

## Squamous Esophageal Carcinoma Synchronous to Pericolonic Malignant Conjunctive Tumor

MANUELA IOANA VASILE<sup>1</sup>, S.Ș. MOGOANTĂ<sup>2</sup>,  
D.I. VÎLCEA<sup>2</sup>, C.S. MIREA<sup>2</sup>, DANA MARIA ALBULESCU<sup>3</sup>,  
T.V. DUMITRESCU<sup>2</sup>, M. POPESCU<sup>3</sup>, E. MORARU<sup>2</sup>

<sup>1</sup>Radiology and Medical Imaging Department, Emergency Clinical Hospital Craiova, Romania

<sup>2</sup>Second Surgical Clinic, Emergency Clinical Hospital Craiova,  
University of Medicine and Pharmacy of Craiova, Romania

<sup>3</sup>Radiology and Medical Imaging Department, Emergency Clinical Hospital Craiova,  
University of Medicine and Pharmacy of Craiova, Romania

**ABSTRACT:** Esophageal carcinoma represents a great diagnostic and therapeutic challenge due to the anatomical situation and physiopathology of the disease. The medical challenge can be even greater since esophageal carcinoma can evolve concomitant to another malignant tumor with different localization. This paper's aim is to present a case of squamous esophageal cancer associated to another primitive malignant tumor-malignant pericolonic conjunctive tumor, this kind of association being singular in medical literature from our knowledge. Upon emergency presentation the patient was sketching a sub-occlusive syndrome with mild anemia and inflammatory syndrome, somehow suggesting a possible right colon cancer. However, discreet upper digestive pole symptomatology that, on first sight, seemed secondary, made the consultant to perform a superior digestive endoscopy that raised a strong suspicion of early stage esophageal carcinoma. Further exploration was not completed because occlusive complication occurred and the patient needed emergency surgery. On laparotomy a stenotic right colic angle tumor was discovered that later proved to be extra-mucosal, with conjunctive origin. Our paper focuses on highlighting the crucial importance of the imagistic explorations in the primary diagnosis of esophageal carcinoma, in the correct staging (lymphatic extension, loco-regional or distant metastases) and also for malignant tumors with another localization that can radically modify the therapeutic strategy.

**KEYWORDS:** squamous esophageal carcinoma, synchronous cancers, medical imaging

### Introduction

Esophageal cancer (squamous, adenocarcinoma, sarcoma, etc.) is for the majority of cases isolated but for a percentage between 1.8% and 27% of cases, it can be associated with another primitive malignant tumor located to the neck, head, lung or stomach level [1-7].

Although there is not full consensus, synchronous primitive cancers can be defined as two or more distant malignant tumors with different histologic aspects, diagnosed for a certain patient in the same hospital admission, or in a period less than 2-6 months [2,8].

Esophageal squamous cancer developed synchronous to another primitive malignant tumor has a frequency between 2.73% and 11% of cases [1,4]. Beside the previous mentioned associations, squamous esophageal cancer can be exceptionally associated with colonic cancer [2] or renal cancer [1]. Those reported cases are singular in the literature. There have been reported very rare cases of esophageal metachronous cancer after the treatment for a renal carcinoma [9].

Our paper reports a case of squamous esophageal carcinoma synchronous to a pericolonic malignant tumor with conjunctive origin appearance. In the studied literature we did not find an association between an esophageal cancer and another conjunctive malignant tumor with distant location.

### Case presentation

We present the case of a 66 years old male patient, admitted to our surgical service in November 2015, with associated pathology consisting of: diabetes mellitus type 2, systemic atheromatosis, chronic viral hepatitis B. The patient had a long history of smoking and chronic alcohol abuse. He was admitted by emergency room, accusing abdominal pain, weight loss, fever, occasional intestinal transit impairment, inconstant vomiting followed by episodes of intermittent incomplete dysphagia. The patient consented in writing to all medical procedures, as well as to providing all relevant medical data for scientific research and dissemination of results, under the protection of all personal details.

Physical examination revealed an underweight patient, pale, dehydrated, with asymmetrical distended abdomen. Palpation detected a painful, profound and imprecise delineated hardness in the right iliac fossa and right flank, with pain and dullness on percussion. Intermittent succussion sounds were present on the entire abdominal area. Blood laboratory test showed slightly elevated urea (98mg/dl,) and creatinine (1.3mg/dl), medium degree anemia (Hgb=10.5g/dl) but with highly elevated WBC of 28000/mmc. Abdominal radiography documented small hydro-aeric levels on small bowel in the middle and right hemi-abdomen while fast abdominal ultrasound revealed distended small intestine in right iliac fossa with no other obvious pathologic evidence.

The patient was admitted in the surgical service with the diagnostic of sub-occlusive syndrome and clinical suspicion of colic stenotic infected tumor and secondary anemia. After admission the patient was treated with antibiotics, non-steroidal anti-inflammatory and analgesics. Partial remission of the symptoms allowed us further tests for a more accurate diagnostic. In order to investigate the upper digestive pole we performed a superior digestive endoscopy that showed esophageal lesions of leukoplakia and a plane elevated tumor of 1/10/ mm situated at 28 centimeters of the dental arcade on the right wall of the esophagus (Fig. 1). Biopsy samples of the tumor were taken and subjected to histopathologic exam.



**Fig. 1. Esophageal endoscopy with plain elevated tumor (red arrow) and leukoplakia (green arrow)**

Concurrently the patient was subjected to colon preparation for inferior digestive endoscopy. However the preparation with 4L PEG (polyethylene-glycol) solution could not be carried out due to intense pain, accentuated abdominal distension and vomiting after first

liter ingestion. Preparation using enemas was performed but the poor quality of bowel clearance allowed just a sigmoidoscopy with normal aspect on examination. We also scheduled an abdominal and thoracic computer tomography but the exam could not be performed because the patient developed intestinal occlusion at 48 hours after admission, documented with another abdominal X-ray (Fig. 2), thus requiring emergency surgery.



**Fig. 2. Abdominal radiography showing hydro-aeric levels on small bowel in the middle and right hemiabdomen**

We started with a median laparotomy and discovered a tumoral mass that included the hepatic colonic flexure, antero-lateral abdominal wall, visceral hepatic plane, with apparent extension to retroperitoneal structures that could not be evaluated at that point. The gallbladder was adherent to the tumor but did not seem invaded, so it was dissected and separated from the tumor. The caecum was much distended with thickened wall. We started an en-block resection of the tumor with partial anterior abdominal wall resection. The retroperitoneal dissection was very difficult due to tumor situation very next to the duodenum and inferior vena cava, but possible without macroscopic residual tumor. When the tumor was dissected from the liver with small parenchyma sacrifice, a hepatic abscess was opened and non-smelling, creamy, yellow puss was evacuated (bacteriology: no germs developed after puss culture). After tumor mobilization we decided and performed right

colectomy with right terminal temporary ileostomy. Primary anastomosis was considered unsafe due to general patient condition, emergency settings of the intervention and the presence of the pus in the subhepatic area.

Macroscopic pathologic examination surprisingly showed extra-mucosal colonic tumor with stenosis (Fig. 3) but without macroscopic communication with the lumen (Fig. 4). The microscopy revealed conjunctive malignant suppurated tumor with rich eosinophil infiltration. Almost at the same time the histopathologic result from esophageal biopsies showed microscopic structure of squamous esophageal carcinoma G3.

Postoperative recovery was uneventful and based on the results the patient was subjected for oncologic treatment consisting in adjuvant/neoadjuvant poli-chemotherapy.

Four months after initial surgery the patient was readmitted for reestablishment of digestive circuit. Superior digestive endoscopy performed on this occasion revealed elevated-ulcerated tumor with reduced diameter of 1 cm with cicatrice aspect. Endoscopic narrow band imaging (NBI) mode confirmed the presence of the tumor and endoscopic ultrasonography (EUS) revealed hypoechoic tumor of 1cm in diameter and 3,2mm thickness, located strictly in the esophageal mucosa, without submucosal extension.

There were no signs of secondary tumors on abdominal and thorax computed tomography while abdominal ultrasonography showed a 4cm diameter cyst next to the gallbladder that proved

to be a seroma on surgical intervention. No signs of abdominal recurrence were encountered during laparotomy. After we performed the reestablishment of digestive circuit by ileo-colonic anastomosis, the patient was directed to a center of esophageal endoscopic surgery for endoscopic mucosal resection (EMR) with tumor removal.



**Fig. 3. Right hemicolectomy specimen with a stenotic tumor on the hepatic angle (red arrow)**



**Fig. 4. Right hemicolectomy specimen (after lumen opening) showing the absence of mucosal involvement in the tumoral process**

## Discussions

Esophageal cancer can be synchronous to other malignant primary tumors. The frequency of this association is increasing. The diagnosis of an esophageal cancer associated to another malignant neoplasm is usually realized by medical imaging methods that are included in the screening programs for malignant tumors.

The frequency of squamous esophageal cancer associated to another primary malignant tumor in our service (Second Surgical Clinic of ECH Craiova) is about 2.6%-3 cases from 113 admitted cases. The first two cases-squamous esophageal cancer synchronous to right colon carcinoma and squamous esophageal cancer synchronic with renal carcinoma-have been the subject of previous reported studies [1,2].

In this particular case the abdominal symptomatology was dominant while dysphagia was discreet and intermittent. However the strictness of the consultant and the availability of superior digestive endoscopy in our service made possible the identification of early stage esophageal neoplasm. Sudden evolution to intestinal occlusion made the complete imagistic exploration impossible. The onset of intestinal occlusion reclaimed emergency surgery that confirmed the association with another abdominal tumor.

Essential for esophageal cancer associated to another primary cancer is preoperative diagnosis of this association for establishing a correct therapeutic plan. Medical imaging has a very important role in such cases for a correct and complete diagnosis.

Imagistic exploration for esophageal carcinoma should include eso-gastric radiography with barium ingestion, superior digestive endoscopy with biopsy, esophageal endoscopic ultrasonography. Endoscopic ultrasonography (EUS) evaluates local longitudinal and transversal extension in the esophageal layers as well as the status of the periesophageal lymph nodes. Also EUS fine needle aspiration in those nodes is possible, allowing a more accurate staging. EUS is considered superior to CT for lymph nodes metastases diagnosis, as it permits fine needle aspiration from these lymphnodes [10]. Cervical, thorax and abdominal CT are very useful in the evaluation of the relations of tumoral esophagus with adjacent structures but also for distant metastases detection and characterization [10].

Also, relatively new imaging methods like PET-CT or FDG-PET (positron emission tomography with 18-fluoro-deoxy-glucose) might be required for a correct and complete diagnosis of esophageal cancer.

PET-CT is mainly used for accurate staging of the disease, evaluating the efficiency of the therapy, and for early diagnosis of the recurrences [11], but the use is limited due to the high costs of the method.

The imagistic exploration of the esophagus must involve contrast radiography, endoscopy, EUS with lymph nodes puncture, CT, and, when possible, FDG-PET.

Every one of these techniques does not exclude the others, but the techniques are complementary for a complete diagnosis (local and distant extension) [12].

All those explorative imagistic methods have an essential role and can contribute to the diagnosis of other malignant processes with different extra-esophageal localizations.

Thoracic, abdominal and cervical CT can observe malignant synchronous tumors located to digestive tract, lungs, kidneys, ENT area, etc.

Superior digestive endoscopy can diagnose a gastric cancer when the esophageal tumor can be passed. In most cases colonoscopy is indicated in order to evaluate possible esophageal reconstructive means, since it can diagnose a synchronous colon cancer or other benign pathology.

Due to anatomy and physiology of the esophagus, the therapeutic strategy in esophageal cancers always involves a high number of specialties-surgery, medical oncology, radiotherapy, gastroenterology, radiology, pneumology, anesthesiology and in some cases cardiology, ENT, urology, etc.

Esophageal surgery, as central therapeutic mean in esophageal cancer treatment, is a high risk surgery, very demanding and stressful, especially for the patient but also for the surgeon.

Detecting an esophageal cancer synchronous to another extra-esophageal cancer is very important for establishing a correct multidisciplinary approach. In this respect 18fdg-PET-CT is superior to any other imaging method to detect synchronous lesions [13].

However, due to the rarity of those cases a standard therapeutic approach could not be elaborated yet [13].

## Conclusions

Esophageal cancer can be concomitant with other primary extra-esophageal malignant tumor (ENT area, digestive tract, renal). Squamous esophageal cancer developed synchronous with other malignant primary tumor has a reported frequency between 2.73% and 11% of cases. Association between a squamous esophageal cancer and a conjunctive pericolonic malignant tumor represents a singular, unusual case. The clinical presentation of this case was dominated by the intestinal occlusion signs, as a complication of the pericolonic conjunctive malignant tumor. It would be ideal that the diagnosis of association between an esophageal cancer and an extra-esophageal cancer to be established before surgery, because these cases involve complex therapeutic problems concerning surgical removal and oncologic treatment. The imaging protocol for the diagnosis of an esophageal cancer must involve all known methods (including here standard methods but also EUS with fine needle aspiration and PET-CT), to establish the extension of the esophageal cancer and a possible association with another malignant extra-esophageal tumor. One method does not exclude another, every one of them bringing important information for the therapeutic protocol, thus being complementary methods.

## Acknowledgements

\*Vilcea Ionică Daniel has a significant contribution to the manuscript and thus shares first authorship.

## References

1. Vilcea ID, Vasile I, Tomescu P, et al. Synchronous squamous esophageal carcinoma and urothelial renal cancer, *Chirurgia*; 2010; 105:843-847
2. Mirea CS, Vasile MI, Vilcea ID, et al. Squamous esophageal carcinoma and mucinous adenocarcinoma of the colon-an unusual association, *Rom J Morphol Embryol*; 2016; 57 (1): 267-271.
3. Chung SC, Hashibe M, Scelo G, et al. Risk of second primary cancer among esophageal cancer patients: a pooled analysis of 13 cancer registries, *Cancer Epidemiol Biomarkers Prev*; 2008; 17(6):1543-1549.
4. Kagei K, Hosokawa M, Shirato H, et al. Efficacy of intense screening and treatment for synchronous second primary cancer in patients with esophageal cancer, *Jpn J ClinOncol*. 2002; 32 (4):120-7. Comment in: *Jpn J ClinOncol*; 2002; 32 (4):118-119.
5. Matsubara T, Yamada K, Nakagawa A. Risk of second primary malignancy after esophagectomy for squamous cell carcinoma of the thoracic esophagus, *J ClinOncol*; 2003; 21(23):4336-4341.
6. Poon RT, Law SY, Chu KM, et al. Multiple primary cancers in esophageal squamous cell carcinoma: incidence and implications. *Ann Thorac Surg*; 1998; 65(6):1529-1534.
7. van Westreenen HL, Westertep M, Jager PL, et al. Synchronous primary neoplasms detected on 18-FDG PET in staging of patients with esophageal cancer, *J Nucl Med*; 2005;46(8): 1321-135.
8. Synchronous Cancer, *Segen's Medical Dictionary*, 2011. Farlex, Inc. <http://medical-dictionary.thefreedictionary.com/Synchronous+Cancer>
9. Tomita M, Sawai T, Nakamura A, et al. Esophageal carcinomas with synchronous and metachronous primary malignant carcinomas in other organs, *Acta Med. Nagasaki*; 1994; 39: 149-150.
10. Vasile MI, Vilcea ID, Mirea CS, et al. The contribution of imaging explorations in early diagnosis, staging and prognosis assessment of the esophageal cancer. *Curr Health Sci J*; 2015, 41 (suppl. 6): 9-13.
11. Vera P, Dubray B, Palie O, et al. Monitoring tumour response during chemoradiotherapy: a parametric method using FDG-PET/CT images in patients with oesophageal cancer. *EJNMMI Research*; 2014; 4(1):12.
12. Shridhar R, Almhanna K, Meredith K L, et al. Radiation therapy and Esophageal Cancer. *Cancer Control*; 2013, 20(2): 97-110.
13. Chen SH, Chan SC, Chaoy K, Yen TC, et al. Detection of Synchronous Cancer by FDG-PET/CT during Primary Staging for Esophageal Squamous Cell Carcinoma in Taiwan, *PLOS One*; 2013, 8 (11): e 82812.