

Utility of the CeDAR Scale for Predicting Surgical Site Complications in Parastomal Hernia Repairs

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CeDAR

Carolinas Equation for
 Determining Associated Risks

STUDY DESIGN

- **Type:** Single-center prospective observational study
- **Setting:** Department of Abdominal Wall Reconstruction, Hospital Virgen del Rocío (Seville, Spain)
- **Study Period:** February 2018 – January 2021
- **Sample:** 32 consecutive patients undergoing elective surgery for symptomatic parastomal hernia, developed after colorectal cancer surgery

OBJETIVE

- To assess the predictive value of the **CeDAR score** for surgical site complications (**SSI and SSO**)

METHODS

- Preoperative application of the CeDAR score
- 30-day postoperative follow-up
- Variables analyzed: SSI, SSO and wound complications (SSI + SSO)
- Analysis: ROC curves, sensitivity, specificity, PPV, NPV

RESULTS

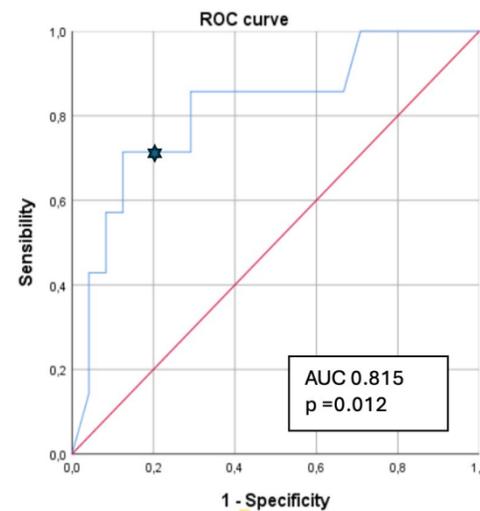
DEMOGRAPHICS AND SURGICAL DATA

- Mean age: **63.1 ± 10 years**
- BMI: **29.2 ± 5.5 kg/m²**
- Parastomal hernia (EHS classification):
 - Type II: 37.5%
 - Type I: 25%
 - Type III: 21.9%
 - Type IV: 15.6%
- **Open** surgical approach : **93.8%**
- Repair type:
 - **Retromuscular repair:** 14 (43.8%)
 - Intra-abdominal repair: 8 (25%)
 - Herniorrhaphy: 4 (12.5%)
 - Preperitoneal repair: 3 (9.4%)
 - Supra-aponeurotic repair: 3 (9.4%)
- Wound classification: **100% clean-contaminated**

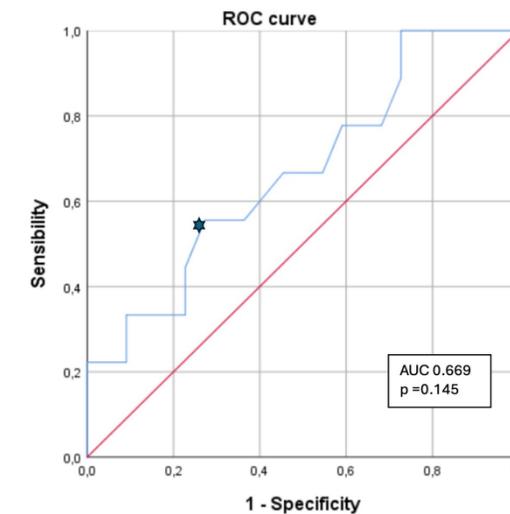
POSTOPERATIVE COMPLICATIONS

- Surgical site infection (**SSI**): **21.9%**
- Surgical site occurrence (**SSO**): **28.1%**
- Wound complications (**SSI + SSO**): **43.8%**
- Reoperation: **7 (21,87%)**
 - Bleeding = 1 (14.3 %)
 - SII = 1 (14.3 %)
 - Bowel perforation = 2 (28.5 %)
 - Anastomotic leak = 1 (14.3 %)
 - Stomal retraction = 2 (28.5%)
- Mortality: **1 (3.1%)**
 - Hemorrhagic shock

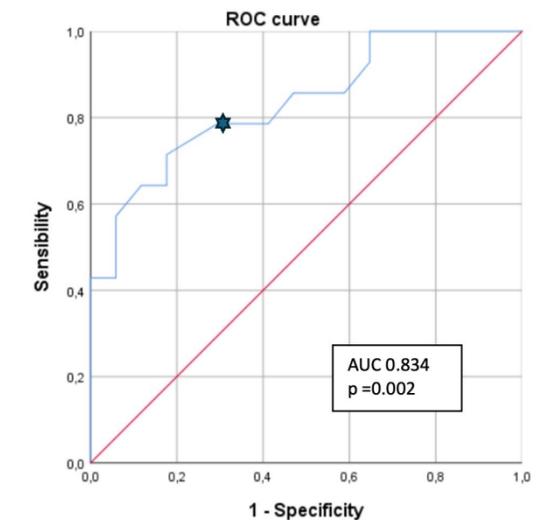
SSI



SSO



SSI+SSO



Postoperative complications	AUC	Sensibility	Specificity	VPP	VPN
Surgical Site Infection (SSI)	0.815	85.7%	68%	43%	94%
Surgical Site Occurrence (SSO)	0.669	55.6%	69.6%	41.6%	80%
Wound complications (SSI + SSO)	0.834	71.4%	77.8%	71.4%	77.7%

CONCLUSIONS

- The CeDAR score demonstrated strong predictive performance for postoperative complications in parastomal hernia repair, particularly for SSI (AUC = 0.815). Its predictive accuracy further improved when considering overall wound complications (SSI + SSO), with an AUC of 0.834, supporting its use in preoperative risk stratification. Patients with scores >43.5 should undergo optimization before surgery to reduce complications.
- As CeDAR is based exclusively on preoperative clinical variables, it is simple to implement and valuable for identifying high-risk patients, enhancing preoperative optimization, and reducing morbidity and healthcare costs in complex abdominal wall reconstruction. Moreover, CeDAR may aid in reconsidering surgical indications in paucisymptomatic patients with a very high operative risk.