

## Squamous Cell Carcinoma in the Lower Third of the Esophagus: A Case Report

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### ABSTRACT

Esophageal squamous cell carcinoma usually predominates in the flat cells of the upper two thirds of the esophagus and is rare in the distal third due to histologic characteristics. Smoking and alcoholism are the most important associated risk factors and the predominant symptom is dysphagia. Surgery is the treatment of choice in localized disease; in advanced stages chemotherapy is used for palliative purposes. We present the clinical case of a 77-year-old man with a history of significant positive alcoholism and smoking and systemic arterial hypertension. He presented 2 months of evolution with progressive dysphagia, from liquids to solids, anorexia and hematemesis. Endoscopy reports linear erosions in the gastroesophageal junction with a stenosing, infiltrative and partially ulcerated tumor. Computed axial tomography with evidence of hepatic nodules compatible with distant activity. He was referred to general surgery for gastrostomy for enteral tube feeding and to medical oncology for treatment with chemotherapy with palliative intent.

**KEYWORDS:** Dysphagia, esophagus cancer, epidermoid carcinoma, distal third.

### ARTICLE DETAILS

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### INTRODUCTION

According to the American Society of Clinical Oncology, esophageal cancer is the sixth most common cancer worldwide and is estimated to cause 450,000 deaths per year. The main histological types of esophageal cancer are epidermoid carcinoma and adenocarcinoma. Epidermoid carcinoma has a global incidence of 5.2 per 100,000.<sup>1</sup> Other less common histological types are melanoma, sarcoma, small cell carcinoma or lymphoma.<sup>2</sup>

The differences between the two main histologic types vary from anatomic location, geographic location of the population and specific risk factors associated with each histopathologic type.

It is estimated that three quarters of all adenocarcinomas are found in the distal third of the esophagus, while squamous cell carcinoma is usually distributed in the middle third and infrequently in the lower third.<sup>3</sup>

In the multicenter study carried out in Mexico City "variations in frequency of different digestive tract neoplasms among different socioeconomic statuses", Villalobos et al. showed that in 1971, in esophageal cancer,

the epidermoid histological subtype represented up to 75% of the cases while adenocarcinoma represented only 11-32%. Subsequently, in a second period, evaluated from 1989 to 2006, the epidermoid carcinoma subtype showed a decrease in frequency with 43% being related to this subtype and 55% corresponding to adenocarcinoma, so that epidermoid carcinoma changed its counterpart ratio from 7:1 in the first period to 0.8:1 in the second evaluation.<sup>4</sup>

The epidermoid histologic type tends to be observed in the flat cells lining the upper two thirds of the esophagus where up to 98% of its incidence has been reported. In contrast, adenocarcinoma usually develops in the lower third of the esophagus and usually originates on Barrett's mucosa.<sup>1,8</sup>

A specific factor related to the development of squamous cell carcinoma is heavy alcohol intake, as well as low intake of vitamins A and C, consumption of hot beverages and human papillomavirus (HPV) infection. Obesity, although usually reported as a risk factor for esophageal carcinoma, is more related to the development of adenocarcinoma.<sup>5</sup> Barrett's esophagus increases the risk 30 to 150 times more compared to a healthy individual. Exposure to polycyclic aromatic

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hydrocarbons in coal soot and stoves has been associated with epidermoid carcinoma. Other related factors that increase the risk of esophageal cancer is the socioeconomic status, which affects more people with a low socioeconomic level.<sup>1,7</sup> Also the low intake of folate in the diet has been related to esophageal cancer.<sup>2</sup>

The pathogenesis of squamous cell carcinoma has been related to the main risk factors; in alcoholism, damage to cellular DNA causing oxidation has been documented, while tobacco possesses chemicals with carcinogenic activity that can easily penetrate the esophageal epithelium.<sup>6</sup>

The most frequent symptom in the clinical presentation of esophageal cancer is dysphagia (74%), and it is characterized by being rapidly progressive to both liquids and solids. More than 50% present weight loss, directly related to prognosis, since a loss of more than 10% of body mass has been related to poor prognosis; odynophagia (17%), other related symptoms include anorexia, nausea, vomiting, upper gastrointestinal tract bleeding, symptoms of invasion such as dyspnea, rocky cough and pain at presentation.<sup>2</sup>

At initial presentation the physical examination is usually nonspecific; lymphadenopathy, specifically left supraclavicular (Virchow's node), hepatomegaly and pleural effusion usually indicate advanced disease.<sup>3</sup>

Computed tomography (cT) is the most widely used imaging test in the initial evaluation of patients diagnosed with esophageal cancer to rule out distant metastases (cM); the most frequently affected organs are the liver, lungs, bones and adrenal glands. About 30% of patients have metastases at the time of diagnosis.<sup>8</sup>

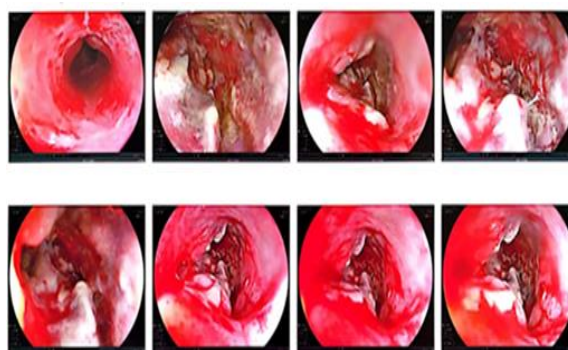
The current classification of esophageal cancer corresponds to the seventh edition TNM of the American Joint Committee on Cancer, where tumors of the esophagogastric junction are included, the current division includes three types according to the modified Siewert classification: type 1, with its epicenter in the distal esophagus between 5 and 1 cm above the esophagogastric junction; type 2, with its epicenter between 1 cm above and 2 cm below the esophago-gastric junction; and type 3, with its epicenter in the cardia between 2 and 5 cm below the esophago-gastric junction, in tumors extending into the esophago-gastric junction itself.<sup>8</sup>

In this there is a certain coincidence with the historical Siewert classification, also applicable to adenocarcinomas, which establishes 3 groups according to their topographic location, but unlike the TNM, the location is oriented towards the implications related to the most appropriate surgical technique. In the TNM8 those tumors whose epicenter is located 2 cm proximal or distal to the anatomic GEU are considered as adenocarcinomas of the GEU, which in Siewert's anatomic-surgical classification will correspond to some type I and all type II.<sup>9,10</sup>

This paper reports the clinical case of a patient with cancer of the esophago-gastric junction with epidermoid histology and a review of the literature on the subject.

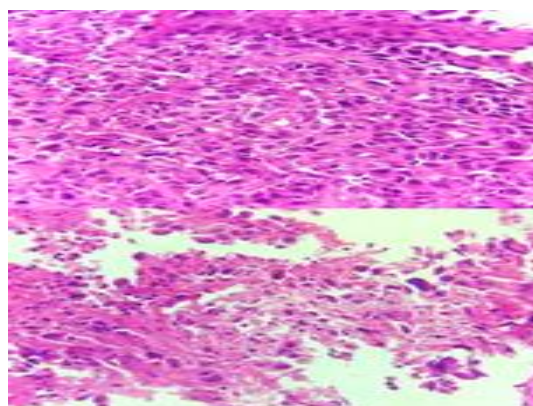
### CLINICAL CASE PRESENTATION

Male patient aged 77 years. As heredofamilial history of importance, father died secondary to renal cancer. History of smoking for 14 years, at a rate of 10 cigarettes a week, with a smoking rate of 1.4 suspended 20 years ago, alcoholism for 40 years, until reaching drunkenness, suspended 10 years ago. Arterial hypertension of 5 years of diagnosis in treatment. She came to the emergency department for 2 months of evolution characterized by dysphagia to solids that progressed to liquids, weight loss of 5 kg in the last month and adding two days prior to hospitalization postprandial dry cough, nausea and episodes of hematemesis. An upper endoscopy showed 12 mm linear erosions with epithelial changes in the gastroesophageal junction with an infiltrative and partially ulcerated stenosing tumor. (Figure 1)



**Figure 1. Upper endoscopy with epithelial changes in gastroesophageal junction with stenosing, infiltrative and partially ulcerated tumor.**

A biopsy was performed, the histopathological result reported poorly differentiated squamous cell carcinoma with tumor necrosis in 50% of the material studied.(Figure 2)



**Figure 2. Microscopic description: Histologic sections identify infiltrating epithelioid neoplasm, the cells are cuboidal with ample eosinophilic cytoplasm with focal keratinization, the nucleus shows marked atypia and prominent nucleoli.**

As a diagnostic complement, computed axial tomography with contrast medium of the thorax, abdomen and pelvis was requested, where hepatic nodules compatible with distant tumor activity were evidenced. (Figure 3).

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**Figure 3. CT of the thorax, abdomen and pelvis with hepatic nodules compatible with distant tumor activity.**

The patient was referred to general surgery for placement of gastrostomy for enteral tube feeding and to the oncology department for chemotherapy treatment with palliative intent due to the clinical stage at the time of diagnosis.

### DISCUSSION

The anatomical characteristics of the esophagus include the absence of serosa, which facilitates rapid dissemination to surrounding structures, as well as its susceptibility to damage of its epithelial structures to irritating substances or factors, favoring the histological metaplastic change towards the formation of neoplasms.

### CONCLUSION

In conclusion, this presented case underscores the intricate diagnostic challenges and therapeutic intricacies associated with squamous cell carcinoma located in the lower third of the esophagus. The clinical manifestation of esophageal squamous cell carcinoma in this anatomical region poses significant complexities, often leading to delayed diagnosis and advanced disease at presentation.

The multifaceted nature of esophageal malignancies demands a comprehensive and multidisciplinary approach, integrating advanced imaging modalities, endoscopic evaluations, and histopathological analyses for accurate staging and prognostication. In this specific case, the identification of squamous cell carcinoma in the lower esophagus prompts careful consideration of treatment modalities, taking into account tumor stage, patient comorbidities, and the potential impact on the overall quality of life.

The challenges in managing esophageal squamous cell carcinoma extend beyond the confines of its anatomical location, encompassing the intricate interplay of patient-specific factors, tumor biology, and therapeutic interventions. The presented case serves as a poignant reminder of the imperative need for ongoing research endeavors aimed at refining diagnostic algorithms, elucidating molecular mechanisms, and advancing targeted therapeutic strategies.

As the field of oncology continues to evolve, emphasis must be placed on the development of personalized treatment

approaches, integrating novel immunotherapeutic agents and molecularly targeted therapies to enhance efficacy and minimize treatment-related morbidities. Furthermore, collaborative efforts between clinicians, pathologists, and researchers are indispensable in unraveling the underlying genetic and molecular intricacies of esophageal squamous cell carcinoma, paving the way for precision medicine and improved patient outcomes.

This case report not only contributes to the existing body of literature but also underscores the vital importance of continued vigilance, early detection, and a multidisciplinary approach in the management of esophageal squamous cell carcinoma, particularly in its less common presentation in the lower third of the esophagus. Ultimately, the journey from diagnosis to treatment in such cases necessitates a nuanced understanding of the intricate landscape of esophageal malignancies, guiding clinicians toward more informed and patient-centered therapeutic decisions.

### REFERENCES

- I. Arnold, M., Soerjomataram, I., Ferlay, J., & Forman, D. (2015). Global incidence of oesophageal cancer by histological subtype in 2012. *Gut*, *64*(3), 381-387. <https://doi.org/10.1136/gutjnl-2014-308124>
- II. Brenes TZSA. Bibliographic Review of Esophageal Cancer. *Medical Journal of Costa Rica and Central America LX-X* 2012:539-44.
- III. Enzinger PC, Mayer RJ. Esophageal cancer. *N Engl J Med* [Internet]. 2003;349(23):2241-52. Available at: <http://dx.doi.org/10.1056/NEJMra035010>
- IV. Villalobos Pérez JJ, Bourlon MT, Loaeza Del Castillo A, Torres Villalobos G. A 35-year report of the study of group on gastrointestinal cancer in Mexico City: variations in frequency of different digestive tract neoplasms among different socioeconomic statuses. *Gac Med Mex* 150(1):49-57. Available at: <https://pubmed.ncbi.nlm.nih.gov/24481431/>
- V. Uhlenhopp, D. J., Then, E. O., Sunkara, T., & Gaduputi, V. (2020). Epidemiology of esophageal cancer: update in global trends, etiology and risk factors. *Clinical Journal of Gastroenterology*, *13*(6), 1010-1021. <https://doi.org/10.1007/s12328-020-01237-x>.
- VI. Napier, K. J., Scheerer, M., & Misra, S. (2014). Esophageal cancer: A Review of epidemiology, pathogenesis, staging workup and treatment modalities. *World Journal of Gastrointestinal Oncology*, *6*(5), 112-120. <https://doi.org/10.4251/wjgo.v6.i5.112>.
- VII. (Hermida Pérez JA, Bermejo Hernández A, Sobenes Gutierrez RJ, Arroyo Díaz R. Esophageal squamous cell carcinoma, stenosing, stage IV, in a

## Squamous Cell Carcinoma in the Lower Third of the Esophagus: A Case Report

41-year-old woman. Description of a clinical case. *Semergen* 2012;38:44-8).

- VIII. Encinas de la Iglesia J, Corral de la Calle MA, Fernández Pérez GC, Ruano Pérez R, Álvarez Delgado A. Esophageal cancer: anatomical peculiarities, staging and imaging techniques. *Radiology* 58(5):352-65. Available at: <https://www.elsevier.es/es-revista-radiologia-119-articulo-cancer-esofago-particularidades-anatomicas-estadificacion-S0033833816300741>
- IX. Escrig Sos J, Gómez Quiles L, Maiocchi K. The 8.<sup>a</sup> edition of the AJCC-TNM classification: new contributions to the staging of esophagogastric junction cancer. *Cir Esp (Engl Ed)* 97(8):432-7. Available at: <https://www.elsevier.es/es-revista-cirugia-espanola-36-pdf-S0009739X1930096X>
- X. Rice TW, Patil DT, Blackstone EH. 8th edition AJCC/UICC staging of cancers of the esophagus and esophagogastric junction: application to clinical practice. *Ann Cardiothorac Surg* 2017 6(2):119-30. Available at: <http://dx.doi.org/10.21037/acs.2017.03.14>