



ORIGINAL ARTICLE

## Endoscopic Submucosal Dissection for Gastrointestinal Superficial Lesions: Initial Experience in a Single Portuguese Center



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### KEYWORDS

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### Abstract

**Introduction:** Endoscopic submucosal dissection (ESD) is a minimally invasive organ-sparing endoscopic technique which allows *en bloc* resection of premalignant and early malignant lesions of the gastrointestinal tract regardless of size. In spite of the promising results, mainly from Japanese series, ESD is still not being widely used in western countries. This study aims to report the feasibility, safety and effectiveness of ESD technique for treating premalignant and early malignant gastrointestinal (GI) lesions (esophagus, gastric and rectum) in a Portuguese center.

**Patient and Methods:** From December 2011 to November 2014, 34 GI lesions were treated by ESD. The location, *en bloc* and pathological complete resection (R0) rates, procedure time, complications and local recurrence were retrospectively evaluated.

**Results:** From 34 resected lesions, 18 were gastric (GL), 15 were rectal (RL) and one esophageal (EL). *En bloc* resection for each location was 17/18 (94%), 11/15 (73%) and 1/1 respectively. R0 was achieved in 16/18 (89%) GL, 9/15 (60%) RL and 1/1 EL. Mean resection time was 67 min for GL, 142 min for RL and 40 min for EL. Complications included immediate (6%) and delayed (3%) minor bleeding but no perforation. One local residual lesion from a RL was reported in the follow-up, effectively treated with an endoscopic technique. Disease-specific survival was 100% over a mean follow-up period of 14 months.

**Conclusion:** ESD has shown to be a safe and feasible resection method, achieving high R0, low recurrence and complication rates. Our results are similar to those reported in other international series.

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**PALAVRAS-CHAVE**

Dissecção;  
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Gastrointestinais

## Dissecção Endoscópica da Submucosa para Lesões Gastrointestinais Superficiais: Experiência Inicial de um Único Centro Português

**Resumo**

**Introdução:** A dissecção endoscópica da submucosa (DES) é uma técnica minimamente invasiva que permite a ressecção em bloco de lesões gastrointestinais pré-malignas e malignas precoces independentemente do seu tamanho. Apesar dos resultados promissores, principalmente em séries Japonesas, a DES ainda não é executada de forma generalizada no mundo Ocidental. O objetivo do estudo é reportar a exequibilidade, segurança e eficácia da técnica de DES no tratamento de lesões pré-malignas e malignas precoces do tubo digestivo (esófago, estômago e reto) num centro Português.

**Doentes e Métodos:** Entre dezembro de 2011 e novembro de 2014, 34 lesões gastrointestinais foram excisadas por DES. A sua localização, taxas de ressecção em bloco e ressecção histológica completa (R0), tempo do procedimento e recidiva local foram avaliados.

**Resultados:** De 34 lesões ressecadas, 18 foram gástricas (LG), 15 foram rectais (LR) e uma esofágica (LE). A ressecção em bloco em cada localização foi de 17/18 (94%), 11/15 (73%) e 1/1 respetivamente. A ressecção foi considerada R0 em 16/18 (89%) LG, 9/15 (60%) LR e 1/1 LE. Os tempos médios de ressecção foram de 67 min para LG, 142 min para LR e 40 min para LE. As complicações registadas incluíram hemorragia imediata (6%) e tardia (3%), sem casos de perfuração. Durante o período de seguimento é reportada uma lesão residual de uma LR, tratada eficazmente por técnica endoscópica. Verificou-se uma sobrevida específica da doença de 100% durante um período médio de seguimento de 14 meses.

**Conclusão:** A técnica de DES revelou ser segura e exequível, atingindo uma elevada taxa de R0 e baixas taxas de recidiva e complicações. Os resultados apresentados são semelhantes aos reportados em outras séries internacionais.

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## 1. Introduction

Endoscopic submucosal dissection (ESD) was first described by Hirao et al. in the 80s and is characterized by three basic steps: fluid injection into the submucosa to separate the lesion from the muscle layer, circumferential cutting of the surrounding mucosa and dissection of the connective tissue of the submucosa beneath the lesion.<sup>1,2</sup>

This minimally invasive organ-sparing endoscopic technique allows *en bloc* resection of premalignant and early malignant lesions of the gastrointestinal tract, regardless of size, avoiding surgical morbidity. Comparing to endoscopic mucosal resection (EMR), ESD contributes to a better histological analysis, lower local recurrence rate and more curative resections.<sup>3,4</sup>

In spite of the promising results from Japanese and recent western series, ESD is still not being widely used in western countries.<sup>5-8</sup>

The aim of this study is to report the feasibility, safety and effectiveness of ESD technique for treating premalignant and early malignant gastrointestinal (GI) lesions (esophagus, gastric and rectum) in a European center.

## 2. Patients and Methods

### 2.1. Pre-procedure evaluation

Before the procedure a careful endoscopic staging was performed to all lesions. Morphological endoscopic

classification was made according to Paris classification,<sup>9</sup> and every sign suggestive of invasive lesion (e.g. Kudo V<sub>N</sub>) was looked for.<sup>10</sup> When there were doubts about possible deep invasion, complementary endoscopic ultrasonography (EUS) staging was made.

All lesions had previous endoscopic biopsies confirming their neoplastic nature (pre-malignant or malignant lesions).

We proposed ESD for gastric and esophageal pre-malignant or early malignant lesions, with more than 10 mm, with possibility of endoscopic curability based on Japanese criteria (Japanese Gastric Cancer Association and Japan Esophageal Society Guidelines).<sup>11,12</sup>

ESD indications for rectal neoplastic lesions treatment were adapted from those proposed by the Colorectal ESD Standardization Implementation Working Group and are shown in Table 1.<sup>13</sup> Subepithelial lesions with more than 10 mm were also included.

**Table 1** Indications for CR-ESD.

1. LST-NG  $\geq 2$  cm.
2. LST-G (mixed type)  $\geq 4$  cm.
3. Mucosal lesion with fibrosis resulting in positive non-lifting-sign.
4. Suspected minimal invasive lesion (e.g. Kudo V<sub>I</sub> pit pattern) endoscopically resectable.

CR-ESD: colorectal endoscopic submucosal dissection; DBE: double balloon enteroscopy; LST-NG: lateral spreading tumor non-granular type; LST-G: lateral spreading tumor granular type.

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