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Initial results of early gastrointestinal cancer treatment using endoscopic submucosal dissection at 19-8 hospital

Primeros resultados del tratamiento precoz del cáncer gastrointestinal mediante disección endoscópica de la submucosa en el hospital 19-8

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ABSTRACT

Introduction: Early-stage cancer is defined as cancer confined to the mucosal or submucosal layers (T1 stage) without lymph node metastasis**.**

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Objective: To evaluate the outcomes of endoscopic submucosal dissection in treating early-stage gastrointestinal cancer.

Methods: A prospective descriptive study involving 20 patients with early-stage gastrointestinal cancer treated using endoscopic submucosal dissection at the Gastroenterology Department of 19-8 Hospital from September 2023 to September 2024.

Results: Average procedure duration: 62-180 minutes; lesion size: 6-45mm; in bloc resection rate: 100 %; bleeding complication rate: 5 %; average hospital stay: 3-8 days; lesion locations: hypopharynx, esophagus, stomach, colon, and rectum.

Conclusions: Endoscopic submucosal dissection is an effective and relatively safe technique for treating early-stage cancer. Complications such as perforation and bleeding can occur but are manageable. Endoscopic submucosal dissection allows for en bloc lesion removal, enabling pathologists to accurately assess resection margins through histopathological results. During endoscopy, careful observation is necessary to avoid missing lesions, especially when the scope passes through the stimulated hypopharynx.

Keys words: endoscopy; endoscopic submucosal dissection; gastrointestinal cancer.

RESUMEN

Introducción: El cáncer en etapa temprana se define como cáncer confinado a las capas mucosas o submucosas (etapa T1) sin metástasis en los ganglios linfáticos.

Objetivo: Evaluar los resultados de la disección submucosa endoscópica en el tratamiento del cáncer gastrointestinal en estadio temprano.

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Métodos: Estudio descriptivo, prospectivo, que incluyó a 20 pacientes con cáncer gastrointestinal en estadio temprano tratados mediante disección submucosa endoscópica en el Departamento de Gastroenterología del Hospital 19-8 desde septiembre de 2023 a septiembre de 2024.

Resultados: Duración media del procedimiento: 62-180 minutos; tamaño de la lesión: 6-45 mm; tasa de resección en bloque: 100 %; tasa de complicaciones hemorrágicas: 5 %; estancia hospitalaria media: 3-8 días; Localizaciones de las lesiones: hipofaringe, esófago, estómago, colon y recto.

Conclusiones: La disección submucosa endoscópica es una técnica eficaz y relativamente segura para tratar el cáncer en etapa temprana. Pueden ocurrir complicaciones como perforación y sangrado, pero son manejables. La disección submucosa endoscópica permite la eliminación de la lesión en bloque, lo que permite a los patólogos evaluar con precisión los márgenes de resección a través de resultados histopatológicos. Durante la endoscopia, es necesaria una observación cuidadosa para evitar pasar por alto lesiones, especialmente cuando el endoscopio pasa a través de la hipofaringe estimulada.

Palabras clave: endoscopy; endoscopic submucosal dissection; gastrointestinal cancer.

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INTRODUCTION

Early-stage cancer is defined as cancer confined to the mucosa or submucosa (T1 stage) without lymph node metastasis (N0). Endoscopic mucosal resection (EMR) is a minimally invasive method for treating early-stage cancer. However, EMR has limitations, particularly in achieving en bloc resection for lesions larger than 20mm, leading to higher recurrence rates in piecemeal resections. Developed in Japan in the 1990s, the endoscopic submucosal dissection (ESD) technique addresses EMR's challenges, making it suitable for lesions larger than 20mm or those with scarring. ESD provides precise histopathological diagnosis and reduces recurrence rates. Its limitations include technical difficulty, requiring skilled endoscopists, prolonged procedure times, and risks of complications such as perforation and bleeding.

Currently, many hospitals are equipped with modern machinery, leading to advancements in early cancer diagnosis and increased detection rates of early lesions. Following these developments, 19-8 Hospital initiated the ESD technique in September 2023 to provide minimally invasive and effective interventions for patients.

This study aims to evaluate the outcomes of endoscopic submucosal dissection in treating early-stage gastrointestinal cancer.

METHODS

Research Subjects

20 patients with early-stage cancer in the hypopharynx, esophagus, stomach, colon, and rectum treated at the Gastroenterology Department of 19-8 Hospital from September 2023 to September 2024.

Inclusion Criteria

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- Patients diagnosed with early-stage cancer based on endoscopic imaging, classified according to JES, JNET, and chemical staining.
- Histopathological results indicating low-grade or high-grade dysplasia.
- CT and MRI scans showing no lymph node metastasis.
- Exclusion Criteria:
- Endoscopic findings suggesting lesions involving the muscularis propria.
- Histopathology confirming invasive cancer.
- CT and MRI indicating lymph node metastasis.

Research Methods

- Study design: prospective, case-by-case descriptive study.
- Patient selection: patients underwent endoscopy following hospital protocols:

1. Screening at the specialized gastroenterology clinic, followed by indicated gastrointestinal endoscopy.
2. Endoscopy performed according to Ministry of Health guidelines:

- Detection of suspicious lesions under white light and M-NBI; staining with indigo carmine or Lugol's solution.
- Biopsy for histopathological examination.

o Patients with dysplasia on histopathology were indicated for ESD, ensuring selection criteria and exclusion factors were met.

3. Endoscopic Submucosal Dissection Procedure
4. Anesthesia:

- Lesions in the hypopharynx and esophagus: endotracheal anesthesia.
- Lesions in the stomach and colon: intravenous anesthesia.

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5. Histopathology: Specimens were retrieved en bloc, with markings at the upper and lower margins, fixed in 10 % formalin.

RESULTS

Table 1. Lesion Locations Treated with ESD

Lesion location	Number of patients	Percentage (%)
Hypopharynx	2	10
Esophagus	7	35
Stomach	3	15
Colon and Rectum	8	40

Table 2. Treatment outcomes

Variable	Result
Average Procedure Duration	62-180 minutes
Lesion Size	6-45mm
En Bloc Resection Rate	100%
Complication Rate	5%

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Mortality Rate	0
Hospital Stay Duration	3-8 days

Table 3. Histopathological results

Histopathology	Number of Patients	Percentage (%)
Low-Grade Dysplasia	3	15
High-Grade Dysplasia	6	30
Squamous Cell Carcinoma	7	35
Adenocarcinoma	4	20

DISCUSSION

Based on data from 20 patients:

- The complete resection rate was 100 %, demonstrating ESD's effectiveness.
- Complication rate was low, with one case of bleeding in the sigmoid colon due to adhesions and difficult positioning.
- Procedure duration ranged from 62–180 minutes, influenced by factors such as lesion size and location.

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CONCLUSIONS

- ESD is an effective and relatively safe technique for early-stage cancer treatment.
- ESD enables en bloc resection, allowing accurate pathological assessment of lesion removal.
- During endoscopy, careful observation is needed when passing the endoscope through the hypopharynx, especially in cases of patient irritation, to avoid missing lesions.
- Magnifying endoscopy with chromoendoscopy and chemical staining (Lugol's solution, Indigo carmine) enhances the detection and diagnosis of early-stage cancerous lesions.

Conflicts of interest

The authors report no conflicts of interest.

Financial information

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Authors' contribution

All authors participated in conceptualization, data curation, formal analysis, research, methodology, project management, supervision, validation, visualization, writing of the original draft, writing, reviewing, and editing of the article.