

What should we do in order to increase Endoscopic Diagnosis and Treatment of Gastric Cancer Type 0?

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Increasing diagnosis of early gastric cancer (EGC) and consistently improving patients' survival rates for the most part depend on the understanding of doctors. As doctors, we must understand the essence of the concept of EGC and its diagnosis and treatment. We also must understand the basis of techniques, differences among techniques, universal EGC nomenclature, the frequency of EGC within our environment and outside of our environment, curability criteria, and the national reality. Moreover, we need to understand and what will probably occur in the immediate future.

Regarding the concept, the minimally invasive treatment of EGC is limited to the mucosa and submucosa, and is derived from evidence that in this state the risk of lymph node invasion is almost zero. It is 0.0% to 0.3% for well differentiated intramucosal carcinomas (<30mm with or without ulcer), 0.0% to 0.4% for well differentiated intramucosal carcinoma without ulcers of any size, and 0.0% to 0.25% for well differentiated intramucosal or superficial submucosa carcinoma (up to 500 μ m, Sm1 and <30 mm) without lymphatic or venous compromise (1). Also, an analysis only of adenocarcinoma invading up to the submucosal layer (Sm) has proven that in injuries <30mm, well differentiated invasions only up to the superficial portion of the submucosa and without lymphovascular carcinoma (Sm1), the risk of regional lymph node invasion is negligible (0.0% to 3.1%) (2). Following these studies it has now been concluded that gastrectomy with lymphadenectomy is not necessary for injuries with the preceding criteria. Endoscopic treatment has become method of choice after initially being adopted and popularized in Japan, then in Asia (3) and subsequently in the West (4-6).

Regarding technique, in Japan endoscopic mucosectomies have been performed as an alternative to surgical treatment with good results since 1987. Initial reports described this technique as a relatively easy procedure. Several methods have been derived from it: 1) polypectomy snare only, 2) snare forceps with double channel endoscope, and 3) cap and cut, and cap, tie and cut (7-9). However, in the publication covering the most case studies (479 cases), Ono et. al. reported incomplete reinsertion with positive borders in 13% (16/128) of the cases studied with 10-20 mm lesions and in 50% (4/8) of those studied with >30 mm lesions. In addition, 17.5% (84/479) of their specimens turned out to be impossible to evaluate histologically due to diathermic damage, mechanical damage or multiple fragmentation. These results combined with the intrinsic limitations of standard mucosectomy (insufficient for lesions >15mm, necessity of a double channel endoscope) have led to the development of a technique to remove more healthy tissue around the horizontal tumor edge and more submucosal tissue at the vertical tumor edge than in standard mucosectomy. This technique has been used

for endoscopic submucosal dissection (ESD) in the world leading Japanese research centers since 1997 and now have gained wide international acceptance (10).

Regarding classification, EGC is confined to mucosa or submucosa regardless of the presence of regional lymph nodes. It is also known as gastric cancer T1 according to the international classification (11) and as type 0 according to the Paris classification of superficial lesions of the digestive tract (12). This last classification contains the well known subdivision of types 0: Ip, Is, IIa, IIb, IIa-IIc and IIc, which correspond to the anatomical variants of tumors.

Regarding frequency, the more experienced institutions, such as NCCH, carry out an average of 21 ESD per month (average: 258 procedures/year) (13). In May 2009, a series of 9 ESD for EGC, conducted over 12 months, was reported in Colombia. In this short series the average size of the specimen was 8.5 mm. Resection in a single block was performed in 100% of the cases with a cure rate of 78%. This study showed, for the first time in Colombia, the viability and efficacy of the ESD with IT-Knife2 for EGC treatment according to the curability criteria of the Japanese Association of Gastric Cancer (14). These numbers, together with the current figures of Gomez and associates, are of transcendental importance and of historic relevance for Latin America, since until recently the only endoscopic curability reports in Colombia have been anecdotal.

Regarding curability criteria, it has been accepted that tumors reported as well differentiated, without lymphovascular invasion, limited to the mucosal layer or Sm1y with negative horizontal edge correspond to curable dissections. The advent of this curability concept was parallel to development of the ESD with IT-Knife, and since 2008, ESDs with the IT-Knife2. Both knives were developed by Ono (15).

Regarding the present national state of affairs, in this volume of the Colombian Journal of Gastroenterology, Gomez and associates report their experience with endoscopic treatment and monitoring of EGC for intramucosal invasions in lesions <15mm. This report is of vital importance for Latin America because gastric cancer is still ranked first in frequency and mortality not only in Colombia but also in several other countries of this continent. This study proves that even in public institutions, sometimes without the best optical technology, mucosectomy for EGC of <15mm is possible and can have good results. The absence of local recurrences for up to 5 years reported in the study reinforces the evidence of the absence of lymphatic invasions of the disease in type 0. However, this important study lacks some data of primary importance for comparisons with the published literature. One of these missing pieces is an estimate of the annual frequency of EGC or T2 diagnosis in the study. There is no reference to the number of years that the

study lasted, nor to the frequency per 1000 endoscopies for screening. In addition, the total number of Sm1 and Sm2 invasions which physicians tried to treat endoscopically is the number needed for calculation of the global effectiveness of endoscopic treatment for the series. This information should have been included if it exists, and is the type of analysis that is available in big series (Oda).

Finally, as regards the present Latin American reality, disseminated of the application of the techniques of mucosectomy and ESD has been limited to a few centers outside of Japan. This is due to the lack of commercial availability of elements of endoscopic therapy. As of 2009 marketing of the IT-Knife 2 and other essential endoscopic therapy elements has begun. In addition, unlike mucosectomy ESD is a procedure that requires ability and experience. Therefore additional formal training is an obligation. As an alternative to ESD, mucosectomy for injuries <15mm is a valid, applicable and reproducible procedure, although Japanese schools do not perform it due to the intrinsic limitations of the technique and the results of big series (Ono, Oda).

Glancing into the future we can see that the formation and consolidation of accredited training centers constitutes an effective strategy to increase the frequency of diagnosis and curative endoscopic treatment of EGC, not only in Colombia but also in Latin America and the world. This is because of the already increasing frequency of EGC diagnosis, the continuous growth of preventive medicine, the current commercial availability of endoscopic therapy elements, the continued development of high technology imaging, the permanent cooperation between Japan and Latin America, and above all, the interest of endoscopists in becoming qualified to offer the best alternatives for their patients. These accredited training centers will need to offer with medical education programs sponsored by the academy and the industry, and to address themselves to gastroenterologists not only to teach diagnostic strategies but also to teach basic concepts, management of mucosectomy complications, ESD and will need to include *hands-on* biological models.

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