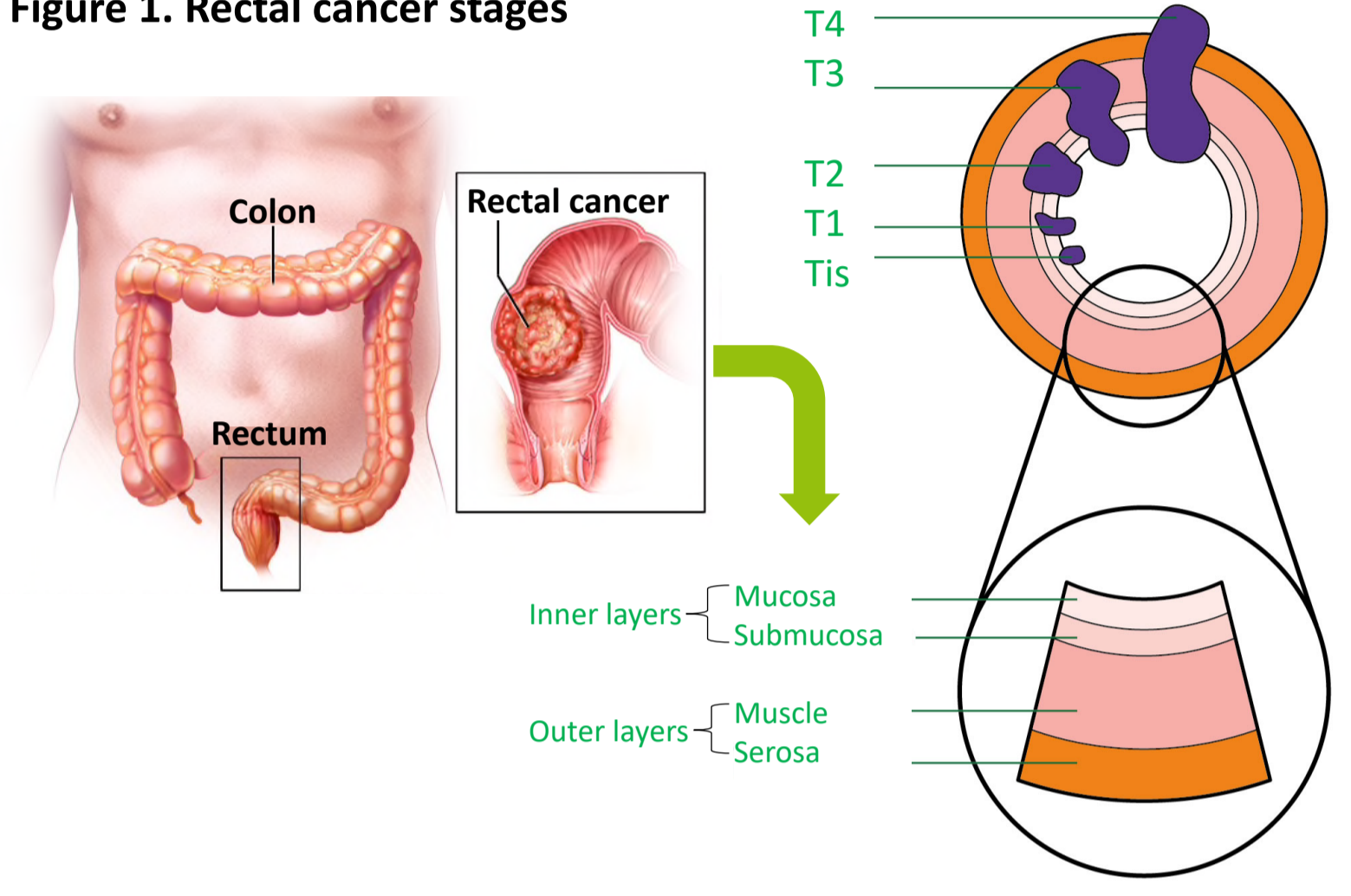


K Hardy, Mr F. Shaban, Mr P. Coyne

1. Introduction

Rectal cancer is a cancer of the last portion of the intestine. The intestine is made up of multiple layers of tissue which is important for staging the severity of the cancer. Rectal cancers can be split into; Tis, T1, T2, T3 or T4 depending on how many of these layers the cancer invades through.

Figure 1. Rectal cancer stages



Rectal cancer has an incidence of 14,000 cases per year in the UK, with early stage (T1) disease accounting for 17% of patients. Traditionally, treatment has been surgical removal of the tumour. However, other treatments may be better for patient outcomes, both when considering complications from the procedure and recurrence of the cancer.

2. Methods

The project involved a retrospective data collection of 390 patients in the North East who underwent treatment for their T1 rectal cancer between 2010-2017.

- AIMS:**
1. What are the percentages of treatments performed?
 2. Is there a change in cancer recurrence and survival across different treatments?
 3. Is any treatment associated with increased post-operative complications?

Treatments investigated

Figure 2. Endoscopy

A flexible camera (Endoscope) is inserted into the patients rectum. A hollow tube in the scope allows instruments to be passed into the rectum for removal of the tumour.

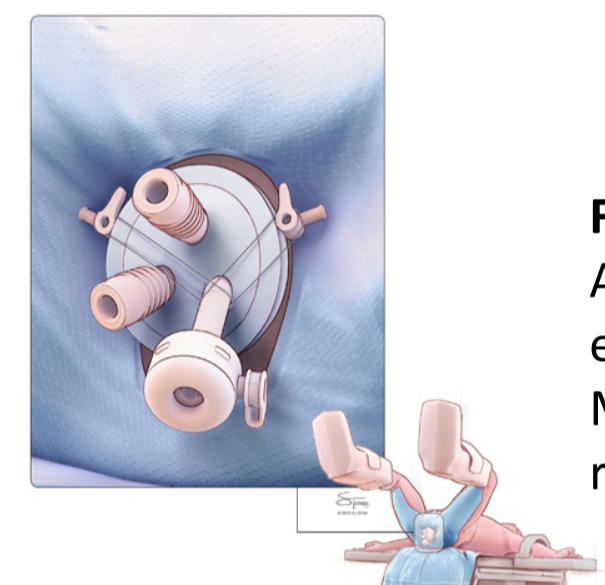


Figure 3. TEMS/TAMIS

A port is inserted into the anus, through which gas is applied to expand the rectum and a camera inserted to visualise the cancer. Multiple instruments can then be inserted into the port for removal of the cancer.

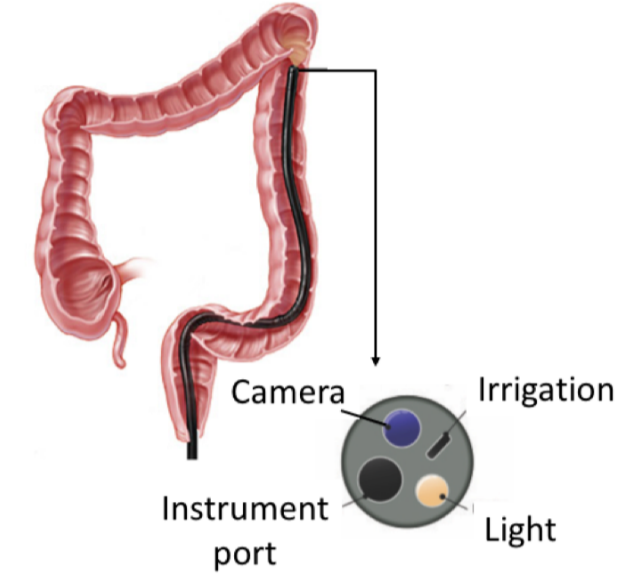
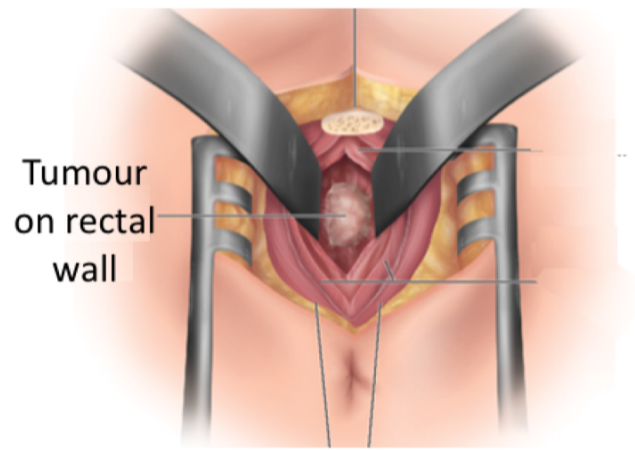


Figure 4. Transanal resection

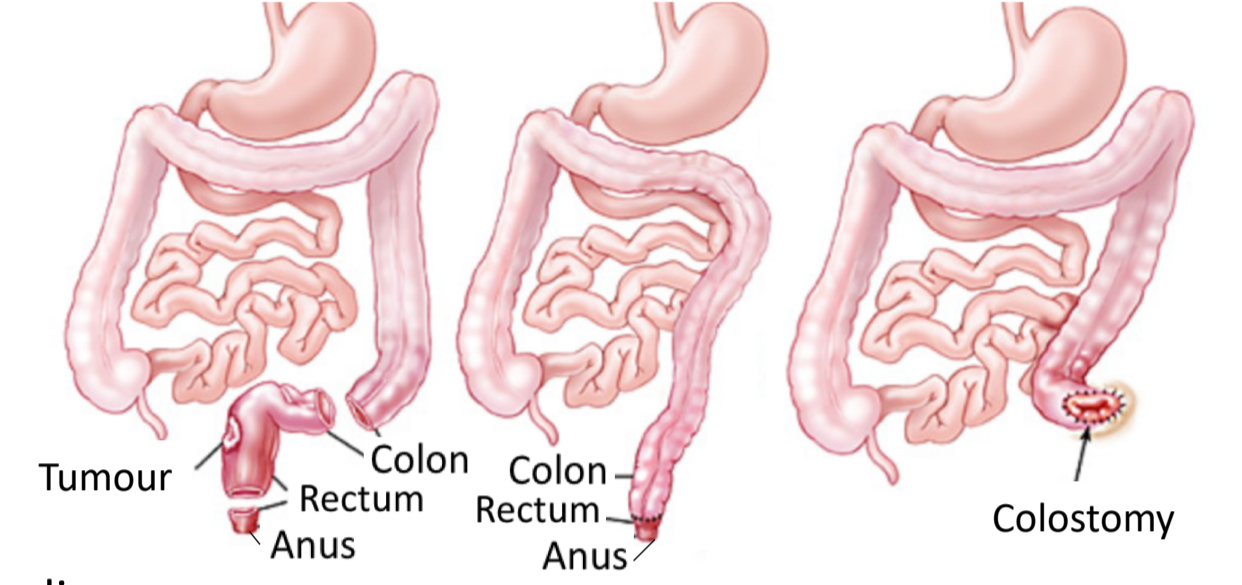
Generally performed for cancers near the anus opening. The surgeon expands the rectum using a retractor to allow direct visualisation of the cancer. The cancer is then removed using various techniques such as cutting or burning the tissue away.



Surgical resection

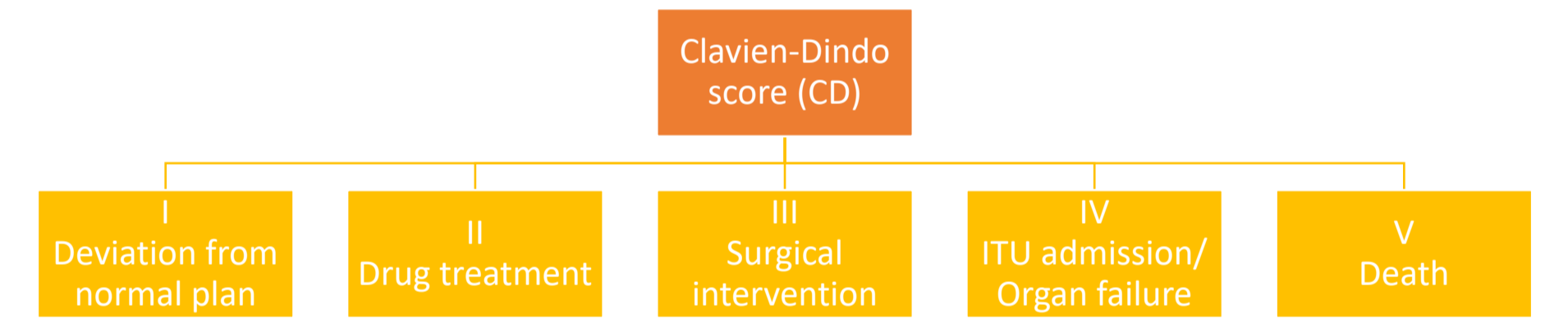
Unlike the other procedures, surgery requires incisions to be made in the abdominal wall. There are multiple surgical techniques depending on where in the rectum the cancer is. The cancer may be removed and the two ends of bowel reconnected, or the bowel attached to the abdominal wall to form a colostomy.

Figure 5. Methods of surgical resection



Complication grading

Adverse events occurring within 30 days of the procedure were documented and given a score 1-5 based on the Clavien-Dindo scoring system. This looks at the outcome of the complication as a marker of severity.



3. Results

What are the percentages of treatments performed?

- **Surgery** is the **most** commonly performed procedure (44.1%)
- **Transanal** is the **least** common (1.5%)

Is there a change in cancer recurrence and survival across treatments?

- Local recurrence – does the cancer come back at the same site?
- There **IS A LINK** between the first procedure performed and local recurrence (P=0.004)
 - Recurred **quickest in transanal** procedures (85 months)
 - Recurred **slowest in Endoscopic** procedures (104.5 months)

Metastasis– does the cancer spread or come back at another site in the body?

- There **IS A LINK** between the first procedure performed and metastasis (P=0.031)
- Metastasis is **quickest in TEMS/TAMIS**
- Metastasis is **slowest in Endoscopic** procedures

There is no link between primary procedure and overall 10-year survival (P=0.373)

Is any treatment associated with increased post-operative complications?

- **Surgery had the most** complications
- **TEMS/TAMIS** was associated with **more severe complications**
- **Endoscopy had the least** complications

Results

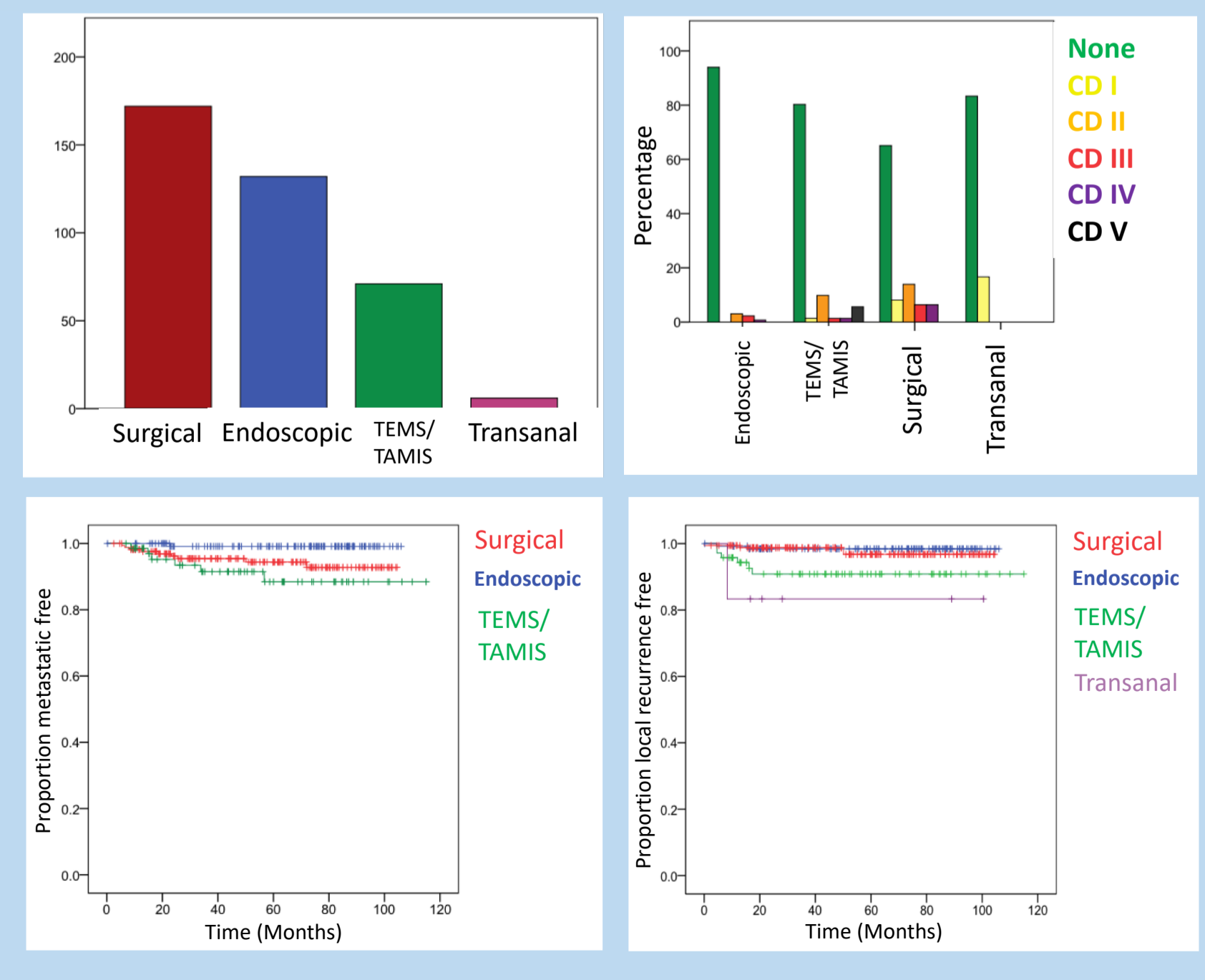


Figure 6. Top left: primary procedures performed, Top right: complications, Bottom left: metastasis, Bottom right: local recurrence

4. Conclusion

The project findings suggest that the first treatment performed is linked to changes in cancer free time post-operatively, with endoscopic treatments providing the longest cancer free time after initial treatment. There are also differences between treatments and post-operative complications, again with endoscopic management resulting in the fewest adverse events.

Both of these outcomes suggest endoscopic treatment may be the best option for patients with selected T1 rectal cancers. However, there is no change in overall survival when looking at all treatments provided.

These findings will be used to establish a best practice guideline for future patient management in colorectal surgery.

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