CASE REPORT

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Squamous esophageal carcinoma and mucinous adenocarcinoma of the colon – an unusual association

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Abstract

The existence of a simultaneous cancer of the esophagus and colon is a rare situation that recognizes an increased incidence in recent years in the world, probably as a result of the improved measures of diagnosis and treatment, as well as the development of screening programs. The aim of this work is to present a case of synchronous esophageal squamous carcinoma with mucinous adenocarcinoma of the hepatic angle of the colon. The patient was hospitalized to our Surgical Clinic with the thoracic squamous esophageal carcinoma diagnosis. On admission, symptoms were dominated by overall dysphagia, patient showing a weight loss of 10 kg for the last 30 days. Preoperative imaging tests did not revealed regional or distant metastatic disease. Preoperative colonoscopy was incomplete (only until the splenic angle of the left colon) due to the insufficient mechanical preparation. On laparotomy, a carcinoma of the hepatic angle of the colon, partially stenosing was discovered. An upper pole esogastrectomy with intrathoracic esogastrostomy and a right colectomy with ileotransversostomy were practiced, at the same operative session. Postoperative evolution was poor and the patient died on the ninth day from the surgery during an alcohol withdrawal crisis.

Keywords: synchronous carcinomas, esophageal squamous cell carcinoma, adenocarcinoma of the colon, esogastrectomy, colectomy, alcohol withdrawal syndrome.

Introduction

Synchronous primary cancers are defined as two malignant tumors at the same patient, concomitantly or found in less than six months interval of each other and having different histological aspects [1]. The synchronous malignancy of the esophageal cancer is commonly associated with cancers of the neck and head, stomach and lung cancer [2–4], but also the association with kidney cancers was reported [5].

The association of the esophageal carcinoma with the colon cancer is exceptional, but the reported cases are increasing in incidence [6, 7].

In this paper, we present a case of an esophageal squamous cell carcinoma associated with a mucinous colonic adenocarcinoma, focused on the rarity of this association and its diagnosis and therapeutic implications.

Case presentation

Patient DC, male, 57-year-old, with a history of a heavy smoker and drinker, presented in our Surgical Clinic with complete dysphagia and an important weight loss (over 10 kg for the last month). Clinical examination revealed a patient with a relatively good general status, without modifications on physical examination of the thorax and the abdomen, without any symptoms or signs suggesting a colonic malignancy (no disturbances in the bowel movements, without abdominal pain or rectal bleeding).

Blood tests showed a hemoglobin level of 12.5 g%, blood proteins of 6 g% and normal values for the rest of the usual blood and urine tests. Even though the patient was a heavy smoker, the spirometry and electrocardiogram (EKG) were normal.

An X-ray barium meal revealed a tight stenosis with malignant characters on the midthoracic esophagus and a slight dilatation of the upper esophagus; the stomach and duodenum were normal.

Subsequently, an endoscopy with biopsy was practiced, confirming the lesion, its location in the thoracic esophagus and the severe degree of the stenosis that did not allowed exploration of the distal esophagus. The esophageal endoscopic ultrasound was not available at that moment; however, it was not considered very reliable because of the high degree of the esophageal stenosis. The result of the pathological examination of the biopsy specimens was squamous cell carcinoma.

Computed tomography highlighted the esophageal stenosis, over 3 cm length, across the thoracic esophagus, without signs of tumoral extension (T_2 or T_3) beyond the esophagus and without peri-esophageal enlarged lymph nodes; no metastases or other lesions were found in the lungs, liver or any other organs in the abdomen.

A colonoscopy was tried, in order to identify possible colonic lesions that would contraindicate the use of the colon as an esophageal replacement graft, but it was incomplete due to the poor mechanical preparation, which

has been made only by enemas; moreover, there was no clinical suspicion of a colonic lesion, because the patient did not presented any specific symptoms.

The performed investigations concluded that the esophageal tumor is resectable (a presumed T_2/T_3 N_0 M_0 stage), and the patient is suitable for esophageal resection with curative intent.

The initial approach was through the fifth intercostal space, in the right thorax, with dissection, ligation and sectioning of the azygos vein. The esophageal tumor was 5 cm in length, apparently invading the entire esophageal wall, but with no extension into the adjacent organs; no enlarged or modified lymph nodes were identified, periesophageal or in the mediastinum.

The tumor-bearing esophagus was dissected and resected about 10 cm above the tumor's upper edge (Figure 1, A–C); a microscopic examination (frozen sections) of the esophageal stump showed no malignant cells.

Subsequently, a median laparotomy was performed; no peritoneal or hepatic metastases were found and also no enlarged lymph nodes were identified (celiac axis, perigastric, hepatic artery), but the complete exploration of the peritoneal cavity revealed a 6 cm partial stenosing tumor of the hepatic angle of the colon, which apparently invaded the entire colonic wall. The colic tumor is resected through a right colectomy with an ileotransversostomy (Figure 1D). Subsequently, the esophageal resection was completed (upper pole esogastrectomy) followed by esophageal reconstruction with the remnant stomach ascended through the esophageal hiatus into the right thorax and a manual end-to-end esogastrostomy. There were no other intraoperative incidents, the intervention being ended with a feeding jejunostomy, with post-operative enteral nutrition purpose.

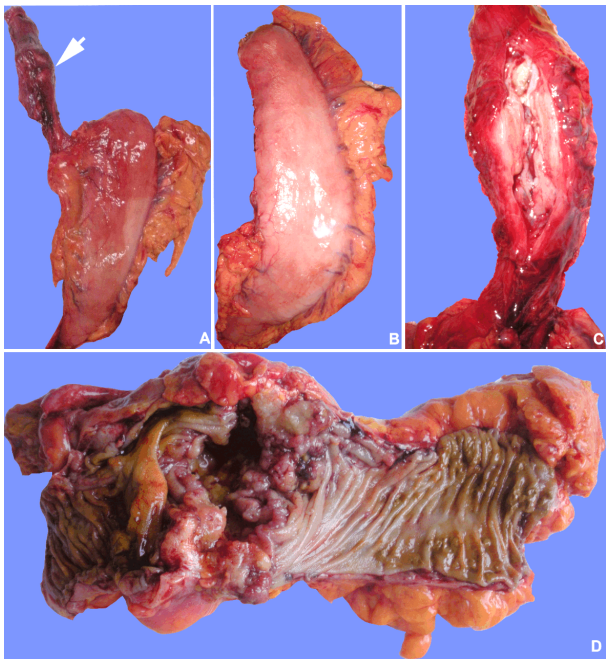

Figure 1 – ***(A) Esophageal tumor – white arrow (intra-operative aspect); (B) Esophageal replacement gastric tube (intraoperative aspect); (C) Esophageal tumor sectioned (fresh resection specimen); (D) Right colon tumor (sectioned, fresh resection specimen).***

Postoperative evolution was normal for the first 24–48 hours, with normal drainage, both from the right thorax and the abdomen, and normal values of the biological tests, the tracheal intubation tube being removed in the first postoperative day. Forty-eight hours after the surgery, the patient began to show signs of alcohol withdrawal: extreme agitation, disorientation, in spite of normal oxygen saturation of the blood on spontaneous ventilation, normal blood pressure, and a normal diuresis. Also, no peritoneal signs were present and the drainage from the right thorax and abdomen continued to be normal, with serous and hematic aspect.

The specific treatment for alcohol withdrawal was added (in intensive care unit, at the psychiatrist recommendation), with no response, with progressive worsening of the general condition, with cardiorespiratory, renal and hepatic impairment, and the patient died on the ninth postoperative day. During this period, the patient did not present any signs of intrathoracic or intra-abdominal anastomosis dehiscence, with no fever, no abdominal pain, with bowel movements resumed and a clear liquid drainage through the intrathoracic and the abdominal tubes; the blood tests, repeated abdominal ultrasounds and thoracic and abdominal X-rays were normal.

Microscopic examination of the surgical specimens revealed a poorly differentiated squamous esophageal carcinoma (Figure 2, A and B) invading muscular layer of the esophagus (pT_2 stage), with no metastatic lymph nodes (pN_0). The microscopic structure of the colic tumor was of a G_2 adenocarcinoma of the colon with mucinous areas (Figure 2, C and D), invading muscularis propria (pT_2 stage), also without metastatic lymph nodes (pN_0).

Discussion

Synchronous cancer of the esophagus with other sites recognize a progressive increase in incidence in the world, probably due to the global changing of the conditions of life and as a result of improvements in diagnosis and treatment of the patients with esophageal cancer, which require a thorough exploration of these cases; also, the development of screening programs allow simultaneous detection of these synchronous primary tumors [6].

The existence of other malignancies associated with a concomitant esophageal cancer is estimated to be 8.3–27.1% [6–13]; the existence of a second cancer with the esophageal cancer, which is asymptomatic, was present in 28% of patients with synchronous carcinomas [11]. In our case, the specific symptoms for colonic malignancy were absent. The incidence of the colon cancer associated with esophageal tumors has been reported as being 1.8%, representing 16% of cases of the synchronous esophageal cancers [6].

Synchronous development of the esophageal cancer with another type of cancer is more common in heavy smokers and chronic alcohol consumption, as in the case we have presented, but genetic modification (molecular instability), endocrine and environmental factors are causes that can be incriminated as key factors in the occurrence of these types of tumors [6, 11, 14]. Kagey

et al., have found a statistically significant association between the heavy alcohol consumption and the occurrence of a second primary malignancy in patients with esophageal cancer (35 *vs.* 26%, p=0.017) [6].

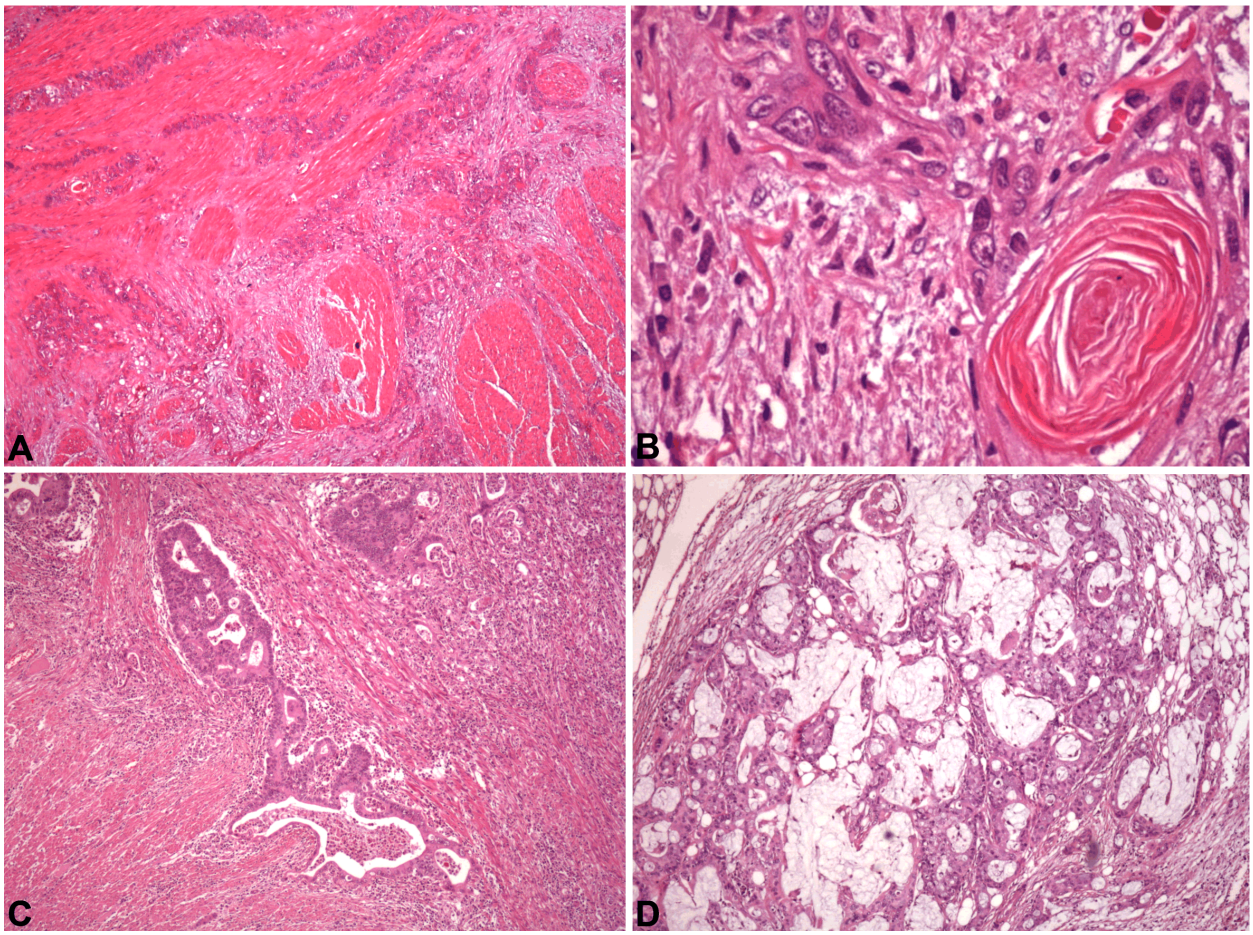

Figure 2 – ***(A) Poorly differentiated (G_3) squamous carcinoma of the esophagus with invasion in the muscular layer (pT_2); (B) Squamous cell carcinoma of the esophagus – detail; (C) Moderately differentiated adenocarcinoma of the colon (G_2) with necrotic areas; (D) Mucinous carcinoma of the colon.***

In the past, it was thought that these synchronous cancers may be only oncological treated, being considered as non-operable. Nowadays, due to the advances in the surgical techniques, anesthesia and intensive care, and oncological therapies, an increased number of authors have reported good postoperative results after the resection of the synchronous cancers, in the same operative session or in a seriate manner [5, 6].

The advent of modern diagnostic methods, such as positron-emission tomography (PET)-scan, allows the detection with greater accuracy of the presence of a synchronous cancer, with a sensitivity of 88.2%, but the increased costs of these methods makes them unavailable in many medical centers [15].

Another aspect to be discussed concerns the exploration of the colon, which is important in esophageal cancer surgery, as the secondly important esophageal substitute; the pancolonoscopy is used to assess whether a colic lesion is present and contraindicate the use of the colon for esophageal replacement, but nevertheless, to detect a synchronous cancerous lesion. If the patient presents total dysphagia, mechanical preparation of the colon may be done only by enemas, which sometimes are inefficient, aspect noticed in our case. A radiological exploration of the colon (barium enema) may be also used, but the results may also be impaired by a poor mechanical preparation.

Co-existence of the esophageal squamous cell carcinoma and a colon tumor raises the question if this is or not an esophageal tumor metastasis, very rare but a possible situation [16]; even if this is the case, if the colonic metastatic tumor is unique, especially if found accidentally, some authors have performed esophageal and malignant colon resection at the same operative session, but with poor prognosis: the patient died on the 72nd postoperative day due to the multiple bone metastases and pleural dissemination [16].

Synchronous cancers of the esophagus and other site pose many therapeutic difficulties, as confirmed by all authors who met with this situation, regardless of the location of these tumors [6, 17, 18]; since their incidence is not very high the experience is limited and the therapies are not standardized [5].

The only logical treatment that can potentially cure these cases is surgery, which must remove in oncological limits both malignant lesions, either serially or in the same operative session. In our situation, the decision to performed colectomy in the same session with esophageal resection it was taken intraoperative forced by the fact that the colic tumor was advanced but in a curative stage.

Some authors have reported good results after multiple tumoral resections, even better than other statistics related to "usual" cases of a single esophageal tumor surgically treated [6].

Postoperative prognosis for these patients, in terms of five-year survival after the resection, appears to be similar to the prognosis of the patients with resected cancer of the esophagus, as a single malignant site, the most important prognostic factor being the esophageal tumor stage [6, 11, 13]. Kagei *et al.*, reported a five-year overall survival rate of 41% for associated esophageal and colorectal resected cancer; considering the same stage, there was no significant difference in five-year overall survival rates between patients with only esophageal cancer compared with patients with a synchronous primary malignancy (13–28% for patients with synchronous cancers compared with 29–35% for patients without an associated malignancy, p=0.256) [6].

Chronic alcohol consumption is met in 61% of patients with esophageal cancer. All patients undergoing major surgery, as the esophageal resection, which are heavy, chronic drinkers and smokers presents a major risk for developing alcohol withdrawal syndrome; Spies *et al.*, have found that 8.6% of the patients who had undergone major surgery for neck and esophageal cancer had developed withdrawal syndrome [19]. Some studies have demonstrated the efficacy of prophylactic treatment for preventing the withdrawal syndrome (medication that was not used in our case) but standard medication for treatment of this withdrawal is not without severe complications [19]. In our case were used benzodiazepine and haloperidol medication, with unfavorable response. Zhang *et al.*, used with good results inhalation of alcohol vapor driven by oxygen, in order to treat the alcohol withdrawal syndrome developed after esophageal resection [20].

Conclusions

The case we presented suggests that in the preoperative assessment of patients with esophageal carcinoma, pancolonoscopy plays a very important role, but, due to the rarity of these associations is difficult to be promoted as a standard investigation. The therapeutic strategy over these patients (multivisceral resections in the same surgical procedure or seriate procedures) is difficult to be standardized, although multiple resections in the same operative session, as in the case we have presented, seem to be the best attitude. Associated chronic alcohol consumption, a causative factor in esophageal squamous carcinogenesis, must alert the clinician over the risk of the postoperative severe withdrawal syndrome development, which can lead to the patient's death, not necessarily related to the surgical treatment.

Conflict of interests

No conflict of interest in participating and publishing this study is declared.

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