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Management of cervical esophageal strictures with self-expanding metalic stents

Servikal özofageal striktürlerin tedavisinde self-expandable metal stentler

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Esophageal strictures due to malignant diseases are treated with self-expanding metalicic stents. However, experience is limited with these metalic stents in the cervical esophagus. Due to technical difficulties and procedure-related complications, the cervical esophagus has been assigned as a risky area for stenting procedures. Another encountered problem is patient discomfort after the procedure. In this case report, we present three patients with cervical esophageal strictures who were successfully treated with self-expandable metalic stents. Two of these patients had inoperable esophageal carcinoma and the third had benign stenosis due to radiotherapy of larynx carcinoma. The two patients with malignant disease survived four and six months, respectively, after the procedure. The last patient with benign disease is still alive and has been without dysphagia symptom for six months.

Key words: Cervical esophagus, metalic stents

Malign hastalıklara bağlı olarak gelişen özofagus striktürlerinin tedavisinde «self-expandable» metal stentler kullanılmaktadır. Ancak bu metal stentlerin servikal özofagusta kullanımları ile ilgili deneyim kısıtlıdır. Teknik zorluklar ve işleme bağlı komplikasyonlar nedeniyle, servikal özofagus bölgesi stent işlemleri için riskli bölge olarak tanımlanmaktadır. Diğer bir karşılaşılan problem ise, hastanın işlem sonrası yaşadığı rahatsızlıktır. Bu olgu sunumunda, servikal «self-expandable» metal stent yerleştirilerek başarıyla tedavi edilen üç olguyu sunuyoruz. Hastalar defalarca uygulanan endoskopik dilatasyon tedavilerine yanıtsız olarak kabul edilmişlerdi. Bu hastaların ikisi inoperabl özofagus karsinomu, diğeri ise larinks kanserine uygulanan radyoterapi sonrası gelişen striktür olgusu idi. Malign hastalığı olan iki olgu, işlemden sonra sırasıyla 4 ve 6 ay yaşam sürdü. Son olarak benign etiyolojisi olan hasta halen hayatta olup, işlemden sonraki altı aylık süre içinde disfaji semptomu tanımlamamıştır.

Anahtar kelimeler: Servikal özofagus, metal stentler

INTRODUCTION

Esophageal stents have been used for several decades for palliative treatment of middle and distal esophageal cancers (1-3). Newly designed self-expandable metal stents have improved therapeutic success in this area (4). The former plastic stents had many disadvantages including patient discomfort, narrower lumen diameter and procedure-related risks.

Most of the esophageal cancers are located at the middle or distal region; however, approximately 10% of cancers are located at the proximal or cervical portion. These cancers are usually disseminated or locally advanced cancers, which are inoperable at the time of diagnosis. The cervical esophagus is defined as the segment between C6 at the pharyngoesophageal junction and the thoracic inlet at the T1 level. At the C6 level, there is a 3-cm segment of esophagus, in which the resting wall tension is high, which is a high-pressure zone called the upper esophageal sphincter. The experience of stenting at this cervical esophageal region is very limited due to technical difficulties, patient discomfort due to foreign body sensation and other procedure- related complications. The literature concerning endoscopic placement of these stents is scarce.

We present our experience in three patients with inoperable esophageal cancer (2 patients) and radiotherapy-related stricture (1 patient).

Stent Insertion Procedure

Written informed consent was obtained from all

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patients before the procedure. All patients had dysphagia at the initial evaluation. Dysphagia was graded on a scale from 0 to 4 points (0, no dysphagia; 1, dysphagia for regular solids; 2, dysphagia for soft solids; 3, dysphagia including liquids; and 4 complete dysphagia including saliva). The endoscopic procedure was done under light conscious sedation with midazolam 2-5 mg titrated dosage, and local pharyngeal spray anesthesia was performed with 2% benzocaine. Nasal oxygen supplement was given and digital cardiac and pulse oximetry were monitored during the procedure. All procedures were performed under fluoroscopic guidance. The patients all underwent dilatation procedure before stent placement with Savary-Gilliard bougie dilator up to a diameter of 11-13 mm for easier stent insertion. Lipiodol was injected via sclerotherapy needle at the lower and upper borders of the narrowed segment. After placement of a 0.038 inch metal guidewire beyond the stenotic segment, the stent introducer was advanced over the guidewire into the esophagus under fluoroscopic view and the stent was deployed by pulling back the introducer sheath. The patients were followed at the third and seventh days after stent insertion with endoscopy and barium studies.

Case 1

A 71-year-old man was diagnosed with inoperable squamous cell carcinoma in the cervical esophagus. The endoscopic examination revealed the lesion to be located 20 cm from the central incisors and 2 cm below the upper esophageal sphincter. The endoscope failed to pass the stenotic area. The esophagography revealed a 5 cm long stenotic segment. The patient's dysphagia score was four. He was managed by placement of self-expanding metal stent. No procedure-related complication occurred. He reported mild sensation of foreign body in the stent region for about two weeks, which gradually disappeared. His dysphagia score improved to two. After stenting, he received radiotherapy for eight weeks. He required no further treatment and received liquid diet. The patient was stable regarding his dysphagia symptom for six months after the stenting. He died at the sixth month of follow-up.

Case 2

A 67-year-old female was diagnosed with inoperable squamous cell carcinoma in the cervical esophagus. Endoscopic examination showed the lesion was located 18 cm from the central incisors, 1 cm below the upper esophageal sphincter. The endoscopy failed to pass the stenotic area. A barium radiography revealed the stricture as 5 cm long in the upper esophagus. Her dysphagia score was four.

She was treated with metal stenting using Ultraflex esophageal stent (Boston Scientific, Watertown, Massachusetts, USA). She experienced a foreign body sensation after the procedure and the control endoscopy after 72 hours revealed a migrated stent. Her dysphagia score remained at four. The stent was removed with a snare. A second attempt was done with the same metal stent and this time the patient was able to swallow and did not describe any foreign body sensation. Her dysphagia score improved to two. She had no further complaints of dysphagia for the next four months. She died of metastatic disease at the fourth month of follow-up.

Case 3

A 75-year-old male was diagnosed with a radiotherapy-related cervical esophageal stricture. He had larynx cancer and had undergone laryngectomy

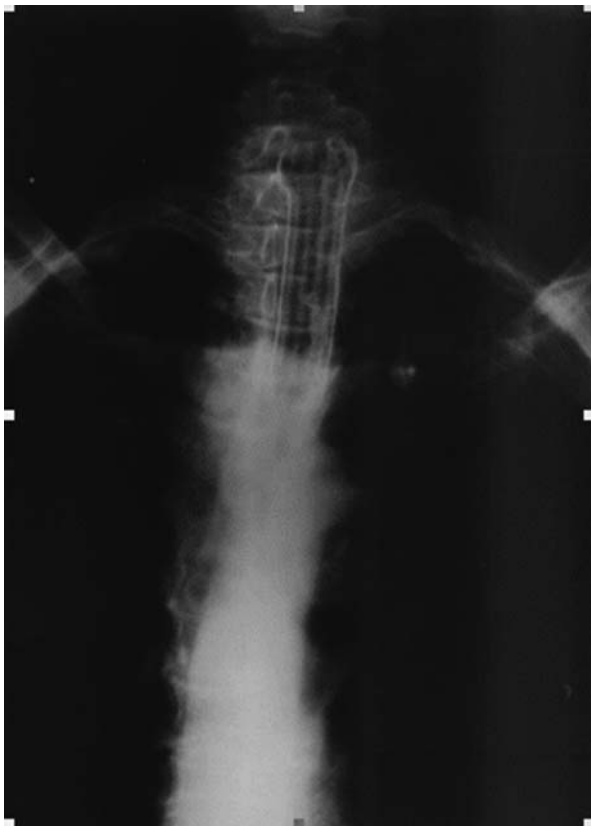

Figure 1. Dilated appearance of the stricture after stent insertion

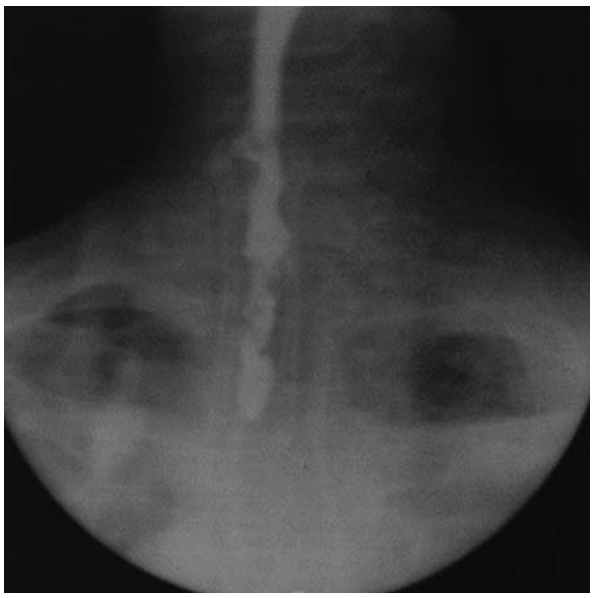

Figure 2. Barium esophagography showing narrowed segment

six months previously. He had a dysphagia score of four. Endoscopy revealed an extremely narrowed cervical esophagus and the endoscope failed to advance beyond the stricture. Barium study revealed a 7-9 cm long narrowed segment (Figure 1). A metal guidewire was passed beyond the stricture under fluoroscopic guidance. Ultraflex esophageal self-expandable metal stent (Boston Scientific, Watertown, Massachusetts, USA) was advanced over the guidewire (Figure 2). After the stent insertion, his dysphagia score improved to two. He has been under follow-up for six months with a stable course.

DISCUSSION

Palliative treatment for cervical esophageal strictures is a challenging problem and current treatment modalities are limited. Shim et al. (4) recently described three esophageal carcinoma patients treated with a novel self-expanding stent insertion. They reported that all three patients had significant improvement in dysphagia scores and that procedure-related complications were very low.

The major problem with cervical esophageal stents is patient discomfort, such as sensation of foreign body in the upper esophagus. However, in a series of 22 patients, Macdonald et al. (5) reported a very low rate of discomfort (18%) with a high technical success rate (93%). However, in this series, the authors reported at least one episode of aspiration pneumonia. Another interesting aspect is the detrimental effects of stenting in patients with benign disease. Two of the patients with benign disease in this series had significant life-threatening complications with metal stenting. However, in our case, we did not observe these complications, and the living patient has been under follow-up for six months. Further research is needed to clarify the effect of metal stents in these benign disorders.

Current opinion cautions against violation of the upper esophageal sphincter with both rigid plastic or metallic stents (6). Most endoscopists fear stent insertion in the upper esophagus for legitimate reasons such as foreign body sensation and airway obstruction (7). However, although this fear is reasonable, it has not been proven by randomized large trials. The mechanism underlying foreign-body sensation is complex. Sensory innervation of the cricopharyngeus, underlying mucosa and blood vessels is carried via the glossopharyngeal nerve. Distension of the esophagus at this level causes a reflex contraction of the cricopharyngeus muscle via vagovagal reflex (8). The cervical esophageal stent exerts pressure at this level and the resultant contraction further increases this pressure. However, there may be a progressive attenuation of foreign-body sensation over time as we experienced in our case 1. Other authors have reported the same decrease in foreign body sensation over time (5, 9).

As we reported above, cervical esophageal stenting in our series was a tolerable and relatively safe procedure. Although there are considerable complications in larger series, this procedure significantly improves dysphagia scores and the relevant quality of life, which is the main therapeutic target in inoperable cases. However, the scientific evidence is still lacking for advising this procedure in routine practice.

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