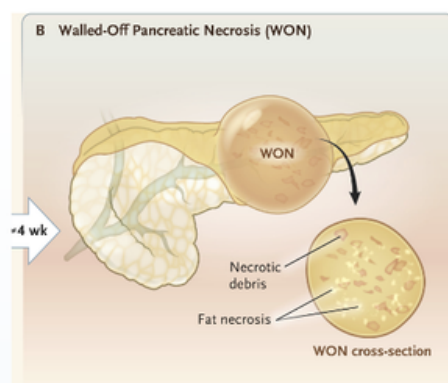


DIAGNOSIS AND MANAGEMENT OF ENCAPSULATED PANCREATIC NECROSIS (WON)

Tips para el Manejo Endoscópico de WON Pancreático - 2026

Walled-Off Necrosis: Consejos Prácticos Basados en Evidencia 2026



Walled-Off Necrosis (WON) is a late collection of fluid resulting from acute necrotizing pancreatitis, characterized by heterogeneous contents (fluid + solid debris) and a well-defined wall, typically occurring ≥ 4 weeks after the initial event according to the revised Atlanta classification. Its accurate differentiation from pseudocysts is critical because it determines the therapeutic strategy, especially the need for necrosectomy in addition to drainage.^{1,3}

¿Qué es el WON?

- Colección necrótica encapsulada, aparece **>4 semanas** tras pancreatitis necrotizante
- Contiene **material sólido y líquido** (a diferencia del pseudoquiste)
- 20% de pancreatitis aguda desarrolla necrosis

Intervenir cuando hay : infección, síntomas compresivos o hemorragia

FIGURE 1

DEFINITION AND PATHOPHYSIOLOGICAL BASIS

WON results from the organization of pancreatic and peripancreatic necrosis with the formation of a fibrous capsule. Unlike a pseudocyst, it contains solid necrotic material, which explains:

- Higher risk of infection
- Need for more complex drainage
- Variable response to simple drainage

The inflammatory process, bacterial colonization, and intraluminal pressure determine symptoms and complications.^{2,4}

DIAGNOSTIC IMAGING

COMPUTED TOMOGRAPHY (CT)

- Initial method of selection
- Identify:
 - Encapsulated collection
 - Presence of gas (suggests infection)
 - Anatomical extension

Limitation: underestimates solid debris.^{1,3}

MAGNETIC RESONANCE IMAGING (MRI)

- Better characterization of the content
- Difference between liquid and solid necrosis
- Useful for therapeutic planning

ENDOSONOGRAPHY (EUS) – CENTRAL ROLL

EUS is currently the most accurate method for:

- Confirm WON vs pseudocyst
- Quantify solid debris
- Guide safe transmural drainage
- Avoid vascular structures

The presence of heterogeneous internal echoes, septa, and hyperechoic material confirms necrosis.

Furthermore, EUS allows selection of the optimal drainage site and evaluation of vascular complications (pseudoaneurysms).^{4,6}

INTERVENTION INDICATIONS

Not all WONs require drainage.

Instructions:

- Infection (confirmed or suspected)
- Persistent pain
- Gastric or biliary compression
- Persistent organ failure
- Oral intolerance
- Hemorrhage

The current trend favors a minimally invasive “step-up” strategy.^{1,2}

THERAPEUTIC MANAGEMENT STEP-UP STRATEGY

1. Drainage (endoscopic preferred)
2. Endoscopic necrosectomy if there is no response
3. Percutaneous or surgical options if it fails

This approach reduces mortality and complications compared to primary surgery.²

EUS-GUIDED DRAINAGE

AVAILABLE STENTS:

PLASTIC STENTS (DPPS)

Pigtail stents are preferred for collections with higher fluid content. Sometimes, more than one stent can even be placed. Pigtail stents are preferred due to their low migration rate.

- Lower cost
- Smaller caliber
- Limited for extensive necrosis

LAMS-TYPE METALLIC STENTS

Preferable in collections with more solid content and necrosis.

- Large diameter (facilitates drainage and access)
- They allow direct necrosectomy
- Fewer re-interventions

LAMS is currently the standard in complex WON.^{5,7}

ENDOSCOPIC NECROSECTOMY (SEE VIDEO)

Indicated when:

- Debris persists
- There is no clinical improvement

It is done by:

- Access via LAMS
- Use of handles, forceps, irrigation

It may require multiple sessions.

Recent evidence shows:

- High clinical success rate (>80–90%)
- Lower morbidity vs. open surgery.^{6,8}
- Always try to do it with CO₂

RECENT ADJUVANTS (2023–2026)

- Irrigation with hydrogen peroxide (H₂O₂) to facilitate debridement
- Combined (dual) drainage: endoscopic + percutaneous: this is performed when the fluid collections are very large. With a stent, we can drain the collection that is near the stomach or duodenum, but often the fluid drains through the peritoneal cavity and retroperitoneum, becoming septated and unable to be drained that way. This is where we can complement the procedure with percutaneous drainage, assisted by interventional radiology.
- Use targeted antibiotics in documented infection. Use those with high penetration into the pancreas.

COMPLICATIONS

- Bleeding (pseudoaneurysms)
- Drilling
- Stent migration
- Sepsis
- Stent obstruction

EUS significantly reduces vascular risk, because many of these collections may have pseudoaneurysms, increasing the risk of bleeding.

FOLLOW-UP

- Serial images (CT or EUS)
- LAMS removal: generally 3–4 weeks. This is the general rule in the guidelines. However, if we want to avoid vascular risk, we should place a pigtail inside the LAMS to prevent the metallic part from rubbing against the cyst where it makes contact. Pigtails also aid drainage in cases where the LAMS may become blocked with necrotic debris. With pigtails in place, the time to removal of the metallic stent can be extended to about 6 weeks.
- Evaluate full resolution.

PRACTICAL ALGORITHM

1. Diagnosis (CT ± MRI).
2. Confirmation with EUS: In this it is important to assess the direction of the puncture, the best place to do it, ideally as close as possible to the transducer, the thickness of the capsule which should be between 7-10 mm, the type of content, the interposition of vessels to avoid bleeding, the size of the cyst among others.
3. Assess symptoms/infection.
4. Guided EUS drainage (LAMS).
5. Post-puncture clinical reassessment.
6. Necrosectomy if necessary if the patient continues to be symptomatic.
7. Stent removal.

VIDEOS OF THE MONTH



**ELUXEO 8000
SYSTEM**



VIDEO
**TIPS PARA EL MANEJO DE
LAS WON DE PÁNCREAS**

This is an excellent video with all the tips on handling won. It's worth watching carefully.

ARTICLE OF THE MONTH

Clinical, Radiological, and Endoscopic Features of Pancreatic Pseudocyst and Walled-Off Necrosis: How to Diagnose and How to Drain Them

*Dell'Anna G, Lavallo S, Biamonte P,
et al. Journal of Clinical Medicine
— 3 de noviembre de 2025. J Clin
Med. 2025;14(21):7818. DOI:
10.3390/jcm14217818*

Pancreatic pseudocyst (PP) and septated pancreatic necrosis (WON) are two distinct sequelae of acute and chronic pancreatitis that require precise differentiation to guide appropriate management.

CT and MRI remain essential for distinguishing primary peritoneal fluid (PP) from waste products of congestion (WON), assessing the contents of fluid collections, and identifying complications. Ultrasound has emerged as a key modality for both diagnosis and drainage planning. Management has evolved significantly toward minimally invasive approaches. EUS-guided endoscopic drainage—using double pigtail stents or LAMS—has become the preferred strategy for symptomatic or infected collections. Endoscopic necrosectomy is increasingly performed as a less invasive alternative to surgical debridement, although patient selection and the optimal technique remain under debate.

In summary, the review offers an updated synthesis of diagnostic imaging criteria, therapeutic algorithms, and comparative results between endoscopic, percutaneous, and surgical drainage, with emphasis on the central role of EUS throughout the process.

Manejo de los WON del páncreas 2025

Técnica	Éxito clínico	Ventaja clave	Limitación principal
LAMS	~85-90%	Acceso para DEN, menor tiempo	Mayor costo, riesgo de sangrado
DPPS	~80-85%	Menor costo	Más sesiones, oclusión frecuente
LAMS + DPPS coaxial	Alta	Menor oclusión/recurrencia	Solo en casos seleccionados
Drenaje percutáneo	~25-50% en WON	Útil si no hay acceso endoscópico	No remueve debris, fistulas
DMD (dual)	Alta en WON compleja	Irrigación + drenaje interno	Requiere coordinación multidisciplinaria
Cirugía	Variable	Casos refractarios	Alta morbilidad

CONCLUSIONS

WON represents a complex entity requiring a multidisciplinary approach. Endoscopic sonography has transformed its management, becoming the cornerstone of diagnosis and treatment. The use of laparoscopic ultrasound (LAMS) and endoscopic necrosectomy has replaced surgery in most cases, with improved clinical outcomes and reduced morbidity and mortality.

LITERATURE

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