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Case report / Olgu Sunumu

Killian-Jamieson diverticulum

Killian-Jamieson divertikülü

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Killian-Jamieson diverticulum localized lateral to the proximal cervical esophagus is a paraesophageal diverticulum. This diverticulum originates from weakness of the gap between muscles called Killian-Jamieson space. Discoordination of muscle increases the pressure in this gap and would result in prolapsed mucosa and submucosa. Dysphagia and regurgitation are the most common symptoms.

Key words: Computed tomography; Killian-Jamieson diverticulum; magnetic resonance imaging; pharyngoesophagogram.

Killian-Jamieson divertikula, proksimal servikal özofagusun yanında yerleşik olup, bir farengoözofageal divertikülüdür. Bu divertikula, Killian-Jamieson alanı denilen kaslar arasındaki zayıf noktadan köken alır. Kaslar arasındaki koordinasyon bozukluğu, bu bölgedeki basıncı artırarak, mukoza ve submukozanın sarkmasına neden olur. Disfaji ve yetersizlik, en sık görülen semptomlardır.

Anahtar sözcükler: Bilgisayarlı tomografi; Killian-Jamieson divertikülü; manyetik rezonans görüntüleme; farengoözofagogram.

Esophageal diverticula are classified as either pulsion or traction according to their formation mechanisms. Killian-Jamieson and Zenker's diverticula those localized proximal to esophagus are pulsion diverticulas. Killian-Jamieson and Zenker's diverticula are also known as paraesophageal diverticula. Both of these originate from the weak gaps between the muscles in the pharyngoesophageal region resulting from the outpouching of the mucosa and submucosa of the esophagus wall. The Killian-Jamieson diverticula (KJD) type forms via outpouching from the Killian-Jamieson space, and Zenker's diverticulum originates from the Killian triangle.

We present this case because paraesophageal diverticula, particularly KJD, are rare entities, and to our knowledge, there have been no reports of a KJD reaching the dimensions in our case in the literature.

CASE REPORT

A 72-year-old female patient was referred to our hospital with complaints of dysphagia and regurgitation that had lasted for five to six years. The patient stated that she had even experienced difficulty in swallowing liquids recently. A physical examination revealed a suspicious mass in the left neck region, but the results of other examinations and laboratory findings were within normal ranges.

The patient underwent ultrasonography (USG) and magnetic resonance imaging (MRI) with the prediagnosis of the neck mass. On USG, an unclear, contoured lesion with heterogeneous echogenicity that was posterior to the left thyroid lobe at the left side of the neck region was observed. The MRI detected a mass lesion showing heterogeneous signal intensity that was displacing the larynx to the right laterally

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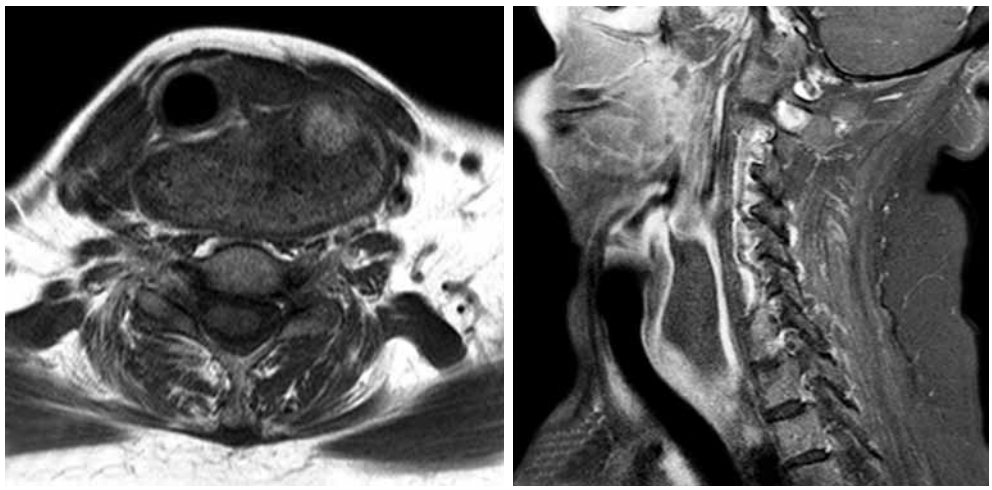

Figure 1. The T_1-weighted, non-contrasted axial section and T_1-weighted contrasted sagittal section show the diverticular formation between the larynx and cervical vertebra that was displacing the larynx anteriorly and laterally to the right and the thyroid gland and sternocleidomastoid muscle anteriorly. The stained walls and narrow mouth can be seen on the contrasted sagittal sections.

and anteriorly. Furthermore, at the midline and left neck region between the larynx and cervical vertebra, the left thyroid lobe and sternocleidomastoid muscle were being displaced anteriorly, and peripheral staining was also seen (Figures 1). The relationship of the lesion with the esophagus could not be clearly defined. Therefore, neck computed tomography (CT) and a pharyngoesophagram were planned. The neck CT revealed a lesion conforming to a diverticulum that contained food residues in the localization, as had been previously detected on the MRI (Figures 2). In addition, a diverticular formation with a narrow mouth and neck in which filling defects were observed due to food residues was observed on the pharyngoesophagram (Figure 3). The diverticulum measured 71x70x37 mm, which is one of the largest diverticulum on record. Due to the close proximity of a KJD to the recurrent laryngeal nerve and the related concern regarding possible nerve injury, surgical treatment is not usually an option unless the patient becomes symptomatic, either with or without associated complications.[1] A symptomatic patient should be offered the open surgical approach or an endoscopic technique such as an endoscopic

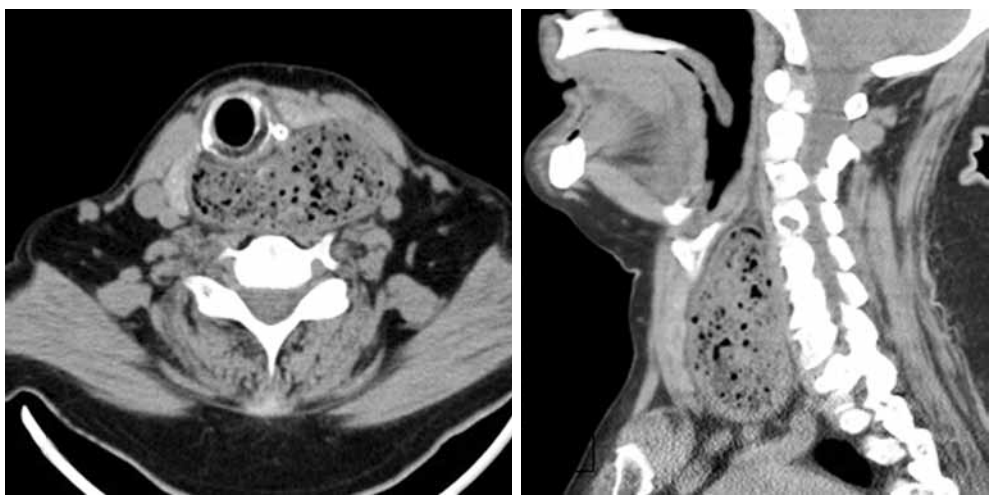

Figure 2. The axial and sagittal sections on computed tomography show the paraesophageal diverticular lesion between the larynx and cervical vertebrae that were displacing the larynx to the right laterally and anteriorly and the left lobe of the thyroid and sternocleidomastoid muscle anteriorly. It was located at the midline, predominantly on the left, and contained food residues.

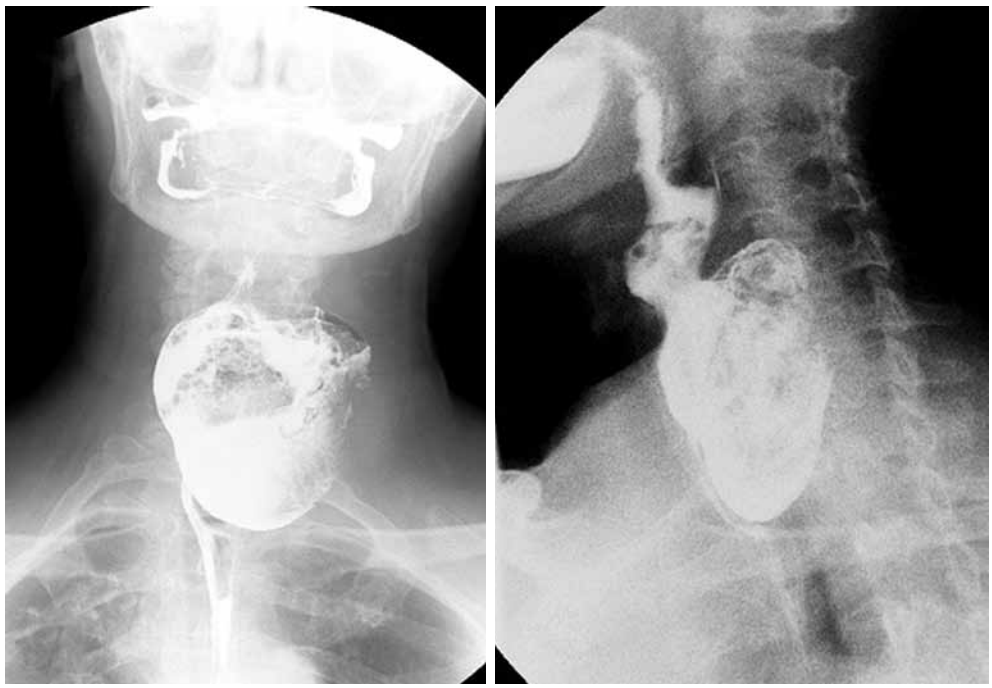

Figure 3. On the anterior-posterior and lateral pharyngoesophagram, a narrow neck diverticular formation in the proximal esophagus lateral to the pharyngoesophageal region can be seen.

diverticulotomy. Because our patient was elderly and symptomatic (severe dysphagia and regurgitation) and also had a restricted mouth opening, surgery through the neck was preferable.

The patient underwent surgery under general anesthesia in the supine position with her head turned slightly to the right. An incision was made at the left anterior neck to expose the anterior border of the sternocleidomastoid muscle. This muscle along with the underlying carotid sheath and its contents were retracted laterally away from the midline. The left recurrent laryngeal nerve was then identified and preserved. The diverticulum was then dissected free from the neck until it was visualized and freely mobile. The diverticula was excised and the anastomosis was peformed with double layer hand suture.

Next, a small drain was placed at the retropharyngeal space. There were no complications, and the follow-up over the next six months yielded normal results.

DISCUSSION

Killian-Jamieson diverticula belong to the category of paraesophageal diverticula and originate from the Killian-Jamieson space in the anterolateral wall of the proximal cervical esophagus.[1-3] This space is the weak region just inferior to the adhesion area of the cricopharyngeal muscle with cricoid cartilage and is lateral to the esophageus suspensor ligament.[4] Killian's triangle, from which the Zenker's diverticulum originates is located between the inferior pharyngeal constrictor muscle and the cricopharyngeal muscle.[1,5] This triangle is positioned on the posterior wall of the pharyngoesophageal segment and at the midline. The KJD is located just inferior to the cricopharyngeal muscle, whereas Zenker's diverticula can be found just posterior to this muscle.[4] Although the etiology for both diverticula is unclear, it is believed that cricopharyngeal spasms (achalasia), cricopharyngeal discoordination, and congenital weakness play active roles. Increased pressure in the oropharynx against the upper esophageal sphincter during swallowing results in the outward prolapse of the hypopharynx mucosa from the weak points and the paraesophageal diverticula.[6-8] The incidence rate of KJD ranges from 0.01 to 0.11%. In contrast, the prevalence of Zenker's diverticula is four times higher.[9] Paraesophageal diverticula are usually seen in the seventh and eighth decades of life,[10,11] with the most common symptom being dysphagia. Food regurgitation, halitosis, aspiration, esophageal obstruction, ulceration, hemorrhage, tracheoesophageal fistula, and squamous carcinoma are among the other symptoms and complications that may occur.

A diagnosis for KJD and Zenker's diverticula is best established through radiographic methods such as pharyngography. An endoscopy is beneficial for showing the mouth of the diverticula. Additionally, the location of the diverticulum opening along with its type and size can be viewed via a barium swallow test, which can also show the relationship between the diverticulum and the cervical esophagus. The diverticular neck is located above the pouch, and the neck of the pouch may be narrow or wide. In wide neck pouches, barium and food can easily go in and out of the pouch, but in narrow neck pouches, the food residues may be retained in the pouch, resulting in the enlargement of the pouch over time. The increased pouch size may then compress the esophagus, thus increasing the dysphagia. In our case, we also observed food residues in the pouch lumen. Furthermore, the larynx, thyroid, and other soft tissues were displaced from their normal locations due to the pouch enlargement and compressed.

The preferred treatment for a diverticulum is a diverticulectomy, which can be performed with or without a myotomy of the cricopharyngeal muscle. Paraesophageal diverticula the differential diagnosis, malignant lesions and the esophageal webs should be kept in mind.

In conclusion, paraesophageal diverticula are rarely observed entities, and a pharyngoesophagram is still the best imaging method for their detection. Computed tomography and MRI can be used to show additional pathologies along with area surrounding the diverticular formation.

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