Failure to rescue after RPS surgery: a root cause analysis

RESAR Study Update

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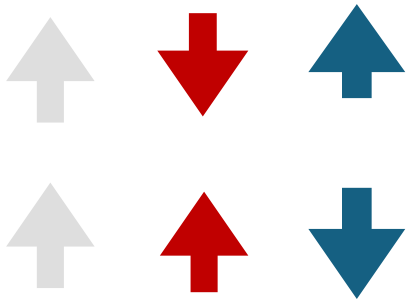
Failure to rescue after RPS surgery

Background

Multi-institutional retrospective series
Major complications: 16-24%
Reoperation: 6-12%
30-day mortality: 1.3-3%

Complications

Failure to rescue
Patient death after potentially treatable complications



Centers frequently exposed to high-risk or complex procedures may be more experienced in early recognition and response to complications

Study objectives

Primary aim

- Examine root causes of FTR (defined as the main contributing factor(s) leading to 90-day postoperative death) in patients undergoing resection of primary RPS

Secondary aims

- Frequency of postoperative complications
- Prognostic role of clinical / treatment variables on morbidity & FTR
- Relationship between complication rates and FTR rates, according to center characteristics
- Evaluate the role of the TARPSWG surgical complexity score (pRPS-SCS) as predictor of 90-day postoperative mortality

Design & methods

Case control design

- Identify 90-day postoperative death cases

FTR group

- Individual root-cause analysis of FTR causes
  Modified Ghaferi model
- Categorization/clustering of FTR causes

Controls - Complication rescue group (CR group)

- No major complications (NMC group), Clavien Dindo ≤ 2
- Clavien Dindo 3a/b (CD3 group)
- Clavien Dindo 4a/b (CD4 group)

FTR case matching to 2 controls per group (1:6)

- Age, sex, BMI, pRPS-SCS

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Inclusion criteria

- > 18 years old
- Primary RPS resection / completion surgery for recent incomplete resection
- Surgery at RESAR center from Jan 2017 - Dec 2024
- Confirmed histology diagnosis of STS
- 90 days minimum follow-up after surgery

Exclusion criteria

- **Recurrent / metastatic RPS**

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- **Nov 2024**
  Study proposal presentation at CTOS
- **Dec 2024**
  Feedback from RESAR Governance Committee
- **Apr 2025**
  Opt-in open to RESAR participating centers
- **Aug 2025**
  Ethics Committee / Data Usage Form approval
- **Sep 2025**
  Elegibility screen
  Individual centers contacted
- **Oct 2025**
  Research meeting

- Center participation and additional data fields compliance
- Low number of events
- R2 resections included
- Ethics not including root cause analysis
- Center variability in postop pathways
- Place of death / hospital access included in analysis

1. Additional data fields
2. Update follow up (deadline Oct 31st, 2025)

2567 RESAR patients
47 Clavien-Dindo 5 (FTR cohort)

1. Cases with incomplete diagnosis / follow-up identified
2. Queries to PIs sent

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Currently:

- 26 participating centers

Institution	City	Local PI(s)
Winship Cancer Institute, Emory University	Atlanta	Ken Cardona
Hospital Sant Pau	Barcelona	Jose Antonio Gonzalez Lopez
Queen Elizabeth Hospital Birmingham	Birmingham	Samuel Ford
Brigham and Women's Hospital/Dana-Farber	Boston	Chandrajit Raut
Roswell Park Comprehensive Cancer Center	Buffalo	Gary Mann
The Ohio State University	Columbus	Valerie Grignol
Leiden University Medical Center	Leiden	Jos van der Hage
Institute of Oncology Ljubljana	Ljubljana	Marko Novak
Mannheim University Medical Center	Mannheim	Jens Jakob
Peter MacCallum Cancer Center	Melbourne	David Gyorki
European Institute of Oncology	Milan	Elisabetta Pennacchioli
Tata Memorial Hospital	Mumbai	Shraddha Patkar / Mahesh Goel
Ludwig Maximilian University	Munich	Markus Albertsmeier
The Ottawa Hospital	Ottawa	Carolyn Nessim
Institut Curie	Paris	Sylvie Bonvalot and Dimitri Tzanis
Campus Biomedico	Rome	Sergio Valeri
Humanitas Cancer Center	Milan	Ferdinando Cananzi
UC San Diego	San Diego	Jason Sicklick
Royal Prince Alfred Hospital	Sydney	Peter Lee
Tel-Aviv Sourasky Medical Center	Tel-Aviv	Eran Nirzi
National Cancer Center Hospital	Tokyo	Shintaro Iwata
Maria Sklodowska-Curie Memorial Cancer Center	Warsaw	Piotr Rutkowski
Netherlands Cancer Institute	Amsterdam	Winan van Houdt
City of Hope National Medical Center	Duarte	William Tseng
Mayo Clinic	Jacksonville	Sanjay Bagaria
Vancouver General Hospital and BC Cancer/UBC	Vancouver	Trevor Hamilton

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Additional data points

Patient information

Collected via RESAR platform

- Index complication
- Detailed information on comorbidities
- Vascular reconstruction / graft complications
- If sepsis as complications: site of origin
- Setting (intraoperative/ICU/ward/home)
- Time from recognition to intervention
- Setting of initial care (referral center/peripheral hospital)
- Escalation of care
- Readmission / reintervention
- Secondary complications
- Setting of death if applicable
- Case submission to morbimortality or quality of care rounds

Center information

Virtual interview with center's PI / designated study contact

- Number of RPS per year
- Rapid response team
- Preoperative nutritional assessment
- Prehabilitation
- Teaching hospital
- Average nurse to patient ratio in the surgical ward
- Hospital size >200 beds
- Composition of the surgical team
  Number of staff surgeons and years of experience
- Existence and details of routine postoperative RPS patient pathway

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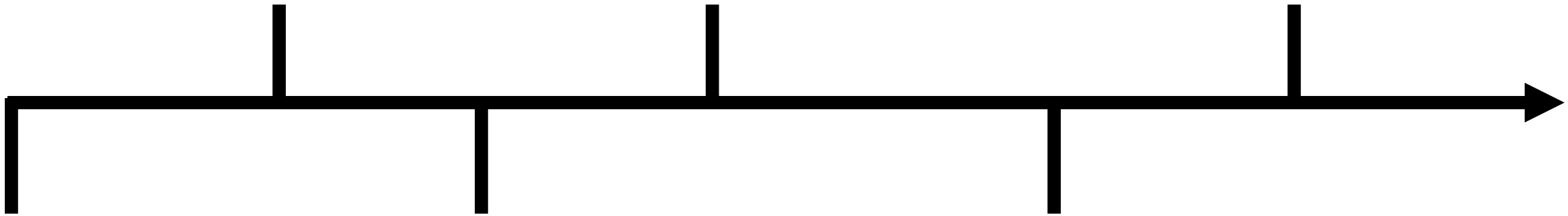
Next steps

Dec 2025
pRPS-SCS calculation
Control group selection
1:6 matching

May-Jun 2026
Data curation / analysis

Fall 2026
Manuscript preparation
Submission



Nov 2025
Finalize FTR group after updated follow-up

Jan-Apr 2026
PI contact
Additional data points collection
Center characteristics

July 2026
Preliminary results
CTOS submission

Thank you

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