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Killian Jamieson Diverticulum

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ABSTRACT

Killian-Jamieson diverticulum is an outpouching from the lateral wall of the proximal cervical esophagus. These diverticula are rare and are distinct from the more commonly known Zenker's diverticulum. Literature regarding Killian-Jamieson diverticula and its suggested management is scarce. The present article report describes the clinical findings, diagnosis and management of kilian jamieson diverticulum.

Keywords: *Diverticulum, Esophagus, Killian-Jamieson, Zenker's*

INTRODUCTION

The physician who first discovered the diverticulum was Gustav Killian and James Jamison. Killian Jamieson Diverticulum is an anterolateral out pouching at the level of c5-c6 vertebral bodies due to congenital weakness in the cervical esophagus just below the cricopharangeal muscle (Refer Fig 1). Dysphagia is the main symptom particularly for solid food. Because of its location, it is less susceptible for aspiration.

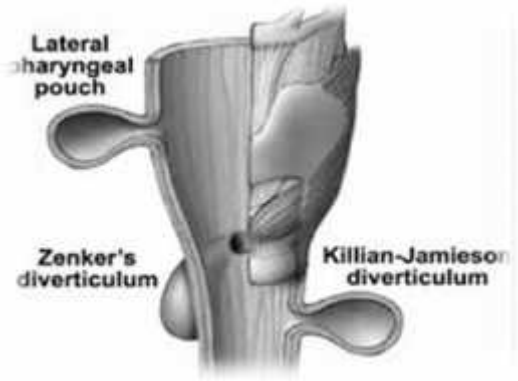

Fig 1 Killian –Jamieson Diverticulum

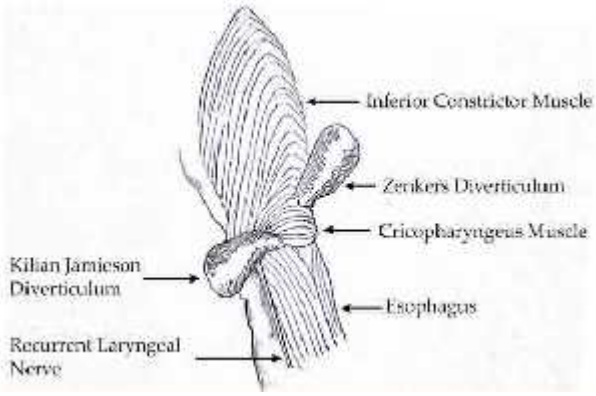

Fig 2 Killian Jamieson Triangle

CLINICAL FINDINGS

The most important feature is Dysphagia. According to the American journal of gastroenterology, the diverticulum arises due to muscular gap below the cricopharangeal muscle and lateral to longitudinal muscle of the esophagus. It is distinct from Zenker's Diverticulum in the latter part of development at the anatomical weak posterior zone just above cricopharyngeal muscle. As a result aspiration is rare in Killian Jamieson Diverticulum due to cricopharangeal muscles thereby preventing reflux into the hypopharynx.[4] Symptoms include Dysphagia, cough and epigastric pain is common to both type of diverticulum. According to journal of The association of Physicians of India, retension of food materials and secretion in the diverticulum can result in regurgitation ,halitosis,chronic cough,and even aspiration pneumonia in large diverticulum.[3]

KILLIAN JAMIESON TRIANGLE

The anatomical area or region between the thyropharyngeous and cricopharyngeous is defined as Killian Jamieson Diverticulum. According to case reports in gastroenterology, the Zenkers Diverticulum protrude though a muscular gap in the posterior wall of pharyngoesophageal junction inferior to the inferior constrictor muscle and superior to cricopharyngeal muscle .This site is known as Killians Triangle.[4]

On the other hand, Killian Jamieson Diverticulum protrudes through the muscular gap in the anterolateral wall of the pharyngoesophageal junction inferior to the cricopharyngeous muscle and superolateral to the upper esophageal longitudinal muscles. The site was first described by G.Killian in 1907, the finding was later confirmed by EB.Jamieson in 1934 and the area is now called as Killian Jamieson Triangle.[6]

DIAGNOSIS

The diagnosis of the diverticulum is based primarily on the radiographic findings rather than endoscopy. Whereas the endoscopist will visualize the opening of the diverticulum, the location is best shown on Pharyngography when passage of the barium bolus outlines the protruding cricopharyngeal bar .[5] The size of the sac and relationship of the sac to the cervical esophagus is also best shown on barium studies. The diverticulum can also be viewed by another procedure known as Barium Contrast Esophagography or Barium swallow Pharyngoesophagography.[2]

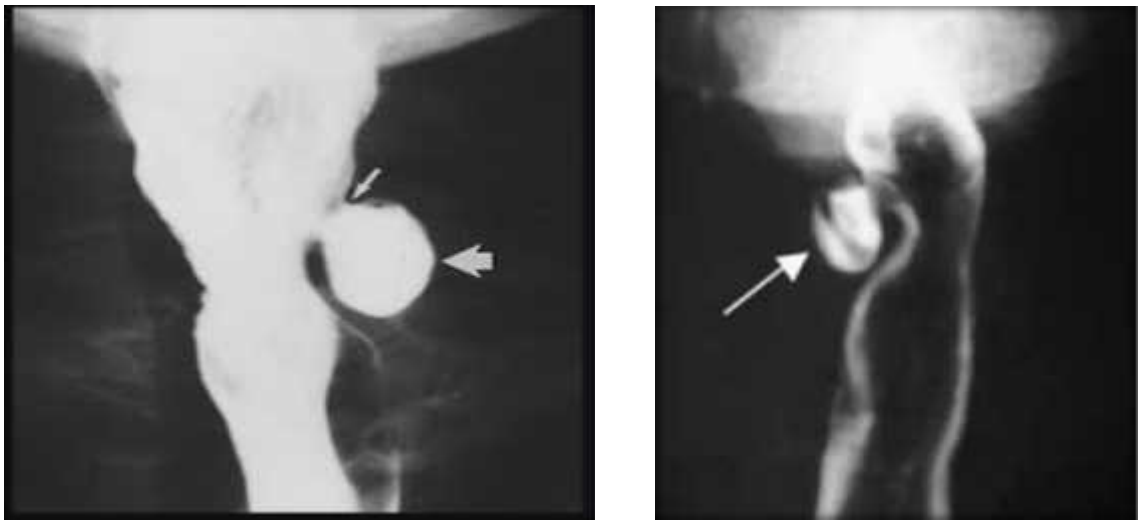

Fig 3 Barium Contrast Esophagography

MANAGEMENT

Very few data regarding the treatment of Killian Jamieson Diverticulum is available. Some case reports show treatment as surgical resection of the diverticulum without myotomy. Other treatments include being concerned with the underlying esophageal dysmotility and performance of an Esophagomyotomy associated with Diverticulectomy.[1] Sucessfull endoscopic treatments were also reported with some technical modifications. Altough there is a risk of nerve damage (The killian Jamison diverticulum area is directly adjacent to entry point of recurrent laryngeal nerve into larynx), no such case has been reported [2]. Another important consideration is the risk of recurrence, this is rare but possible. According to a case report published by The Korean journal of thoracic and cardiovascular surgery, a 68 Year old man who was diagnosed with Killian Jamieson Diverticulum underwent endoscopic treatment and surgical treatment for the same.[7] Another case report published by The Journal of Otolaryngology and Rhinology explains in detail about a 78 year old male with a history of persistent dysphagia who was diagnosed with Killian Jamison diverticulum. He underwent definitive open diverticulectomy. The pouch was found to be fully impacted with food debris. Following disimpaction and irrigation procedures, an orogastric tube was said to be used to cannulate the esophagus and strip gauze was packed into the pouch to aid in the identification of the sack once the neck was opened. A right-sided horizontal neck incision was said to be used to expose the diverticulum .The recurrent laryngeal nerve was found to be adherent to the medial neck of the

diverticulum, and was carefully dissected away prior to the excision of the pouch with an Endo GIA articulating stapler. A myotomy of the circular muscle fibers was also done immediately inferior to the diverticulum[8].

Endoscopic diverticulotomy is often reported as a minimally invasive surgery for Zenker Diverticulum. Endoscopic diverticulotomy is a transoral procedure that divides the septum between the esophagus and the diverticulum using a CO_2 laser or stapler to drain the contents of diverticulum into the esophagus. This procedure can also be applied to Killian Jamieson Diverticulum but as indicated by Surgical Case Reports, there is an increased risk of recurrent laryngeal nerve injury. Therefore, in the case of Killian Jamieson Diverticulum open surgery which can directly confirm the recurrent laryngeal nerve is indicated. Open surgeries for pharyngoesophageal diverticulum include diverticulectomy and diverticulopexy. [9] Patients with limited mouth opening or restricted neck hyperextension should be avoided for endoscopic techniques, as this category is susceptible to an increased danger for esophagus injury. [10]

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