

## **Project Title**

Colonic Stenting is the Bridge to Surgery Worth its Cost? A Single Asian Institution Experience with Cost Effectiveness Analysis

## **Project Lead and Members**

Project members: Michelle Shi Qing Khoo, Winson Jianhong Tan, Fung Joon Foo, Sharmini Su Sivarajah, Leonard Ming Li Ho, Darius Kang Lie Aw, Cheryl Xi Zi Chong, Jasmine Ladlad, Nathanelle, Ann Khoo, Cheryl Hui Min Tan, Frederick Hong Xiang Koh

## **Organisation(s) Involved**

Sengkang General Hospital

## **Healthcare Family Group Involved in this Project**

Medical

## **Applicable Specialty or Discipline**

Department of General Surgery

## **Project Period**

Start date: 19 April 2022

Completed date: Nov 2022

## **Aims**

To determine if colonic stenting is more cost effective than surgery.

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Conclusion**

See poster appended/ below

## **Project Category\*** *(refer file attached for more info)*

Care & Process Redesign

Value Based Care: Safe Care

Productivity: Cost Saving

## **Keywords**

Colonic Stenting

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# Colonic stenting – Is the bridge to surgery worth its cost?

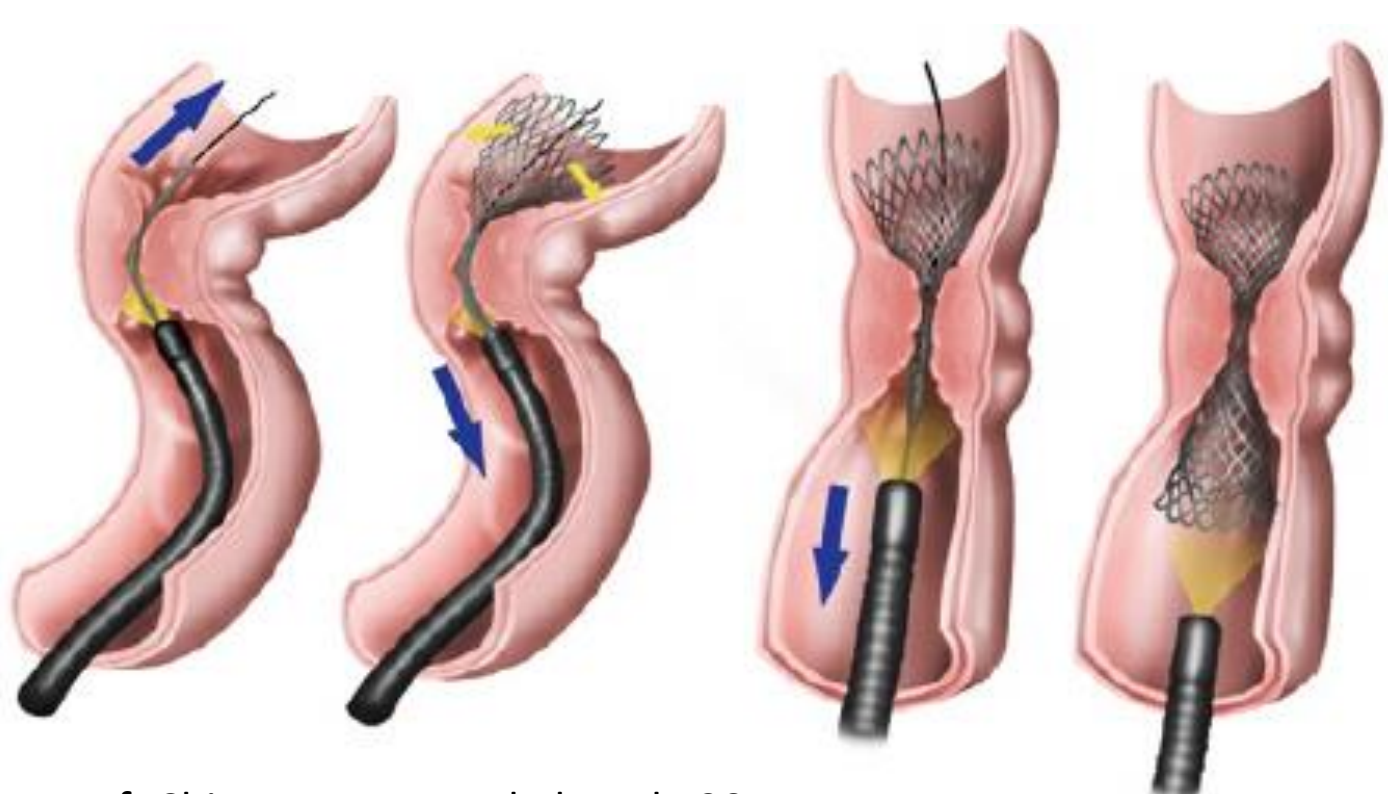
## A single Asian institution experience with cost-effectiveness analysis



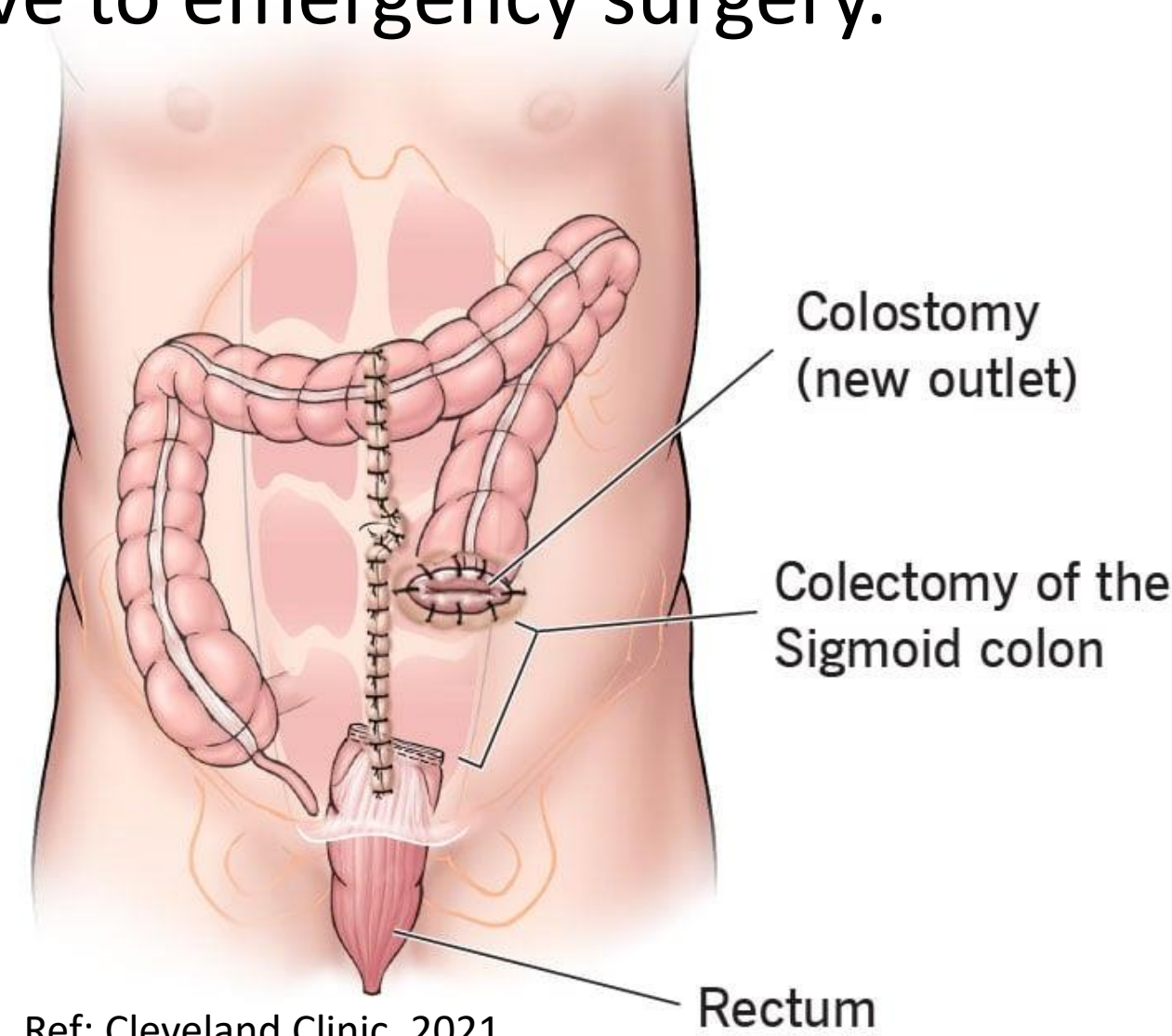
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### Introduction

In patients presenting with left-sided colonic obstruction, guidelines recommend stenting as a valid alternative to emergency surgery.



Ref: Chinswangwatanakul et al., 2014



Ref: Cleveland Clinic, 2021

Colonic stent deployed successfully in an obstructed lesion via colonoscopy.

VS

Emergency surgery requiring midline scar and colostomy post-operatively

### Benefits of Colonic Stenting in Obstructed Patients

1

Convert emergency surgery to semi-elective, avoid high anesthetic risks

2

Avoid stoma creation and subsequent reversal

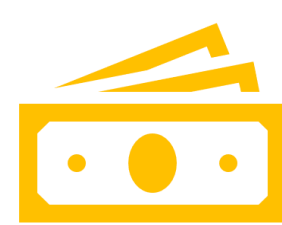
3

Avoid exploratory laparotomy – **no immediate surgery**

However there has been controversy with regards to clinical safety and efficacy of colonic stenting. In our single institution, we reviewed outcomes prospectively and performed a cost analysis on colonic stenting for acute colonic obstruction.

### Methods

Goal: to determine if colonic stenting is more cost-effective than surgery



Over a period from Apr 19 to Nov 22

Prospective cohort study

Endoscopic, surgical and financial data

#### Inclusion criteria

- Presenting with left sided colonic obstruction
- Underwent emergent colonic stenting

#### Exclusion criteria

- Eventually declined surgery in favour of expectant management

### Results

40 patients underwent stent insertion

11 patients had no surgery  
8 metastatic disease  
3 comorbid  
1 neoadjuvant

29 bridge to surgery

26 achieved technical success (89.7%)  
24 achieved clinical success (82.8%)

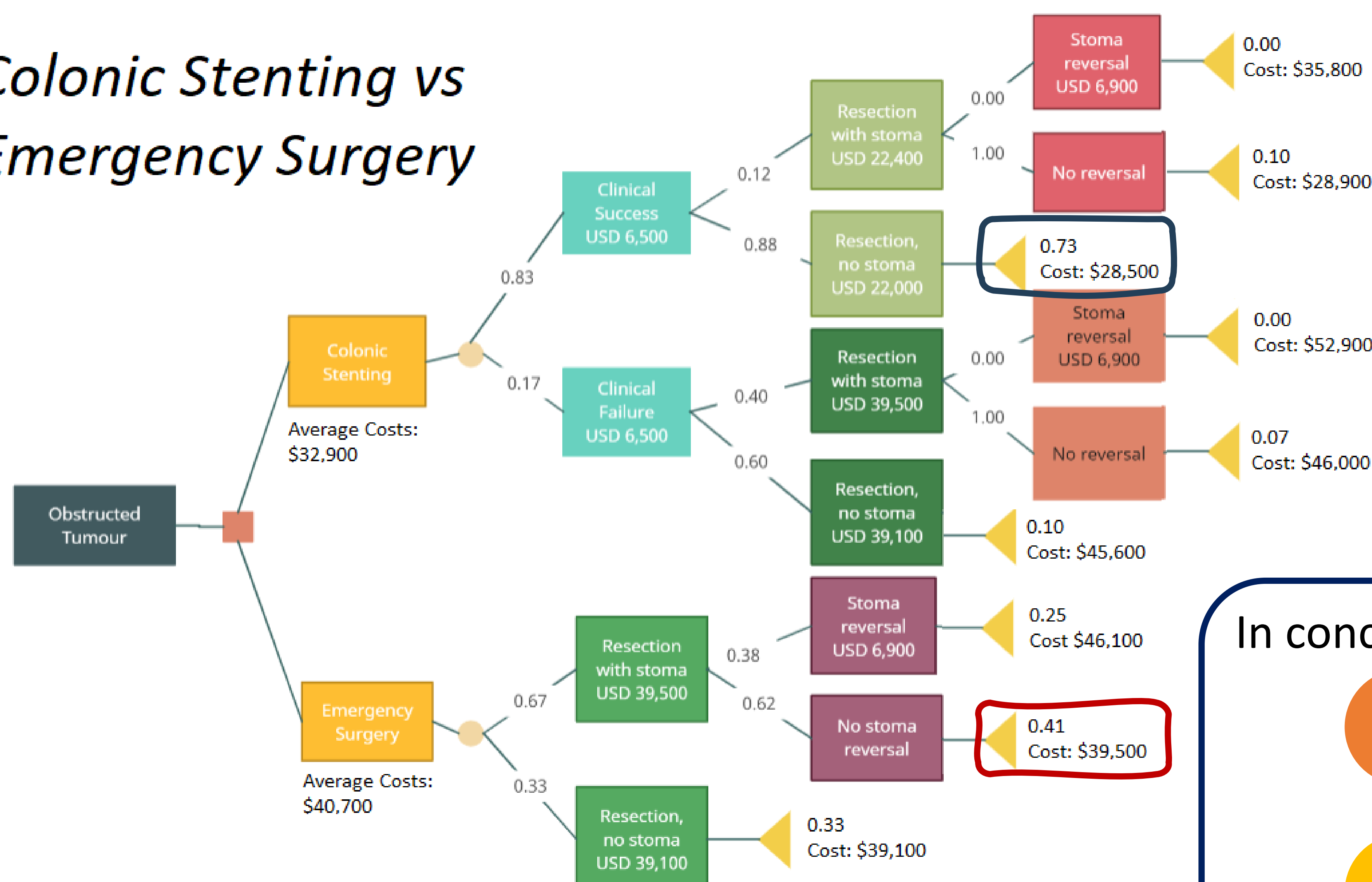
#### Patients who underwent colonic stenting

Median Age	66 (IQR 57 – 71)
Malignant cause of obstruction	27 (93%)
Length of symptoms (days)	2 (IQR 3-7)
TNM stage	
Stage I	0 (0%)
Stage II	17 (59%)
Stage III	6 (21%)
Stage IV	4 (14%)
Tumour location	
Transverse colon	1 (3%)
Splenic flexure	1 (3%)
Descending colon	8 (28%)
Sigmoid	19 (66%)

#### Outcomes

Stent complications	
Perforation	3 (10%)
Migration	0 (0%)
Time to surgery (range)	13 days (0-41)
Open vs Laparoscopic	8 (28%) vs 21 (72%)
Median procedure time (IQR)	226 (189-271)
Surgical complication	
I / II	1 (3%)
III	2 (7%)
IV	1 (3%)

### Colonic Stenting vs Emergency Surgery



When successful (83%), colonic stenting is **ALWAYS** more cost-effective than emergency surgery.  
**Overall incremental cost-effectiveness ratio 0.81, favouring colonic stenting**

In conclusion, colonic stenting has been shown to be



Safe



High rates of clinical success



Cost effective  
ICER < 1



Decrease in stoma rates