

ESOPHAGEAL ENDOPROSTHESIS BY LAPAROGASTROSCOPY WITH TRANSTUMORAL DRILLING – PALLIATIVE THERAPEUTIC OPTION IN ADVANCED GASTROESOPHAGEAL JUNCTION ADENOCARCINOMA

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Abstract: The early diagnosis of the esophageal-gastric junction adenocarcinoma, both in our country and in many parts of the world is not possible yet, unless “accidentally”. The incidence of the disease is increasing, most frequently the lesion is diagnosed in advanced stages, thus, few patients can benefit from treatment with radical intent. The main treatment in these cases is often palliative; currently, the use of the transtumoral esophageal prosthesis assembled endoscopically represents the method of choice, but due to the technical impossibility to cross the tumoral stenosis with the endoscope or due to the endoscopist’s concerns in the case of the “sensitive” areas (poles of the esophagus), there also are failures of prosthesis. In this context, we aim at analysing the process of endoscopic endoprosthesis by transtumoral drilling as a solution to the “reserves” or failures of the endoscopic prosthesis as a technical, biological and social alternative to the disabling gastrostomy in the case of the patients with neoplastic eso-gastric stenosis. Although the number of patients diagnosed with esophageal-gastric junction adenocarcinoma who received laparoscopic arthroplasty by transtumoral drilling is limited, this original procedure brought us satisfaction whenever we turned to this approach, both in the above mentioned pathology and in other oesophageal diseases.

Cuvinte cheie:
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gastroscopică prin
foraj transtumoral

Rezumat: Diagnosticarea precoce a adenocarcinomului de joncțiune eso-gastrică, atât în țara noastră cât și în multe părți ale lumii nu este posibilă, deocamdată, decât în mod „accidental”. Incidența bolii este în continuă creștere, cel mai frecvent leziunea fiind diagnosticată în faze avansate, puțini pacienți putând beneficia de tratamentul cu intenție de radicalitate. Tratamentul principal în aceste situații este frecvent paliativ, în prezent, utilizarea protezelor esofagiene transtumorale montate pe cale endoscopică fiind metoda de elecție, însă din cauza imposibilității tehnice de traversare a stenozei tumorale cu endoscopul sau a reținerilor endoscopistului în cazul zonelor „delicate” (polii esofagului) există și eșecuri ale protezării. În acest context, ne propunem să analizăm procedeu de endoprotezare pe cale laparogastroscopică prin foraj transtumoral ca soluție pentru “rezervele” sau eșecurile protezării endoscopice și ca alternativă tehnică, biologică și socială la invalidanta gastrostomă în cazul bolnavilor cu stenoze neoplazice eso-gatrice depășite oncologic. Deși numărul bolnavilor diagnosticați cu adenocarcinom al joncțiunii eso-gatrice ce au beneficiat de endoprotezare laparogastroscopică prin foraj transtumoral este limitat, acest procedeu original ne-a dat satisfacție ori de câte ori am apelat la acest abord, atât în patologia anterior menționată, cât și în alte afecțiuni esofagiene.

INTRODUCTION

Until 1990, gastric cancer was the most spread neoplastic disease at international level, recording ever since a significant decrease in its incidence in the Western countries, nowadays occupying the second place after the lung cancer.(1,8) In contrast with the decreased incidence of gastric cancer, there was a change in terms of the location of gastric adenocarcinoma, this one “migrating” from distally to proximally, upper pole gastric adenocarcinoma incidence increasing alarmingly.(1,2,3,7) Also, it has been reported an alarming increase in the incidence of the esophageal adenocarcinoma and esophageal-gastric junction adenocarcinoma, in the detriment of the squamous cell carcinoma.(6,7,8,9) If, before the 70s, the incidence of adenocarcinoma was less than 5% of the esophageal cancers, today, in the West, it represents more than 50% of esophageal cancers in white male subjects.(4)

Due to the deep topographic location at the thoraco-abdominal border and due to the oligosymptomatic onset, the diagnosis of the esogastric adenocarcinoma is most frequently

put in advanced stages, when the neoplastic process obstructs the esophageal-gastric junction causing dysphagia, stages in which the radical therapeutic intention is rather unfeasible.(2)

The main treatment in these cases is palliation, most commonly, aiming at ensuring food capacity in a natural manner and providing aggressive radio-chemotherapy.(11) Currently, the use of transtumoral esophageal prosthesis assembled endoscopically represents a progress and a modern method in giving the patient the possibility to eat naturally, as well as a good social insertion, but because of the technical impossibility to cross the tumoral stenosis with the endoscope, or due to the endoscopist’s “holdbacks” regarding the sensitive areas (poles of the oesophagus), there are also failures of prosthesis, (on average 20%).(10,11)

PURPOSE

We aim at analysing the process of endoscopic endoprosthesis by transtumoral drilling as a solution to the “reserves” or failures of the endoscopic prosthesis and as a

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technical, biological and social alternative to the disabling gastrostomy in the case of the patients with neoplastic esogastric stenosis

METHODS

Esophageal endoprosthesis by laparogastroscopy with transtumoral drilling is an original miniinvasive method of esophageal prosthesis by laparoscopic approach, whose international recognition was materialized in 2005 within the sixth Congress of Gastric Cancer from Yokohama, when it was awarded the Great Prize.(12)

The process involves fitting a plastic or flexo-metallic esophageal prosthesis, self expandable by tracking it and not by pushing (as in endoscopic prosthesis). To achieve this, the laparoscopic approach of the upper abdominal wall is required, localising and nearing it to the abdominal wall, performing a minimum approach gastrostomy, through which we can insert the telescope transgastrically, thus localising and externalising the orogastric probe previously introduced. To this probe, a polytene tubes system is attached, with progressively increasing diameter having anchored the prosthesis at its distal end. The tubes system with the prosthesis attached to the distal end is afterwards tracked, modulating the traction force according to the encountered resistance, thus achieving the tumour stenosis dilation and finally, its crossing by the orally inserted prosthesis.(11,12)

Casistry enriches the expertise of the Surgical Clinic Emergency Hospital II of Sibiu materialized in a number of 19 patients with esophageal-gastric junction adenocarcinoma, treated in the last 5 years (2007-2011), all these patients being oncologically inoperable, in whom the utmost recommendation was gastrostomy, due to the impossibility of endoscopic prosthesis.

The age of patients ranged between 34 and 85 years old, with an average of 63 years old, gender distribution M/F being of approximately 4/1. Extreme denutrition with total dysphagia was present in 7 patients, the rest of them presenting selective dysphagia for solid and semisolid food and partly for liquids.

RESULTS

The results are encouraging. Thus, of the 19 patients, endoprosthesis by transtumoral drilling could be laparogastroscopically done in 17 patients, open surgical prosthetic fitting being required in two patients, the infiltrative tumour extremely hard requiring "finger fracture" for the catheterization of the cardia and of the esophageal lumen. In these cases, we used the hard plastic prosthesis, which after insertion, accomplished the hemostasis in the drilled area by strong compression at this level.

We did not have any fistulas or bleeding, but we did have migrating complications in 2 patients. In one case, prosthesis movement was facilitated by the endoscopic exploration and in the other one, the prosthesis migration in the stomach took place after the adjuvant oncologic therapy. The prosthesis has been extracted and replaced laparogastroscopically in both patients.

One patient received surgical treatment in two stages. Laparogastroscopic endoprosthesis was the first stage that allowed the patient to feed orally, denutrition compensation and facilitating the possibility of following an oncological treatment. Afterwards, it came the second stage represented by open surgery with curative visa.

The overall average length of stay (pre and postoperatively) ranged from 4 to 42 days, with an average of 10.47 days, the longest period of hospitalization was recorded in

an obese patient with type II diabetes, with adenocarcinoma of esogastric junction, Siewert type III, neoplastic peritoneal carcinomatosis and ascites, in whom it was impossible to assemble the prosthesis laparogastroscopically requiring minilaparotomy and tumoral drilling through "finger fracture". Postoperatively, this patient developed wound suppuration with slowly favourable evolution under conservative treatment.

The prolongation of hospitalization length in the patients in our study was due, on the one hand, to the need for complete preoperative investigations (biological, imaging exploration), given that most of the patients came from another county and the complementary examinations could not have been performed ambulatorily, and on the other hand, to the need for the compensation therapy, most of the patients requiring a preoperative preparation period between 1 and 7 days with an average of 3.05 days.

Dysphagia after prosthesis was absent in most of the patients. In 4 cases, we faced in the immediate postoperative period, the presence of transient dysphagia. Two patients showed obstruction of the prosthesis due to partially masticated food, which was solved by endoscopic exploration and lavage. In the other two patients, dysphagia improved after a few days of chewing education for a better trituration of the food.

Monitoring the patients after discharge was possible in very few cases, due to the fact that these ones came from outside Sibiu county, at a rate of 52.63%, most of them coming from long distances (Arad, Neamț, Galați Brăila, Buzău, București); they did not show at check ups, and due to their low socio-medical education.

In the patients who came to the scheduled examinations, we have registered improvement in the survival rate of between 5 months to 4 years, the most common cause of death in the monitored patients being the irreversible decompensation of liver and renal function due to the advanced neoplastic process, data obtained by us "unconventionally" in the context of the absence of the necroptic examination.

DISCUSSIONS

Currently, the method of choice mostly used in the palliative treatment of advanced esogastric adenocarcinoma is the endoscopic stenting. Unfortunately, the assembling of prostheses fails in about 20-30% of cases, as a result of the technical difficulties related to the endoscopic approach, viewing, placement, catheter failure (oesophageal poles are localisations to which endoscopists are reluctant, major strictures, filiform lumen) and propulsion (propulsion assembly by elastic pusher). Laparogastroscopic endoprosthesis is an option for the patients diagnosed with cancer inoperability in whom the endoscopic stenting attempts have failed, ensuring comfort and swallowing in contradiction to the disabling gastrostomy of necessity.(11)

The analysed process is a simple, fast and efficient process that allows the patient the normal oral feeding in early postoperative and the hospital contact is short. Laparogastroscopic assembly can be of cheap prosthesis, made up of cast plastic, silicone, latex, vinyl etc. We prefer the plastic prostheses, which are easier to be placed due to the fixed length and to the tendency of selflocking in the funnel, in addition to the fact that they are the only devices that actually drill the tumour, the flexible ones crossing the tumour stenosis and having the risk for being over-compressed by the very hard tumours. At the same time, plastic prostheses have the advantage of low cost (10-20 euros), applying compressive hemostatic transtumoral drilling for secondary hemorrhage and a reduced risk of endoluminal tumour invasion of the prosthesis. To limit the esophageal trauma and to avoid esophageal rupture,

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we prepare the prosthesis at the distal end in the shape of “the duck’s beak”. However, to prevent migration of the prosthesis assembled at the level of the eso-gastric junction, we used every time plastic or flexometallic prosthesis with larger proximal flange diameter.

The direct visualisation of the peritoneal cavity through laparoscopic approach allows the most accurate classification of the neoplastic disease (through the detection of the visceral or peritoneal metastases escaping the preoperative investigations); of the 19 patients selected for endoprosthesis, 8 presented peritoneal dissemination, and 5 had hepatic metastases. Abdominal hepatic metastases are correlated with esogastric junction localizations of the neoplastic disease, the same for ascites, which was highlighted in 10 patients, of which 6 had malign cytology and the rest of them had other etiologies (severe hypoproteinemia, cirrhosis or ascites).

Introducing the oro-gastric probe may fail due to tumor stenosis, which we met in 11 of the 19 patients selected for laparogastroscopic oesophageal endoprosthesis. In this case, aboral catheterisation of the tumoral esophagus may be tried with the help of a guided polythene spiral catheter with metallic mandren on sight, the localisation of the cardial orifice being facilitated by the assembly of a thin guide wire when performing the upper gastrointestinal endoscopy, where possible.

Regarding our casuistry, in two cases, esophagus catheterization was not possible due to the inability to access laparoscopically the cardia infiltrated by the tumour, both cases requiring the classical open minimally invasive approach (minilaparotomy). Digital localisation of the cardia orifice was performed followed by a veritable tumoral drilling accompanied by bleeding, its control being achieved through prosthetics.

An aspect which is worth mentioning is the facilitating of the histopathologic diagnosis offered by this method of endoprosthesis. At the same time with prosthesis tractioning and crossing the area of malign stenosis by tumoral drilling, tumoral fragments may be sampled, which in uncertain cases (preoperative endoscopy with benign biopsy) by extemporaneous examination can definitively settle the diagnosis and the subsequent therapeutic conduct.

CONCLUSIONS

The early diagnosis of the esophageal-gastric junction adenocarcinoma, both in our country and in many parts of the world is not possible yet, unless “accidentally”. The incidence of the disease is increasing, most frequently the lesion is diagnosed in advanced stages, thus, few patients can benefit from treatment with radical intent. Therefore, the number of the sick patients who need palliative treatment also increases, endoscopic prosthetics representing the treatment of choice, which will consequently bring about the increase of the number of cases impossible to be treated by endoscopic prosthesis, in whom the last option will be the gastrostomy, cases which we can approach laparogastroscopically and by prosthesis.

Although the number of patients diagnosed with esophageal-gastric junction adenocarcinoma who received laparoscopic arthroplasty by transtumoral drilling is limited, this original procedure brought us satisfaction whenever we turned to this approach, both in the above mentioned pathology and in other oesophageal diseases.

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