CLINICAL CASE

**SIEWERT I TYPE ESOGASTRIC JUNCTION ADENOCARCINOMA -
COMPLETE THERAPEUTIC RESPONSE AFTER NEOADJUVANT
TREATMENT**

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Abstract

The adenocarcinoma of the esogastric junction is a neoplasia with growing frequency in both US and Europe. We present a case study of a 43-year-old patient, smoker, that presented for the installation of dysphagia for both solids and liquids, weight loss (10 kg / 6 months), marked asthenia. Upper digestive endoscopy: starting from 32 cm from the dental arch, stenosing, budding tumoral formation, stretching up to the esogastric junction. Biopsies confirm the presence of moderately differentiated adenocarcinoma. Endoscopically, a metallic expandable esophageal stent is installed. PET-CT: important irregular parietal thickening with increased activity in the lower level of the thoracic esophagus, extending on the lesser curvature of the stomach; increased para esophageal lymph nodes (17 / 21cm) without increased metabolic activity, 2 node images with slightly increased activity. Neoadjuvant treatment is started using induction chemotherapy in order to trigger the sensitivity of the tumor, followed by targeted radiotherapy. The patient's condition is reassessed 6 weeks after neoadjuvant chemo radiotherapy and then surgery is practiced - subtotal esophagectomy with resection of the gastric lesser curvature by McKeown triple approach, 3 field lymphadenectomy, AKIYAMA type gastric pull-up, pyloroplasty, feeding jejunostomy. The histopathology of the resected specimen shows complete pathological response. The postoperative evolution is favorable, despite the fact that on the 5th postoperative day a respiratory complication occurs, bronchopneumonia, which is resolved under antibiotic treatment. Six months postoperatively, the patient shows no sign of loco-regional or distant relapse.

Keywords: Siewert I, McKeown triple approach, neoadjuvant chemo radiotherapy

Introduction

Esogastric junction adenocarcinoma is a neoplasia with growing frequency in both the US and Europe, being more common in men aged over 60 years with gastro-esophageal reflux of variable duration.

The major risk factors are represented by gastroesophageal reflux disease and Barrett's esophagus, chronic inflammation of the lining representing occurrence of aberrant cell multiplication.

Screening programs manage to early diagnose only 20% of the newly detected cases.

Their detection, most often in locally advanced stages, determines their poor prognosis and raise the issue of using neoadjuvant therapy in the course of treatment [1].

The treatment of esogastric junction adenocarcinoma may be applied using two schemes: surgery followed by adjuvant RCT or neoadjuvant RCT followed by planned esogastrectomy [2,7,8].

Clinical and imaging reassessment of neoadjuvant RCT may be classified, according to the response, in responders and non-responders. Responders may in their turn be divided into patients with complete response to treatment and patients with partial response.

Cases that respond to neoadjuvant RCT may benefit of planned eso-gastrectomy, those with stationary disease that present resectability criteria may undergo surgery, and patients with progressive disease will continue palliative RCT protocol [3,4].

The variant of surgical approach for the Siewert I type esogastric junction adenocarcinoma should be chosen depending on the particular case. The types of approaches that we can practice are: thoraco - abdominal (Ivor-Lewis), abdominal-cervical (Sloan - Orringer), thoraco-abdomino-cervical (McKeown) [6].

Materials and methods

We present the case of a 43-year-old patient, smoker, coming from urban environment, diagnosed with GERD for which he received treatment with PPIs and prokinetics, which came to the hospital for progressive installment of dysphagia for solids, followed by dysphagia for liquids, important weight loss (10 kg / 6 months), marked physical fatigue, during the last 6 months.

Clinical examination revealed skin pallor, persistent skin fold, no superficial palpable lymph nodes, without pathological palpable abdominal mass.

Blood tests: leukocytosis with neutrophilia, hyperuricemia, hyperproteinemia.

Barium swallow reveals a malignant stenosis through a tumor budding outstretched on the lower half of the esophagus that also involves the stomach body.

Upper GI tract endoscopy confirmed the presence from about 32 cm from the dental arch of a stenotic, budding tumoral formation that is passed with difficulty and stretches to the esogastric junction which it invades (Figures 1,2). Harvested biopsies reveal the presence of a moderately differentiated adenocarcinoma of intestinal type (Figure 3).

Figure 1- Upper GI tract endoscopy aspect

Figure 2- Upper gastrointestinal tract endoscopy – U turn

Figure 3 - Histopathological aspect

Figures 5 (a,b,c) - PET-CT show high metabolic activity

The patient is presented with the variants of dysphagia palliation and maintaining a proper way of feeding (gastrostomy, jejunostomy or esophageal stent) The patient opts for mounting an expandable esophageal stent.

Following the oncologist's advice, a PET-CT is performed, that reveals an important irregular parietal thickening with increased activity in the lower level of the thoracic esophagus, extending on the lesser gastric curvature, para esophageal adenopathy 17 / 21cm, without increased metabolic activity, 2 ganglionic images with slightly high activity. The neoadjuvant treatment is started with induction chemotherapy (Capecitabine 1300 mg / sqm Oxiplatine 85 mg / m²), followed by targeted radiotherapy with moderate intensity VMAT version, TD= 50Gy / 25 fractions, the targeted regions being: esophagus, para esophageal lymph nodes, supraclavicular bilateral, mediastinal, lesser gastric curvature (Figure 5).

Six weeks after neoadjuvant radio chemotherapy the patient's condition is reassessed and the second stage of the multimodal treatment is applied: surgery.

Blood tests: normal, except: GGT = 86.7 U / L, serum iron = 67.9 U / L, HCT = 39%.

Figure 6 (a,b) - Barium swallow aspect

Figures 7 (a,b,c) - Upper GI tract endoscopy showing the migrated stent and the inflamed, bleeding mucosa

Barium swallow: esophageal stent currently permeable, starting at the lower 1/2 of the esophagus, reaching the subcardial stomach (Figure 6).

Upper GI tract endoscopy: At 25 cm from the dental arch, superficially inflamed, bleeding mucosa, without tumoral signs on 5-6 cm (Figure 7).

Subsequently, the endoscope is passed through a self-expandable metal stent that migrated a few cm under the cardia. Stomach with hyperemic mucosa and biliary excretion. Normal pylorus, DI and DII.

Figure 8 (a,b) - Post neoadjuvant treatment CT

CT: esogastric formation without changes in structure and size compared to previous examination, with dilated esocardial lumen through expandable esophageal stent and the

resumption of esogastric transit. Left para esophageal lymphadenopathy. Lateral sub pleural micro nodule (0.33 mm) - needs imaging monitoring. No other changes with secondary character in thoraco-abdominal examined sections. No visible esogastric fistulae or collections (Figure 8).

Following a proper preoperative preparation, the surgical intervention takes place under general anesthesia with oro-tracheal selective intubation - Carlens probe, and we practice subtotal esophagectomy by McKeown triple approach (thoracic, abdominal and cervical), with resection of the lesser gastric curvature, Akiyama type GASTRIC PULL UP with T-L eso-gastrostomy, STARR-JUDD extra mucous pyloroplasty and feeding jejunostomy.

The surgery began with the thoracic approach using a right posterolateral thoracotomy through the fifth intercostal space. The dissection and isolation of the esophagus using a tractor line is done, followed by the ligation of the azygos vein putter. The particularity of this step was represented by the intrathoracic section of the esophagus due to the presence of the intraluminal stent (Figure 9).

Figure 9 - Esophageal intrathoracic isolation

Then the abdominal part took place by performing a xipho-supraumbilical incision; then the esophagus was abdominalized and the metallic stent was extracted (Figure 10).

It continued with resecting the lesser gastric curvature and gastric graft preparation, with the strengthening of the mechanical suture using a continuous thread (Figure 11,12)

Then an extra mucous pyloroplasty is performed (Figure 13).

The cervical part of the surgery follows, with a left lateral incision and the dissection and

isolation of the restant esophagus that is then resected (Figure 14).

The previously prepared gastric graft is ascended through the esophageal bed and a T-L gastro-esophageal anastomosis is done using continuous silk 3.0 suture.

Figure 10 - Stent extraction

Figure 11 - Lesser gastric curvature resection

Figure 12 - Gastric graft aspect

Figure 13- Pyloroplasty

Figure 14 - Cervical eso-gastric anastomosis

Postoperative histopathologic examination showed the absence of tumor cells on the esogastrectomy specimen (Figure 15,16).

Figures 15 - Histopathological examination

Figures 16 - Histopathological examination

Postoperative evolution is favorable, despite the fact that on the 5th postoperative day a respiratory complication occurs, a bronchopneumonia process, which is resolved using specific antibiotic therapy.

At 6 months postoperatively, the patient shows no sign of loco-regional relapse or distant metastases.

Discusions and conclusions

In the case of locally advanced tumors, the therapeutic attitude involves the use of neoadjuvant chemo radiotherapy for down staging the tumor, thus improving the rate of resectability, decreasing tumor recurrences and improving long term survival, followed by scheduled surgery chosen depending on the response to the neoadjuvant treatment, with radical intent for those with complete pathological response and palliative in patients with stationary disease. Neoadjuvant chemo

radiation may become the standard attitude for Siewert I type esogastric tumors [2, 4, 5, 8].

The following types of approaches may be applied for Siewert I esogastric junction adenocarcinoma: thoraco - abdominal (Ivor-Lewis), abdominal - cervical (Sloan - Orringer), thoraco - abdomino - cervical (McKeown) [6].

In this case we chose the triple approach because of the inflamed esophageal mucosa caused by RT and the permanent esogastric reflux in supine position acquired by subcardial stent migration, which could have compromised a mediastinal anastomosis.

Assessment of the pathological response to neoadjuvant chemo radiotherapy can be assessed by histopathological examination of the resection specimen. In this case, the computed tomography performed after the neoadjuvant treatment showed that the disease is stationary.

Current diagnostic resources: radiological examinations (barium swallow), upper gastrointestinal endoscopy (EDS), EUS (EUS), computed tomography (CT) cannot differentiate between tumor cells and inflammatory reactions, swelling and lesions of the scar tissue post RCT [10].

PET CT can show decreased metabolic activity in the tumoral tissue after irradiation, but certainty is given by the HP exam.

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