Chirurgia (Bucur). 2018;113(2):202-209
http://dx.doi.org/10.21614/chirurgia.113.2.202

Robotic Approach in Benign and Malignant Esophageal Tumors; A Preliminary Seven Case Series

Victor Tomulescu[1,2], Codrut Stanescu[2], Cristian Blajut[2], Loredana Barbulescu[2], Gabriela Droc[3], Vlad Herlea[4], Irinel Popescu[2]
[1]Ponderas Academic Hospital, Bucharest, Romania
[2]Center for General Surgery and Liver Transplantation "Dan Setlacec", Fundeni Clinical Institute, Bucharest, Romania
[3]Centre of Anaesthesiology and Intensive Care, Fundeni Clinical Institute, Bucharest, Romania
[4]Department of Pathology, Fundeni Clinical Institute, Bucharest, Romania

Abstract
Esophageal surgery has been recognized as very challenging for surgeons and risky for patients. Thoracoscopic approach have proved its benefit in esophageal surgery but has some drawbacks as tremor and limited degrees of freedom, contra-intuitive movements and fulcrum effect of the surgical tools. Robotic technology has been developed with the intent to overcome these limitations of the standard laparoscopy or thoracoscopy. These benefits of robotic procedure are most advantageous when operating in remote areas difficult to reach as in esophageal surgery.
Aim: The aim of this paper is to present our small experience related with robotic approach in benign and malignant esophageal tumors and critically revise the evidence available about the use of the robotic technology for the treatment of these pathology.
Methods: From January 2008 to September 2016 robotic surgery interventions related with benign or malignant esophageal tumors were performed in "Dan Setlacec" Center for General Surgery and Liver Transplantation of Fundeni Clinical Institute in seven patients. This consisted of dissection of the entire esophagus as part of an abdomino-thoracic-cervical procedure for esophageal cancer in 3 patients and the extirpation of an esophageal leiomyoma in 3 cases and a foregut esophageal cyst in one case.
Results: All procedures except one were completed entirely using the da Vinci robotic system. The exception was the first case - a 3 cm leiomyoma of the inferior esophagus with ulceration of the superjacent esophageal mucosa. Pathology reports revealed three esophageal leiomyoma, one foregut cyst and three squamous cell carcinomas with free of tumor resection margins. The mean number of retrieved mediastinal nodes was 24 (22 –27). The postoperative course was uneventful in four cases, in the other three a esophageal fistula occurred in the converted leiomyoma case (closed in the 14th postoperative day), a prolonged drainage in one esophageal cancer case and a temporary right recurrent nerve palsy in an other one. One patient with esophageal cancer and all patients with benign lesions are alive with no signs of recurrence and no symptomatology.
Conclusion: Our experience is limited and we cannot conclude for the long term benefits of robotic surgery for esophageal tumors. In our experience the early outcomes were better then using classic open approach, but similar with the cases performed by thoracoscopic approach. We have noticed significant advantages of robotic surgery in relation of lymph node retrieval, leiomyoma dissection safe from esophageal mucosa and suturing. Ergonomics for the surgeon was incomparable better then with the thoracoscopic approach.
Key words: robotic surgery, benign and malignant esophageal tumors, esophageal carcinoma, esophageal leiomyoma, esophageal inclusiom cyst