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Case report

## OPEN ESOPHAGECTOMY AS A TREATMENT OF CHOICE FOR ESOPHAGEAL CANCER AND A SUCCESSFUL OUTCOME AT THE UNIVERSITY CLINIC IN SKOPJE, NORTH MACEDONIA: A CASE REPORT

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### Abstract

Esophageal cancer is one of the least studied cancers and has high mortality rates, mainly because it is diagnosed at rather late stage. It requires urgent attention and in patients where surgery is feasible, it is immediately performed. There is a considerable variation in terms of the surgical approach in different countries, but open esophagectomy is a treatment of choice.

This study describes a case of esophageal squamous cell carcinoma that was successfully treated with open esophagectomy and therefore provides information about the present state of esophageal cancer surgery at the University Clinic in Skopje, North Macedonia. The patient underwent clinical examination after which she was admitted to our department for surgical treatment. Esophagography and CT imaging were done pre- and postoperatively and no complications were noted after surgery. The patient was discharged and a written informed consent was obtained for publication of this case and any accompanying images.

**Keywords:** esophageal cancer, squamous cell carcinoma, surgical treatment, open esophagectomy

### Introduction

Currently, esophageal cancer is ranked as the seventh most common cancer globally and the sixth most frequent cause of cancer death worldwide<sup>[1-5]</sup>. The last report for esophageal cancer in North Macedonia is by the GLOBOCAN (Global Cancer Observatory) in the year 2020, and shows an incidence of 41 new cases and a number of 38 deaths. In terms of treatment, for those patients who are eligible for surgery, esophagectomy is of

crucial importance [5,11]. We herein report a case of a 54-year-old patient with the most common histological subtype of esophageal cancer - squamous cell carcinoma (SCC), which was successfully managed with surgical treatment at our University Clinic. Open Ivor Lewis (separate laparotomy and right thoracotomy) esophagectomy was performed; the patient was postoperatively evaluated and no complications were noted.

### Case report

A 54-year-old woman presented with a nine-month history of epigastric pain, vomiting and chest pain after meal, which resulted in anorexia and sarcopenia on examination. The patient reported smoking for years. Upper gastrointestinal endoscopy was done and biopsy from the area demonstrated a moderately differentiated squamous cell carcinoma.

The patient was admitted to our department for surgical treatment of esophageal cancer. Barium swallow demonstrated stricture in the middle third of the esophagus due to the cancer (Figure 1).



Fig. 1. Barium esophagography findings preoperatively

In order to help stage the disease and determine if the patient was suitable for surgery, CT scan was used, which demonstrated asymmetric wall thickening of the esophagus and obstruction of the lumen. There was no significant loss of the fat plane between the mass and the descending thoracic aorta, which indicated the absence of aortic invasion (Figures 2 and 3).

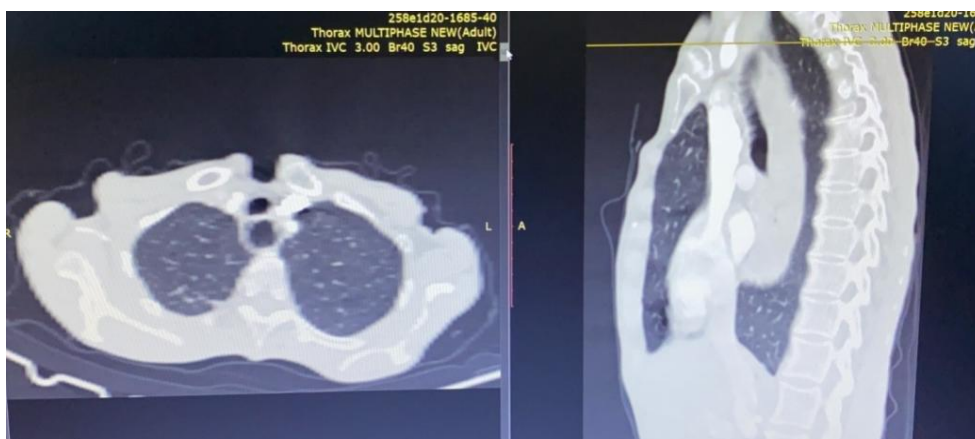
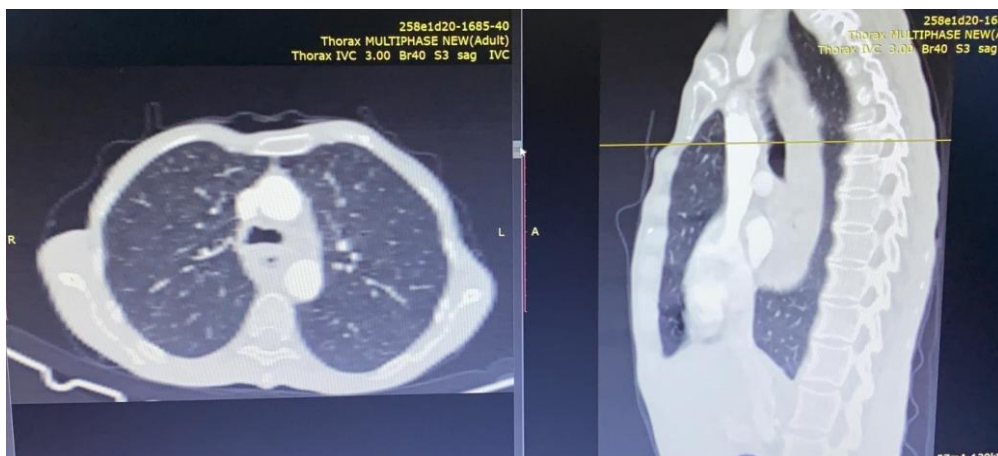


Fig. 2. CT scan preoperatively



**Fig. 3.** CT scan preoperatively

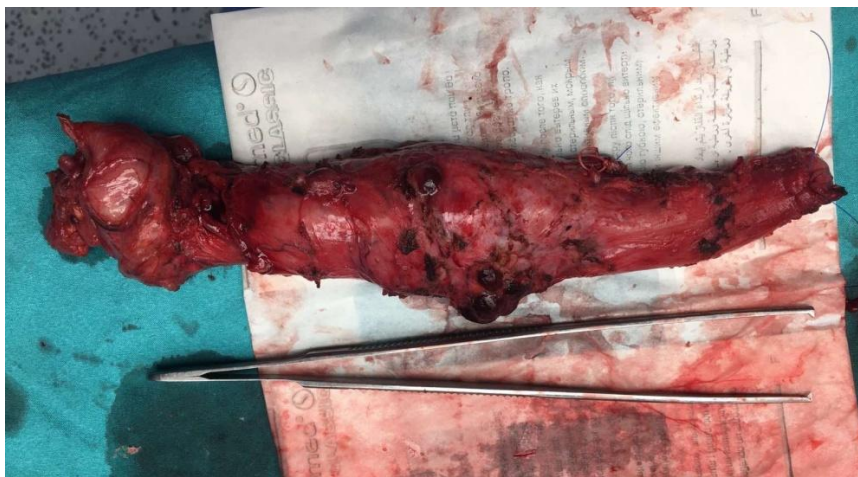
The rest of her examination and laboratory tests were within normal range.

According to the findings, the patient was selected for surgical resection of the esophagus.

**Surgical technique:** In the first stage, the patient was initially placed in the left lateral decubitus and right posterolateral thoracotomy was performed through the 6<sup>th</sup> intercostal space with division of *latissimus dorsi* and preservation of *serratus anterior* muscle. After tracheal tube clamping, collapse of the right lung was subsequently provided, and the deflated lung was retracted anteriorly for exposure of the posterior mediastinum. Azygos vein ligation was performed with GIA stapler. The esophagus was first mobilized with right angle at the distal edge of the malignant lesion, at the level of the hiatus and then further mobilized and dissected into the thoracic inlet, to the level of the superior thoracic aperture. A chest tube was placed and the thoracotomy was closed in layers with absorbable suture.

In the abdominal phase, medial laparotomy was performed, which allowed abdominal exploration and visualization of the anatomy, especially of the stomach vascular structures. The greater curvature of the stomach was skeletonized and the gastroepiploic arcade was preserved. The gastrocolic and gastrosplenic ligament were incised and divided with an energy device - LigaSure, as well as the short gastric vessels. Next, Kocherization of the duodenum was performed in order to obtain the length of the gastric conduit. The left gastric (coronary) vein and the left gastric artery were identified and ligated. After the lesser curvature of the stomach was mobilized, a part of it was removed, all the way to the fundus of the stomach, using the endo linear GIA stapler. Subsequently, the conduit which would be used for reconstruction after removing the esophagus was definitely formed.

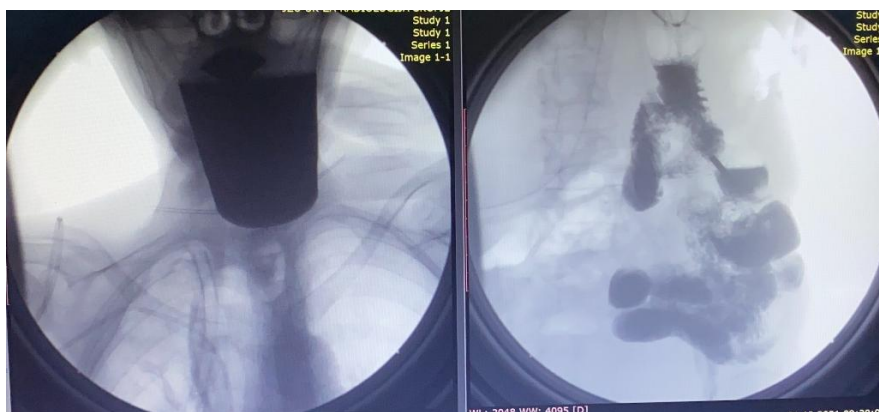
The conduit, through hiatus of the diaphragm, then the thoracic cavity and finally through the superior thoracic aperture, was brought into the neck, where cervical anastomosis was completed in two layers of 3-0 absorbable Monosyn sutures. A nasogastric tube was placed through the anastomosis and positioned in the stomach conduit. Pyloroplasty was performed, using the Heineke-Mikulicz technique. After this procedure, a drain tube was placed in the subhepatic space on the left. Hemostasis was assured and the last step was closure.



**Fig. 4.** Macroscopic findings of the resected esophagus

Gastrografin was used as a contrast medium postoperatively to search for leakage if any.

There were no complications noted and after standard check-up, the patient was discharged from hospital 11 days after surgery.



**Fig. 5.** Gastrografin swallow on day 7 postoperatively showed absence of leakage and stenosis

### Discussion

Although the incidence of esophageal cancer is currently low in North Macedonia, it is important to recognize the disease, evaluate it correctly and treat it on time. The first esophagectomy was performed in 1868 in Germany, by Adolf Kussmaul, and during the following years, more and more surgical procedures were developed by skilled surgeons across the world<sup>[7,8,12]</sup>. The primary treatment of esophageal cancer today remains surgery, and the technique used depends on the patient presentation and the surgeon's choice<sup>[1,3,4,6,7]</sup>. In some medical centers, including our university hospital, since the hybrid procedure has been introduced not long ago and other minimally invasive procedures have not been routinely applied, open esophagectomy is still performed<sup>[1,3,10,12]</sup>. In order to evaluate the outcome of minimal invasive esophagectomy versus open esophagectomy, more trials comparing the two are necessary<sup>[1,2,5,10]</sup>.

### Conclusion

Our presented case of open esophagectomy for squamous cell carcinoma treatment supported our conclusion that although invasive, this procedure can still be a surgical

technique of choice for many cases and it can be done safely and often with no complications postoperatively.

### Consent

A written informed consent was obtained from the patient for publication of this case report and for the accompanying images.

*Conflict of interest statement.* None declared.

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