



Introduction

The Single stage repair of **contaminated incisional hernia** has an increased risk of mesh infection with 38-49% of patients developing a surgical site occurrence. New strategies to decrease surgical site occurrence in this challenging patient population are needed. Calcium sulfate antibiotic beads (CSAB) are a biodegradable material that deliver high concentrations of antibiotics locally for 4-8 weeks.

Aim

Evaluate the **safety** and **efficacy** of CSAB in single stage repair of incisional hernias in contaminated fields with modified Ventral Hernia Working Group (mVHWG) class 3 .

Method

Research design	Prospective study
Population	Patients undergoing single-stage incisional hernia repair with the use of CSAB and a porcine submucosa biologic mesh in a contaminated fields (mVHWG class 3) between April 2017 and June 2024 by a single surgeon at the QEII Health Sciences Centre
Comparison	Historical controls of published rates of mesh and surgical site infection of single stage hernia repair in contaminated settings
Outcomes	Primary: Surgical site infection and mesh infection rates Secondary: time to infection, serum levels of antibiotics on POD 1, follow-up duration and rate of hernia recurrence.

Results

Patient Demographic and comorbidities

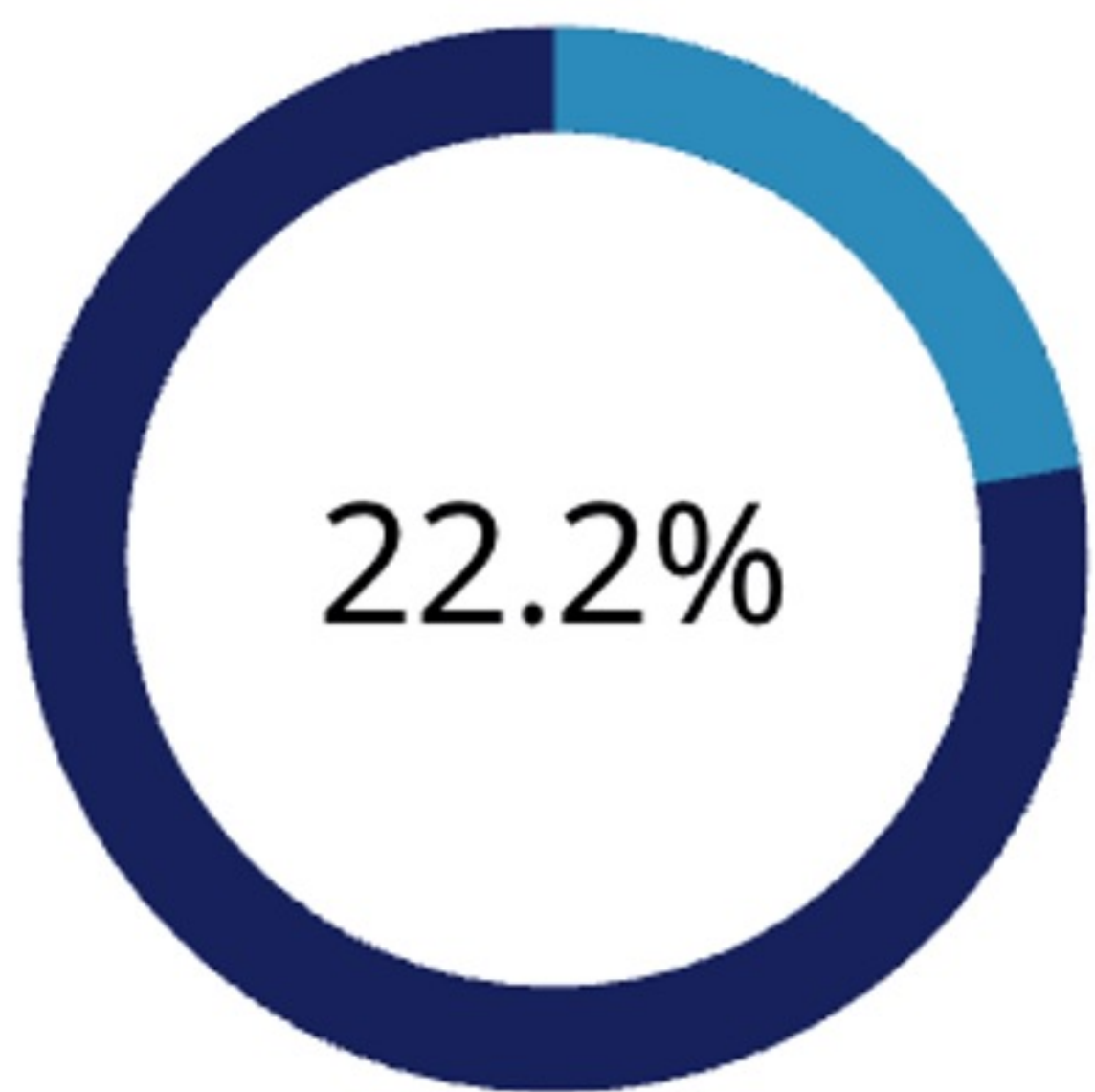
Population: 54 patients



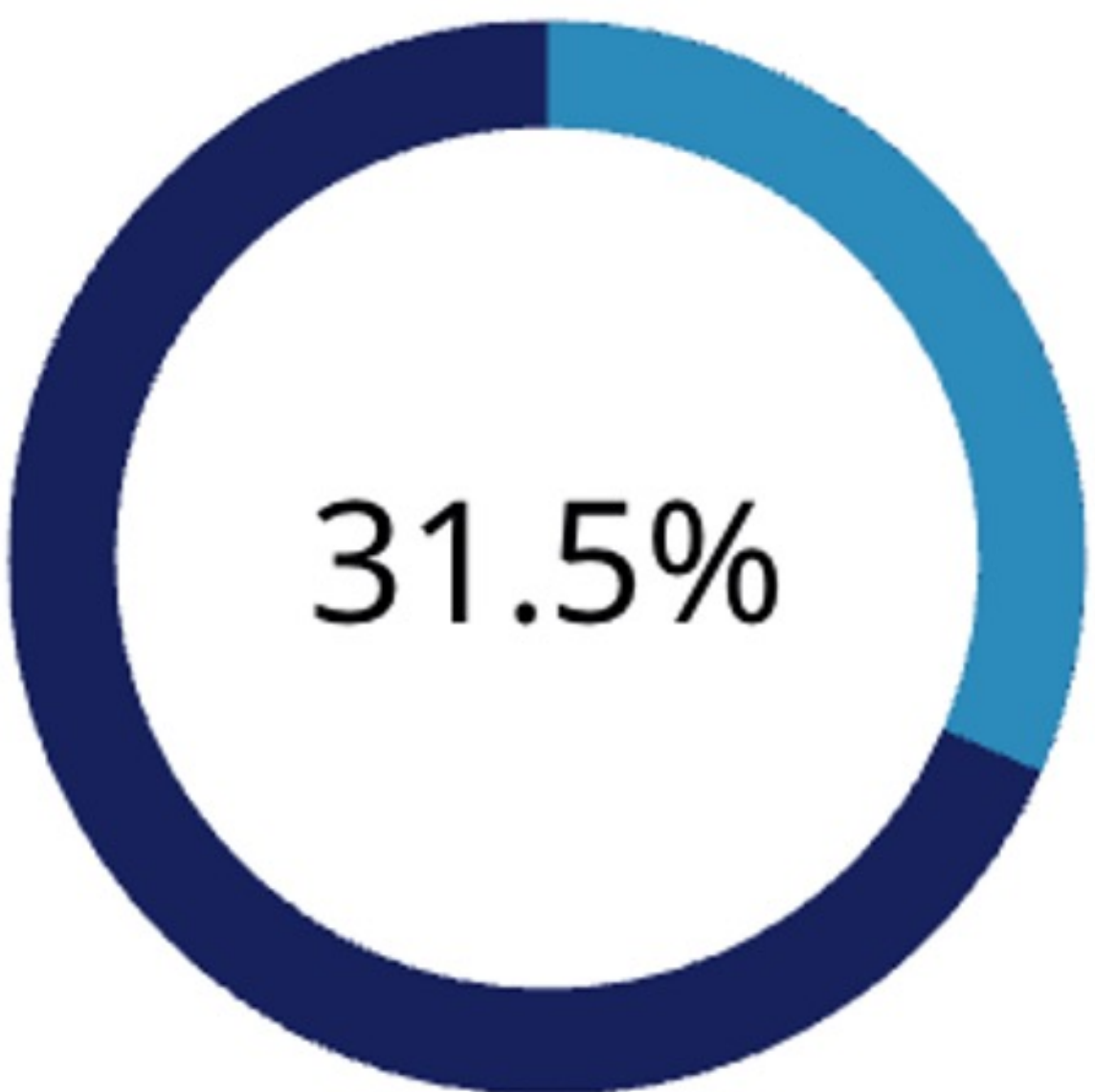
Median Age



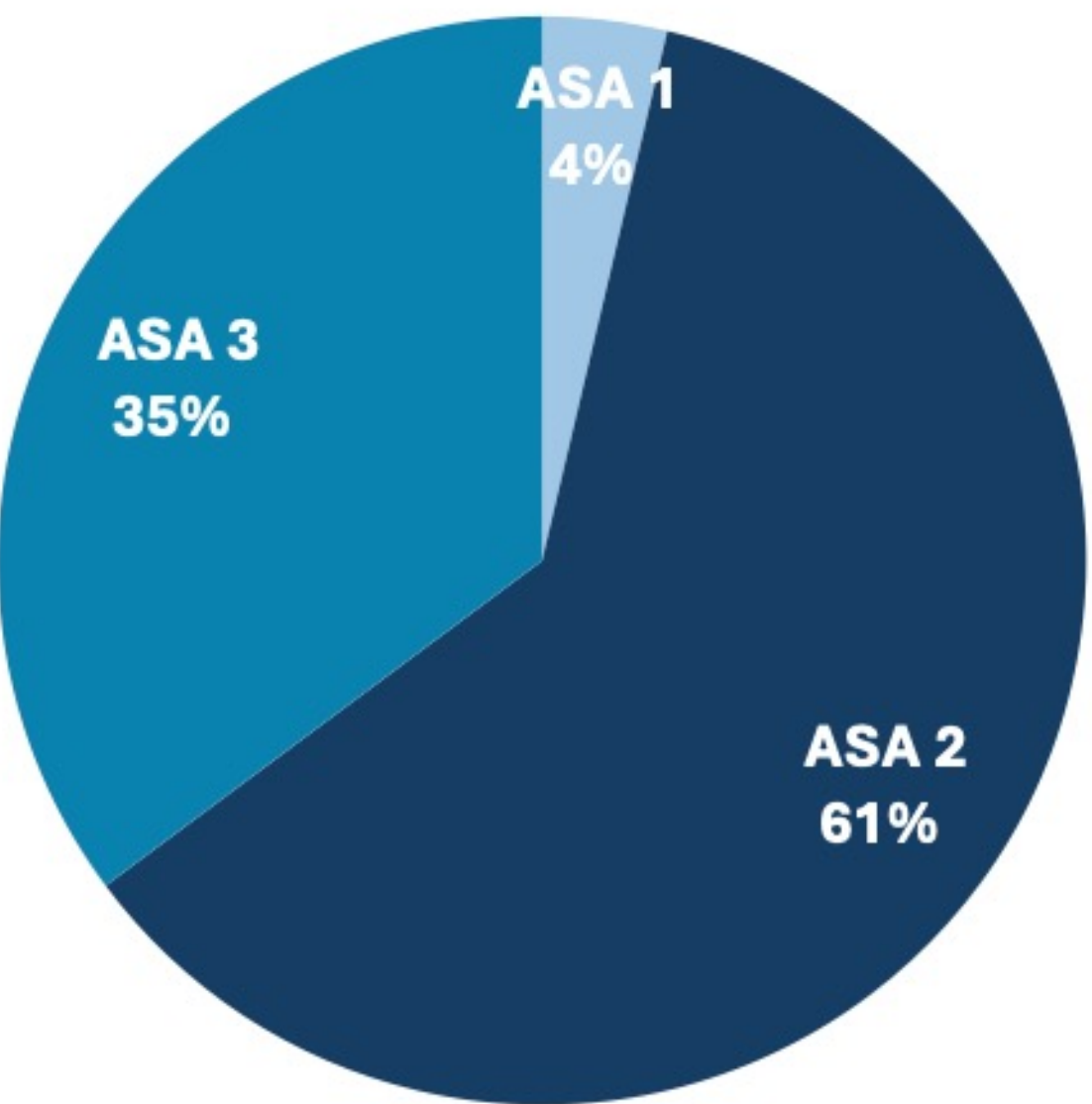
Percentage of Diabetic Patients



Percentage of Smokers



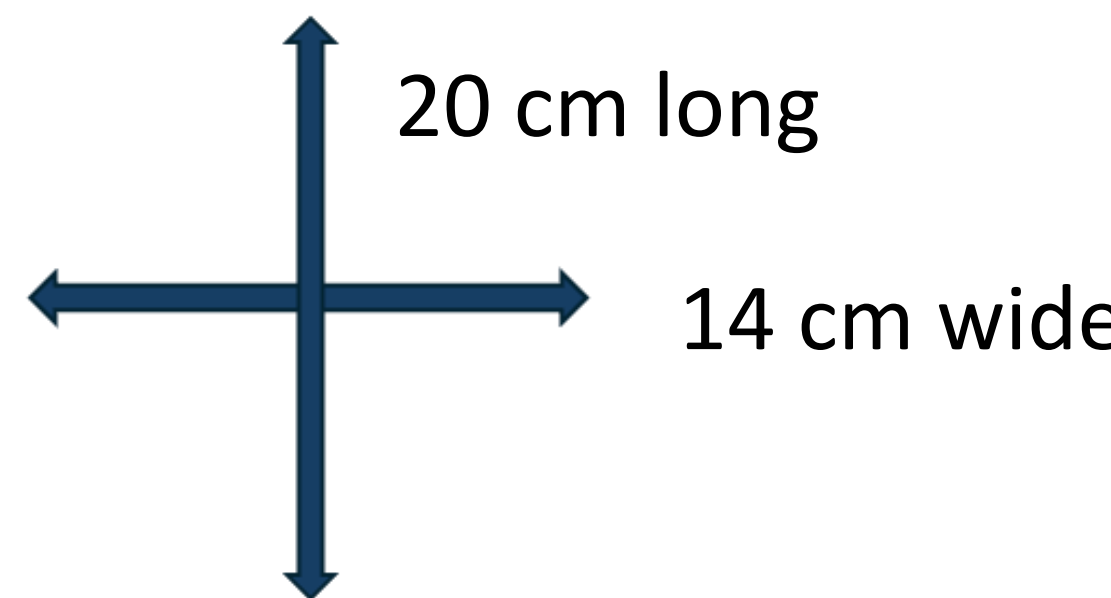
Percentage of Patients by ASA Physical Status



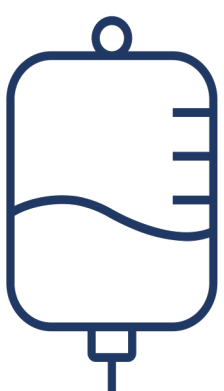
High risk cases

All patients are mVHWG class 3	Wound class	n (%)
	CDC class 1	15 (27.8%)
	CDC class 2	16 (29.6%)
	CDC class 3	3 (5.6%)
	CDC class 4	20 (37.0%)

Median Fascial Defect



Postoperative Results



Post op day 1 mean serum levels of the antibiotics:
Gentamicin 1.4 ± 0.87 mg/L
Vancomycin 3.5 ± 0.87 mg/L.



Postoperative surgical site infections in 29.6% of patients
superficial surgical site infection: 14.8%
mesh infections: 14.8%,
none of the biologic mesh was explanted

- Median time to infection was 34 days (range: 7 -77 days)
- Hernia recurrence rate was 7.4% with a median follow-up of 24 months (range: 5-90 months)

Conclusion

- In contaminated incisional hernia repairs, CSAB provided local antibiotic delivery without systemic toxicity.
- Surgical site and mesh infection rates were acceptable, none of the biologic porcine submucosa meshes were explanted, and hernia recurrence rate was low.
- Further studies with randomization should be considered.