo, Japan; incision pulse-cut slow 25W,

dissection forced coagulation-2, 25W) without sub-mucosal lifting by solution injection (Figure 1).

Oral intake was resumed at second day after ESD. Histopathologically, horizontal margin free were achieved in all patients but one patient had vertical margin involvement who received concurrent chemoradiotherapy (CCRT) subsequently. During follow-

up endoscopy at one year, there were no local recurrences in all patients. The 2-year overall survival were 100% with mean (\pm SD) of 46.7 (\pm 25.4) months.

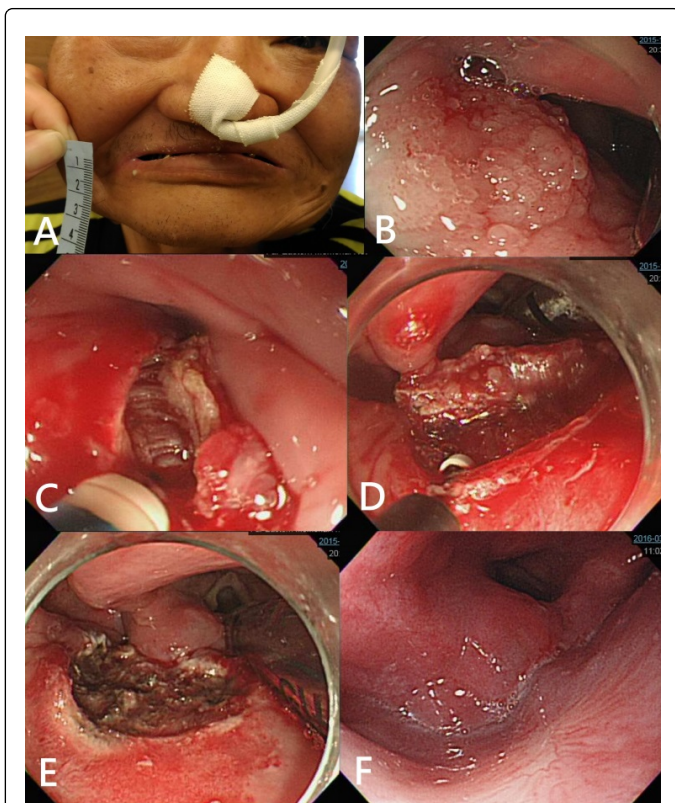


Figure 1: (A) Severe trismus because of oral submucosa fibrosis; (B) One 6 mm mucosal lesion with abnormal papillary mucosa pattern at left hypopharynx; (C and D) Endoscopic submucosal dissection (ESD); (E) Post-ESD wound; (F) Ulcer scar without local recurrence.

Discussion and Conclusion

Due to common carcinogen exposure at H&N region and esophagus, SPTs are not uncommon in H&N cancer patients and the treatment strategy could be modified when synchronous neoplasia were detected [1]. Using IEE screening, especially NBI endoscopy and Lugol's chromo-endoscopy, the sensitivity/accuracy could be as high as 97%~100%/86~96% and 97%/82%, respectively, for the detection early

neoplasia in H&N region or esophagus [1]. Early SPTs could be treated by minimally-invasive resection techniques with organ preservation and better QoL [3,4]. However, many of H&N cancer patients have trismus because of previous radiotherapy or oral submucosa fibrosis after long-term betel quid chewing, which makes passage of surgical instruments difficult. Transoral robotic surgery (TORS) is another choice for minimal invasive surgical technique for hypopharyngeal neoplasia, but not feasible due to trismus [4]. Under these circumstances, extensive field of resection is always needed to treat early synchronous neoplasia. In recent decade, the introduction of ESD technique using flexible video-endoscope and many kinds of endoknives has been widely applied in the treatment of early gastrointestinal tract neoplasia. The endoscopic resection technique has also been proposed as a minimally invasive treatment option with curative potential for SPTs that invades the subepithelial layer, although with local recurrence rate 13% after a median follow-up period of 71 months [5]. In our case series, one esophageal HGIN and one hypopharyngeal HGIN were treated by ESD alone without adjuvant therapy. One SCC of hypopharynx were resected with tumor-free resected margin followed by adjuvant local radiotherapy, and one hypopharyngeal SCC were resected with vertical margin involvement followed by CCRT. None of three patients had local recurrence during IEE surveillance and no procedure-related complication was noted. All patients tolerated oral intake 2 days after ESD and only mild degree throat pain was found. In conclusion, we believed that ESD of early SPTs in H&N cancer patients with trismus could be performed with curative potentials, reduced complication of treatment and improved QoL.

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