

Endoscopic Approach to Esophageal Leiomyomas: Single Center Results

Özofagus Leyomiyomlarında Endoskopik Yaklaşım: Tek Merkez Sonuçları

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ABSTRACT

Introduction: Leiomyoma is the most common esophageal benign lesion. There are many treatment methods from endoscopic treatment methods to surgery in the treatment of leiomyoma. In this study, we evaluated the results of our patients who underwent endoscopic mucosal (EMR) and submucosal dissection (ESD) due to esophageal leiomyoma.

Methods: A total of 18 patients who underwent EMR or ESD protocol with the diagnosis of esophageal leiomyoma were included in the study and age, gender, radiological imaging results, endoscopic ultrasonography results, treatment method, pathology results, and outpatient follow-up data of the patients were recorded following retrospective examination of the patient files.

Results: The mean age of the patients was 52.7±13.36 years, and the ratio of female/male was 1/1.25. Incidental lesions were found during endoscopic procedures in six patients (33.3%) due to dyspeptic complaints and in three patients (16.7%) due to dysphagia and during computed tomography in the remaining nine patients (50%) for various reasons. For treatment, three patients underwent EMR, and 15 patients underwent ESD. One patient had a hemorrhage controlled by endoscopic intervention, and no other complications were observed after treatment.

Conclusion: It should be kept in mind that ESD and EMR, which are among the endoscopic treatment methods in the treatment of esophageal leiomyoma, could be safely applied in experienced hands.

Keywords: Esophagus, leiomyoma, endoscopic mucosal resection, endoscopic submucosal dissection

ÖZ

Amaç: En sık gözlenen özofagus benign lezyonları leiomiyomlardır. Leiomiyomların tedavisinde endoskopik tedavi yöntemlerinden cerrahiye kadar birçok tedavi yöntemi bulunmaktadır. Biz de bu çalışmamızda özofagus leiomiyomu sebebiyle endoskopik mukozal (EMR) ve submukozal rezeksiyon (ESD) yapılan hastalarımızın sonuçlarını değerlendirdik.

Yöntemler: Özofageal leiomiyom tanısı ile EMR veya ESD protokolü uygulanan toplam 18 hasta çalışmaya dahil edilmiş olup hastaların hastane dosyalarının retrospektif olarak incelenmesi sonucunda hastaların yaşları, cinsiyetleri, radyolojik görüntüleme sonuçları, endoskopik ultrasonografi sonuçları, uygulanan tedavi yöntemi, patoloji sonuçları ve hastaların poliklinik takip notları kayıt altına alınmıştır.

Bulgular: Hastaların ortalama yaşı 52,7±13,36 yıl olup kadın/erkek oranı 1/1,25'tir. Hastaların 6'sında (%33,3) dispeptik şikayetler nedeniyle yapılan tetkiklerde, 3'ünde (%16,7) disfaji nedeniyle yapılan endoskopik girişimler sırasında, diğer 9 hastada (%50) ise çeşitli sebeplerle çekilen bilgisayarlı tomografiler sırasında insidental olarak lezyonlar bulunmuştur. Tedavi için 3 hastaya EMR, 15 hastaya ise ESD uygulanmıştır. Tedavi sonrası 1 hastada endoskopik müdahale ile durdurulan kanama mevcut olup başka bir komplikasyon gözlenmemiştir.

Sonuç: Özofagus leiomiyomlarının tedavisinde endoskopik tedavi yöntemlerinden olan ESD ve EMR'nin tecrübeli ellerde güvenle uygulanabileceği akıldta bulundurulmalıdır.

Anahtar Kelimeler: Özofagus, leiomiyom, endoskopik mukozal rezeksiyon, endoskopik submukozal rezeksiyon

Introduction

Benign lesions of the esophagus are rare lesions and constitute less than 1% of all esophageal lesions, and 2/3 of these lesions are leiomyomas, and the rest are polyps and cysts (1). Although esophageal leiomyomas

are seen at any age from the age of 20 to the age of 80, they are most frequently observed between the ages of 40-50 and show similar morphological features as the leiomyomas observed in other organs. Leiomyomas generally originate from muscularis propria and can grow up to 30 cm intraluminally and extraluminally (2-4).



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There are many options in the treatment of benign esophageal lesions, from endoscopic interventions to surgical treatment (1,5). While thoracotomy was the preferred treatment method in the 1990's, later thoracoscopy and laparoscopy replaced it as the more frequently applied treatments (6-9). The developments in endoscopy in the last few decades have caused an increase in the frequency of using endoscopic treatments (10). Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD), which are among the endoscopic treatment options, can be used safely in experienced hands in benign and early-stage malignant tumors (5,10,11).

In this study, we evaluated the results of our endoscopic treatments for benign esophageal lesions.

Methods

Our study started after obtaining approval from the University of Health Sciences, İstanbul Training and Research Hospital Local Clinical Research Ethics Committee (decision no: 2017, date:11/10/2019), and 38 patients who underwent standard EMR or ESD protocol with the diagnosis of an esophageal mass in the endoscopy unit between 2013-2017 constitute the universe of our study. Informed consent was obtained from all patients before the study. The patients with a pathological diagnosis of leiomyoma were included in the study. Patients with malignant and other benign esophageal pathologies or patients with incomplete data in hospital records were excluded from the study.

The ages, genders, endoscopic ultrasonography (EUS) results, treatment methods, pathology results, and outpatient follow-up data of 18 patients included in the study were recorded. Age and tumor size analysis of the patients were calculated as mean and standard deviation (SD).

Statistical Analysis

Statistical analysis of the data of our study was performed with SPSS version 21.0. Continuous data of the patients were given as mean \pm SD, and categorical data were reported as a percentage.

Results

The mean age of 18 patients in our study was 52.7 ± 13.36 years, and female/male (F/M) ratio was 1/1.25. Lesions were detected during endoscopic procedures due to dyspeptic complaints in six patients (33.3%) and dysphagia in three patients (16.7%). In nine patients (50%), incidental lesions were found during thoracoabdominal computed tomography (CT). All patients underwent EUS and thoracoabdominal CT before treatment. In only two of the patients, an endoscopic biopsy was performed to clarify the diagnosis of leiomyoma in CT and EUS, and the pathology results were leiomyoma. Considering the treatment methods, EMR was applied in three patients, and ESD was applied in 15 patients, and the mean size of the excised lesions was 11.1 ± 6.26 mm. The mean diameter of the lesions of patients with symptomatic leiomyoma was 23.3 mm. Considering the location of the lesions, there was one lesion in the cervical esophagus, four lesions in the abdominal esophagus, and 13 lesions in the thoracic esophagus (Table 1).

When the post-treatment complications were evaluated, hemorrhage developed in one patient and was taken under control by using

endoscopic cauterization and 9 mm "through the scope clip" (Quick clip®, Olympus, Hamburg, Germany). Perforation and mortality were not observed in any patient. Malign transformation or recurrence was not observed in the mean follow-up of 3.8 ± 1.85 years.

Discussion

The successful surgical operation was performed approximately 65 years after esophageal leiomyomas were described by Virchow in the 19th century (12,13). With the popularization of minimally invasive interventions over the years, thoracoscopic interventions and then endoscopic interventions were initiated in the leiomyoma treatment. While the F/M ratio was reported to be equal in some studies, this ratio was reported as 1/1.9 in some studies (1,14). In our study, leiomyomas were found more frequently in men. The mean age of diagnosis in studies was reported to be in the 4th-5th decade, and our study had a similar mean age with literature (1,10,14).

Leiomyomas are usually incidentally detected due to being slow-growing tumoral lesions on the esophageal wall (15,16). The most common symptoms are dysphagia, chest and retrosternal pain, regurgitation, epigastric pain, dyspnea, and weight loss. In a study, it was reported that there was a correlation between the size of leiomyoma and the presence of symptoms, and the mean tumor diameter in symptomatic patients was reported to be 5.3 cm (4). In our study, endoscopy was performed in three patients due to dysphagia, and the mean tumor size of these patients was 23.3 mm. Leiomyomas are usually located in the middle 2/3 part of the esophagus (17). In our study, in accordance with the literature, leiomyomas were detected in the thoracic esophagus in the majority of patients.

Table 1. Results of patients with esophageal leiomyomas

Gender	Age	ESD/EMR	Diameter (mm)	Pathology	Location
M	31	ESD	6	Leiomyoma	Abdominal
F	51	ESD	25	Leiomyoma	Thoracic
F	57	ESD	15	Leiomyoma	Thoracic
M	51	ESD	8	Leiomyoma	Thoracic
M	48	EMR	8	Leiomyoma	Thoracic
M	61	EMR	7	Leiomyoma	Cervical
F	65	ESD	20	Leiomyoma	Thoracic
M	35	ESD	10	Leiomyoma	Thoracic
F	52	EMR	16	Leiomyoma	Thoracic
F	61	ESD	12	Leiomyoma	Thoracic
M	60	ESD	5	Leiomyoma	Thoracic
M	58	ESD	8	Leiomyoma	Thoracic
M	55	ESD	10	Leiomyoma	Thoracic
F	72	EMR	5	Leiomyoma	Abdominal
M	63	ESD	6	Leiomyoma	Thoracic
M	70	ESD	8	Leiomyoma	Abdominal
F	20	ESD	7	Leiomyoma	Thoracic
F	40	ESD	25	Leiomyoma	Abdominal

ESD: submucosal dissection, EMR: endoscopic mucosal, F: female, M: male

Chest X-ray, barium esophagography, endoscopy, EUS, CT, and magnetic resonance are among the imaging methods used in the diagnosis of esophageal leiomyomas (1,18-20). The chest X-ray shows a mediastinal mass, and barium esophagography shows a filling defect. Leiomyomas are seen as homogeneous, round or lobulated soft tissue masses in tomography (20). In endoscopy, they are observed as free-moving masses under the intact mucosa. EUS is one of the most useful methods for diagnosis. In this method, the mass can be distinguished as intramural, homogeneous, hypoechoic, and well-circumscribed (19,20).

In cases where leiomyoma is suspected, if the mucosa is intact during endoscopy, it is recommended to avoid biopsy due to the possibility of being non-diagnostic and increasing surgical complications (1,18,21). However, it is not always possible to distinguish leiomyomas from other submucosal lesions despite all imaging methods (21). In our study, ESD was applied to two patients after diagnosis by endoscopic biopsy because of the suspicion of imaging methods.

EMR and ESD have complications due to being invasive procedures. Iatrogenic injuries, which have an essential place in esophageal perforations, can be observed during endoscopic treatments of leiomyomas (22). Compared with EMR, hemorrhage, and perforation rates are higher in ESD. Many of these complications are associated with surgeon-dependent factors (23,24). Depending on the experience, hemorrhage and perforations can be managed with clips and coagulation (25). In our study, hemorrhage occurred in only one patient who underwent ESD, and it was stopped using both coagulation and clips, and no patient had perforation.

Conclusion

As a result, while choosing the treatment to be used in the treatment of esophageal leiomyomas, ESD and EMR performed with endoscopic methods can be successfully applied with low complication rates in experienced hands instead of treatment methods with higher morbidity such as surgery.

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Ethics Committee Approval: Our study started after obtaining approval from the University of Health Sciences, İstanbul Training and Research Hospital Local Clinical Research Ethics Committee (decision no: 2017, date:11/10/2019).

Informed Consent: Informed consent was obtained from all patients before the study.

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