Autopsy Case Reports

Article / Autopsy Case Report
Artigo / Relato de Caso de Autópsia

Occult esophageal squamous cell carcinoma with metastases to the spine and central nervous system

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ABSTRACT

Esophageal malignancy encompasses a group of diseases that are mostly represented by the squamous cell carcinoma and the adenocarcinoma. Quite frequently, these neoplasms present aggressive behavior; therefore, the diagnosis is often made when the condition is in advanced stages. Dysphagia is the typical clinical complaint, although it is present only when most of the lumen is obstructed. Therefore, quite often, the metastatic disease is first diagnosed, which contributes to the patient's poor survival expectancy. The authors report the case of a 58-year-old man who looked for medical care complaining of a long-term history of scapular pain. The diagnostic work-up disclosed a cervical spine lytic lesion surrounded by a tumoral mass shown by computed tomography. The cervical tumor was sampled by fine needle aspiration, revealing an undifferentiated carcinoma. The outcome was unfavorable and the patient died. The autopsy findings revealed metastatic disease to the spine and central nervous system, and the primary tumor was found to be an esophageal squamous cell carcinoma, which had progressed without typical dysphagia.

Keywords
Carcinoma; Squamous Cells; Esophageal Neoplasms; Neoplasm Metastasis; Spine; Brain.

CASE REPORT

A 58-year-old Caucasian man, born in a southern state of Brazil, sought the medical facility complaining of a 3-month history of continuous right shoulder burning pain (precisely in the scapular region). This symptom irradiated from the cervical spine hampering the movements of his right arm and was alleviated with the flexion of the neck to the right position. He referred 8 kg of weight loss during this period, but denied inappetence, dysphagia, other dyspeptic symptoms or change in intestinal habits. He was a pottery worker for 25 years, was used to drinking daily 250 g of alcohol for 5 years and smoking 40 packs/year of tobacco.

The cervical spine radiography disclosed a lytic lesion in the vertebral body of C6 characterized as a ghost vertebra, consistent with bone metastasis (Figure 1A). The patient was hospitalized for investigation and pain control. The cervical spine computed tomography (CT) depicted a tumor mass (Figure 1B and 1C), which cytological examination of the fine needle aspirate was consistent with an undifferentiated carcinoma (Figure 2).

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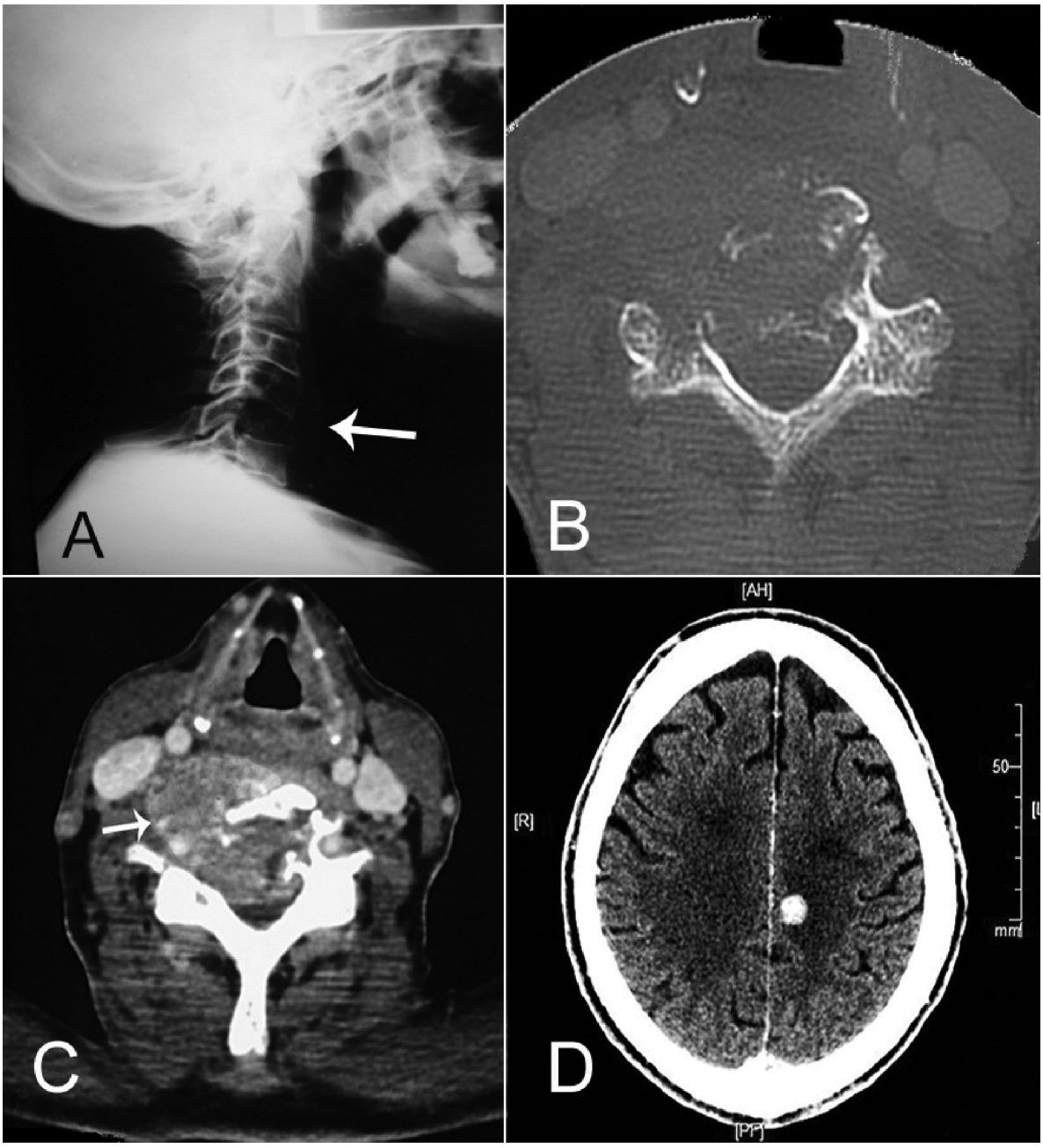

Figure 1. A – Lateral cervical spine radiography showing lytic lesion in C6 (arrow); **B** – Cervical computed tomography (CT) (bone window) showing vertebral body and left pedicle lytic lesion; **C** – Cervical CT (soft tissue window) showing the tumoral mass with heterogeneous contrast enhancement; **D** – Parietal nodular lesion that shows contrast enhancement, consistent with metastasis.

During hospitalization, the patient presented mental confusion, psychomotor agitation, and drowsiness, followed by loss of muscular strength in the right superior limb. The brain CT revealed the presence of a left parietal nodular lesion (Figure 1D). Neurological and clinical status worsened; therefore, palliative care was instituted and the investigation for malignancy of unknown primary site was discontinued. Immunohistochemical analysis of the aspirate could not be performed. The patient died soon after hospitalization and an autopsy was performed.

AUTOPSY FINDINGS

An ulcerated and vegetating lesion, measuring 3.0 × 1.5 cm was found in the distal third of the esophagus (Figure 3A), which, on histology, was represented by an epidermoid carcinoma with

poorly-differentiated and well-differentiated areas with basaloid transformation (Figure 3B). Metastasis to the left brain hemisphere (Figure 4A and 4B) was found. Thoracic and cervical spine vertebrae were enlarged by tumoral infiltration of the bone and soft tissue. Additional findings included liver metastasis and neoplastic cells filling the pulmonary vessels.

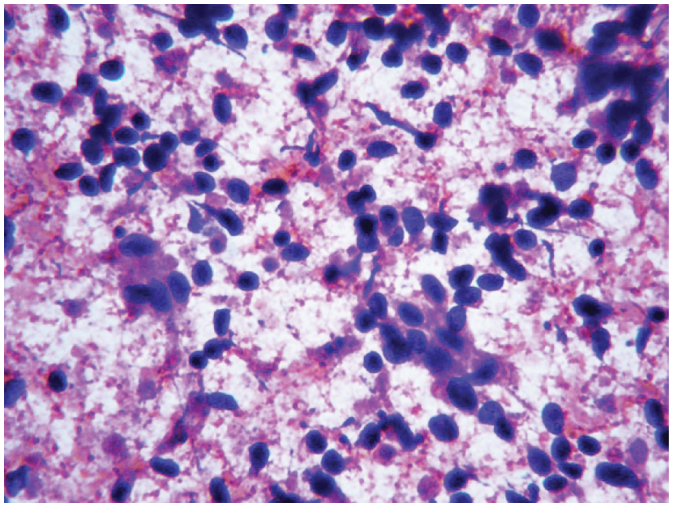

Figure 2. Photomicrography of the fine needle aspiration cytology showing the presence of non-differentiated malignancy (H&E, 400X).

DISCUSSION

Esophageal carcinoma (EC) is the eighth most common type of cancer. In 2008, 481,000 new cases per year were registered accompanied by 406,000 deaths, worldwide, in the same period representing the sixth cause of death due to neoplasia.[1] This neoplasm predominantly affects men (male:female ratio of 5.84:1) with a mean age of 61.6 years; whereas women show a mean age of 72.9 years at the time of diagnosis.[2]

The diagnosis of EC is frequently challenging since the typical symptom, represented by dysphagia, occurs only when two-thirds of the visceral lumen is involved.[3,4] Therefore, the diagnosis is predominantly done in the advanced stages (stages III and IV),[3] which

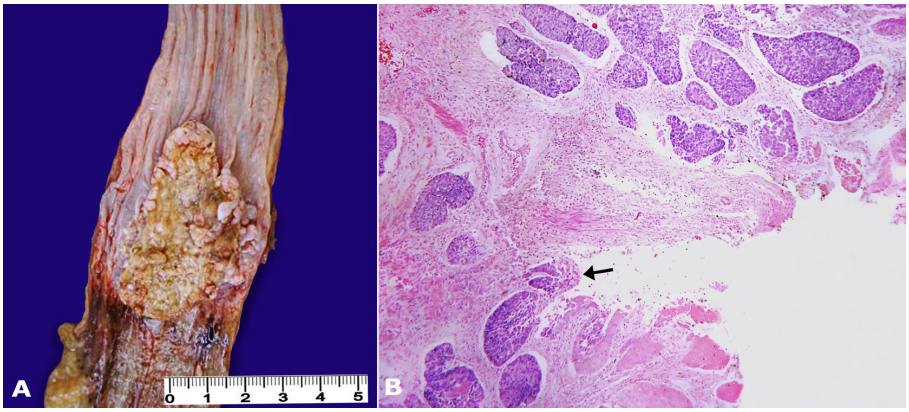

Figure 3. A – Gross view of the ulcerovegetating lesion on the esophageal distal third, measuring 3 × 1.5 cm; **B** – Photomicrography of the ulcerated esophageal lesion showing the presence of epidermoid carcinoma (H&E, 40X).

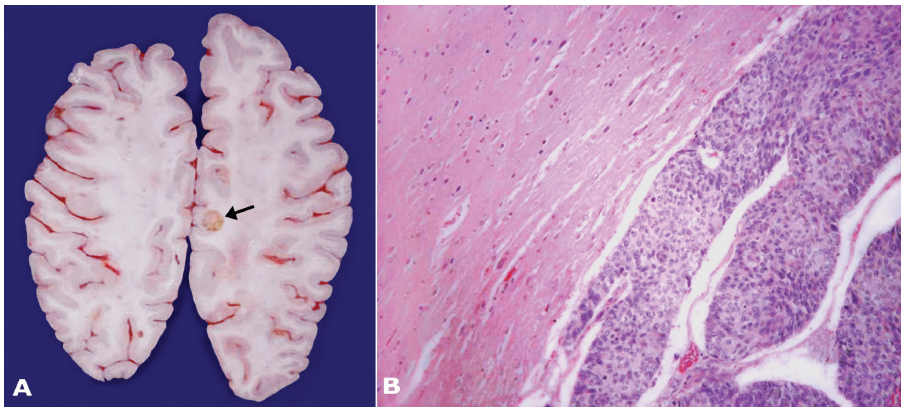

Figure 4. A – Gross view of the brain showing the presence of a cortical nodular lesion (arrow); **B** – Photomicrography of the transition between the nervous parenchyma and the neoplastic infiltration (H&E, 40X).

justifies the poor prognosis, represented by the five-year survival rate of less than 10% in Western countries.[5]

EC is a neoplasia that has a high lethality. The number of deaths per year is very similar to the number of new cases.[6] Survival after the diagnosis ranges from 3 to 6 months.[7]

According to the Brazilian National Institute of Cancer (INCA-Brazil), genetic and environmental factors are involved with the development of EC. Around 80% of EC are related to tobacco smoking, alcoholism, and alimentary habits.[1,3,4]

Sons and Borchard,[2] in their study comprising 171 cases of EC, found 91.8% of cases of epidermoid carcinoma, 6.4% of adenocarcinoma, and 1.8% of other types. Epidermoid carcinoma, derived from the non-keratinized stratified epithelium, occurs mainly after prolonged tobacco exposure, arises in the middle and distal third of the esophagus, and characteristically involves men over 50 years.[8,9] Adenocarcinoma frequently involves the distal third of the esophagus, occurs more frequently among obese patients, and is related to gastroesophageal reflux disease.[8,9]

EC presents fast growth, which is evidenced by 50% of the new cases showing non-resectable metastases at the time of diagnosis.[10] Metastatic dissemination may occur through the lymphatic system, the blood stream, or by contiguity. The main metastatic sites are: abdominal lymph nodes (45%) cervical and supraclavicular lymph nodes (3–37%), liver (23–47%), lungs (22–52%), bones (45–14%), and central nervous system (1–5%).[11,12]

The case reported herein is in accordance with the literature with respect to the histologic type and the risk factors; namely, age, gender, origin,[13] lifestyle, and alimentary habits, besides the history of alcoholism and tobacco smoking.[3,14]

Dysphagia and odynophagia, or any retrosternal discomfort, are fundamental diagnostic clues.[4,15] In our case, the lack of such symptoms was responsible for the misdiagnosis, and was the reason for not performing an upper digestive endoscopy. The lack of esophageal symptoms was explained by the non-stenotic pattern of the lesion.

The right shoulder pain, which presented the patient's complaint, was due to the cervical spine metastasis. Esophageal epidermoid carcinoma bone metastases most commonly occur in the lumbar spine followed by the involvement of the thoracic and cervical regions. Compressive symptoms are more frequently found in the thoracic area of the spine, followed by the cervical (10–30%) and sacral/lumbar (20–30%), probably because of the narrow diameter of the spinal canal.[16]

In 1982, 1984, and 1986, three different researchers reported autopsy studies on esophageal cancer.[2,17,18] In these series, which comprised 79, 171, and 231 cases, respectively, no bone metastases were found. However, Siame et al.[7] reported three cases of esophageal epidermoid carcinoma with no esophageal symptoms, which presented bone metastases to the femur and vertebrae.

In the case reported herein, the mental status and neurological signs, as well as the tomographic findings, were concordant with the autopsy findings. Liver and pulmonary metastases are also in accordance with the literature.[11,12,17]

As aforementioned, EC is frequently asymptomatic, which, in this case, was responsible for the lack of clinical investigation. Therefore, once again, the autopsy shows undeniable value for medical assistance and teaching purposes, besides the demonstration of the rare metastatic site of EC.

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