



ORIGINAL ARTICLE

Endoscopic Submucosal Dissection of Gastric Superficial Lesions: Predictors for Time of Procedure in a Portuguese Center



Francisco Ribeiro-Mourão^{a,*}, Nuno Veloso^{a,b}, Mário Dinis-Ribeiro^{a,b}, Pedro Pimentel-Nunes^{a,b,c}

^a CINTESIS/CIDES, Faculdade de Medicina do Porto, Porto, Portugal

^b Gastroenterology Department, Instituto Português de Oncologia do Porto Francisco Gentil, Porto, Portugal

^c Physiology Department, Faculdade de Medicina do Porto, Porto, Portugal

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KEYWORDS

Dissection;
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Abstract

Background: Endoscopic submucosal dissection (ESD), an endoscopic technique used for treatment of gastric superficial lesions, has been gaining importance on western countries. Procedural times have an impact on various outcomes.

Aim: To define which factors from patients, lesions and procedure can predict longer procedural times.

Methods: In a cohort of 127 lesions resected by ESD with IT-knife, after using needle-knife for submucosal layer access, by experienced gastroenterologists, characteristics from the patient (age, gender, presence of co-morbidities, usage and suspension of anti-platelet drugs and general physical condition), lesion (size, histopathological diagnosis at biopsy, location, macroscopic type and submucosal invasion) and procedure (adverse events) were retrospectively analyzed for its impact on time of procedure. Univariate and multivariate analysis were performed.

Results: Lesions larger than 20 mm ($p < 0.001$), on the upper third of the stomach ($p = 0.035$) and with an ASA score of 3 ($p = 0.031$) were considered influential factors for a longer procedure time and specifically for a time of procedure longer than 90 min. Existence of intra-procedure adverse events was also a predictor for a procedure time > 90 min. Lesion's size > 20 mm and location in the upper third were independently associated with a procedure time longer than 90 min (OR 4.91 [95%CI 2.29–10.50] and OR 18.26 [95%CI 2.02–164.78], respectively).

* Corresponding author.

E-mail addresses: mimed08082@med.up.pt, franciscoribeimourao@gmail.com (F. Ribeiro-Mourão).

PALAVRAS-CHAVE

Disseção;
Endoscopia
Gastrointestinal;
Neoplasias do
Estômago;
Tempo de
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Conclusion: The time of procedure of ESD for gastric superficial lesions is influenced by size of lesion (>20 mm) and location (upper third of stomach), which predict a time longer than 90 min. This can be useful for better management of workflow, operation, training of teams and anesthetic procedures.

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Dissecção Endoscópica da Submucosa de Lesões Superficiais Gástricas: Preditores do Tempo de Procedimento num Centro Português

Resumo

Introdução: A Dissecção Endoscópica de Submucosa (ESD), uma técnica utilizada para o tratamento de lesões gástricas superficiais, tem ganho importância no Ocidente. O tempo de procedimento tem impacto nos *outcomes*.

Objetivo: Definir os fatores do paciente, da lesão e do procedimento que predizem um tempo de procedimento prolongado.

Métodos: Numa coorte de 127 lesões removidas por ESD com *IT-knife*, após utilização de *needle-knife* para acesso à camada submucosa, por gastreenterologistas experientes foram analisadas, retrospectivamente, características dos pacientes (idade, género, presença de co-morbilidades, toma/suspensão de agentes anti-plaquetários e condição física), das lesões (tamanho, diagnóstico histopatológico na biopsia, localização, características macroscópicas e invasão submucosa) e do procedimento (complicações). Foi realizada análise univariada e multivariada.

Resultados: Lesões >20 mm ($p<0,001$), no terço superior do estômago ($p=0,035$) e em pacientes com um índice ASA 3 ($p=0,031$) foram considerados como fatores com influência para tempo de procedimento prolongado e, especificamente, para um tempo de procedimento superior a 90 minutos. A existência de complicações intra-procedimento também foi considerada como um preditor para um tempo >90 minutos. Uma lesão >20 mm e a localização no terço superior estiveram associadas independentemente com um tempo de procedimento superior a 90 minutos (OR 4.91 [IC 95% 2.29-10.50] e OR 18.26 [IC 95% 2.02-164.78], respetivamente)

Conclusões: O tempo de procedimento da ESD para lesões superficiais gástricas é influenciado pelo tamanho e localização das lesões, sendo preditores de um tempo de procedimento superior a 90 minutos. Estes dados são importantes para melhor gestão da dinâmica de trabalho, procedimento, formação das equipas e procedimentos anestésicos.

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1. Introduction and background

Endoscopic submucosal dissection (ESD) is an endoscopic technique used for treatment of gastric superficial lesions.¹ It has been widely used in countries such as Korea and Japan, but its use only widespread in the Western countries in the last decade.² Although having successful results,³⁻⁵ ESD requires a high level of expertise in order to reach the desired outcomes.⁶⁻⁷

Specifically, longer procedural times are related to a higher level of adverse events⁸ such as delayed bleeding,⁹ perforation,¹⁰⁻¹¹ post-operative pneumonia¹¹⁻¹³ and other clinical adverse events related to premedication and a heavy workload for patients.⁷ Moreover, previous retrospective studies have shown that time of procedure can be influenced by different factors such as existence of fibrosis,¹⁴⁻¹⁵ presence of ulceration,^{7,15-17} area of the resected specimen,^{7,16-19} location on the upper portion

of the stomach,^{7,16-19} adhesion¹⁹ and presence of a scar.⁷ Therefore, it is essential to take these factors into account in the pre-operative period, since they can influence the workflow for ESD such as allocation of type of rooms and anesthetic procedures, and level of training of teams.¹¹

Considering this impact of procedure time, the present work aims at addressing the procedure time of ESD for removal of superficial gastric lesions and to define which patients' characteristics, lesions' features and procedure variables may be predictors of longer procedural times.

2. Materials and methods

2.1. Type of study and selection of patients

Our study reports a retrospective cohort of 162 consecutively patients (with 195 gastric neoplastic lesions) that

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