

# Endoscopic Submucosal Dissection: Principles And Practice

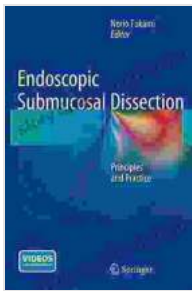
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Endoscopic submucosal dissection (ESD) is a minimally invasive endoscopic technique used to remove precancerous or cancerous lesions from the gastrointestinal tract. It involves lifting the lesion from the underlying muscular layer using a specialized endoscope and then dissecting it away from the surrounding tissue. ESD is a complex procedure that requires specialized training and expertise.

**Principles of ESD** The basic principles of ESD include:

- **Submucosal injection:** A solution is injected into the submucosa (the layer beneath the mucosal lining) to create a cushion that lifts the lesion and separates it from the muscular layer.
- **Mucosal incision:** The mucosal layer is incised around the circumference of the lesion using a specialized knife or laser.
- **Submucosal dissection:** The endoscope is used to dissect the lesion away from the underlying muscular layer, using a combination of cutting and coagulation techniques.
- **Hemostasis:** Any bleeding that occurs during the dissection is controlled using endoscopic coagulation devices.

**Indications for ESD** ESD is indicated for the removal of precancerous or cancerous lesions that are located in the gastrointestinal tract, such as:



## Endoscopic Submucosal Dissection: Principles and Practice by Jana DeLeon

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Enhanced typesetting : Enabled  
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- Esophageal cancer
- Gastric cancer
- Colorectal cancer
- Pancreatic cancer

ESD is particularly useful for removing lesions that are difficult to remove using other endoscopic techniques, such as those that are located in difficult-to-reach areas or have a complex shape.

**Contraindications for ESD** ESD is not suitable for all patients with gastrointestinal lesions. Contraindications for ESD include:

- Lesions that are too large or complex
- Lesions that are located in a difficult-to-reach area
- Patients with severe bleeding disorders
- Patients with an unstable medical condition

**Procedure of ESD/ESD** is typically performed under general anesthesia.

The procedure involves the following steps:

1. **Preparation:** The patient is placed in a supine position on the operating table. The gastrointestinal tract is cleansed and the lesion is identified.
2. **Submucosal injection:** A solution is injected into the submucosa to create a cushion that lifts the lesion.
3. **Mucosal incision:** The mucosal layer is incised around the circumference of the lesion using a specialized knife or laser.
4. **Submucosal dissection:** The endoscope is used to dissect the lesion away from the underlying muscular layer, using a combination of cutting and coagulation techniques.
5. **Hemostasis:** Any bleeding that occurs during the dissection is controlled using endoscopic coagulation devices.
6. **Removal:** Once the lesion has been completely dissected, it is removed from the gastrointestinal tract using a snare or forceps.

**Risks and Complications of ESD/ESD** is a relatively safe procedure, but there are some potential risks and complications, including:

- Bleeding
- Perforation of the gastrointestinal tract
- Infection
- Stricture formation (narrowing of the gastrointestinal tract)

- Pancreatitis
- Death

**Recovery after ESD** After ESD, the patient is typically discharged from the hospital within a day or two. The recovery period usually lasts for several days to weeks. During this time, the patient may experience some discomfort or pain, and they may need to follow a restricted diet.

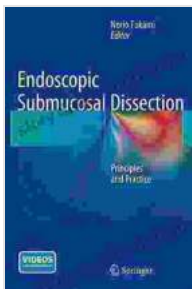
### **Advantages and Disadvantages of ESD**

- Minimal invasiveness
- High success rate
- Excellent cosmetic results
- Can be used to remove large or complex lesions
- Can be performed in an outpatient setting

### **Disadvantages:**

- Technically challenging
  - Requires specialized training and expertise
  - Can be time-consuming
  - May cause scarring or stricture formation
  - Can be associated with a higher risk of complications than other endoscopic techniques
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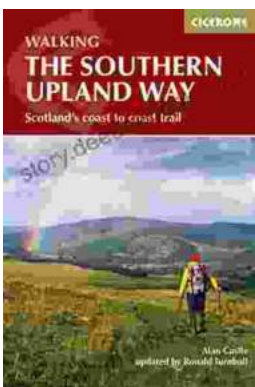
ESD is a valuable endoscopic technique for the removal of precancerous or cancerous lesions from the gastrointestinal tract. It is a complex procedure that requires specialized training and expertise, but it offers several advantages over other endoscopic techniques. ESD is a safe and effective procedure, but it does carry some risks and complications. Patients should discuss the risks and benefits of ESD with their doctor before deciding whether to undergo the procedure.



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