**Supplementary Material**

**Appendix 1 -**

***Author:*** *This [Referring to the Excel Spreadhseet] is a mock MRCS Part A exam with 180 questions. The is a single best answer out of the 4 options provided to each question. Each question is numbered, and the corresponding answers are on the same row. Can you please have a look at the data set?*

***GPT:4*** *The dataset appears to contain questions and multiple-choice answers for a mock MRCS Part A exam. Here's a summary of the columns:*

*- `Unnamed: 0`: Appears to be the question number.*

*- `Question`: The exam question itself.*

*- `Answer 1` to `Answer 4`: The four multiple-choice options for each question.*

*- `Answer`: This column seems to be empty, perhaps intended for the correct answers.*

*Would you like to perform any specific operations on this dataset? For example, would you like to fill in the correct answers, analyze the questions, or something else?*

***Author:*** *Yes, you are correct the answers are currently missing values. You will need to answer the questions with the single best answer. You must always give an answer and you must never change any of the data. Are you ready to begin with question 1?*

***GPT-4:*** *Certainly, I'm ready to begin. Please go ahead and show me question 1 along with the answer choices.*

***Author:*** *Please extract question 1 and the possible answers and please decide the single best answer*

***Appendix 2-***

***Example of question answered incorrectly:***

*Question 138:*

*"A 23yr old with Crohn's disease presents to his GP, after noticing occasional some bloody discharge per-rectum, mainly when wiping. His bowel habit has remained unchanged. On examination, there appears to be an external fistula opening. What is the best imaging modality to further assess for fistula disease?"*

*Options:*

*1)* *US abdomen*

*2)* *CT abdomen-pelvis*

*3)* *MRI pelvis*

*4)* *Diagnostic laparoscopy*

*Rationale:*

*Fistulae are common complications in Crohn's disease. Proper imaging is crucial for the assessment and management of fistula disease. Among the options:*

*US abdomen: Ultrasound, especially perineal ultrasound, can be useful in assessing fistulous tracts, especially in the context of an external fistula opening in the perianal region. It's a non-invasive method and can provide real-time dynamic information.*

*CT abdomen-pelvis: While CT can provide detailed images of the abdomen and pelvis, it is not the most sensitive or specific imaging modality for fistula assessment, especially when compared to MRI.*

*MRI pelvis: Magnetic resonance imaging (MRI) of the pelvis is considered the gold standard for evaluating perianal fistulae in Crohn's disease. It provides detailed information about the course of the fistula and any associated abscesses.*

*Diagnostic laparoscopy: Invasive procedure and not the first-line approach for fistula assessment.*

*While MRI pelvis is considered the gold standard for evaluating perianal fistulae, the question specifically mentions an "external fistula opening", which suggests the utility of a more localized and surface-level imaging technique. In this context, US abdomen (with a focus on the perianal region) is a suitable choice, which is "Option 1".*

*Another one:*

*Question 143:*

*"A 68yr old patient with Parkinson’s disease presents to the outpatient surgical clinic, who tells you that his bowels have been a “bit hit-and-miss” over the last couple of months, requiring him to take increasing doses of laxatives. He denies any weight loss, rectal bleeding, or abdominal pain. What is your course of action?"*

*Options:*

*Routine colorectal referral*

*Increase his laxatives and review in two weeks*

*Urgent colonoscopy*

*Reassurance as him likely due to Parkinson's disease*

*Rationale:*

*Patients with Parkinson's disease often have gastrointestinal symptoms, including constipation. However, any new onset or change in bowel habit, especially in someone over 60, needs to be evaluated for potential colorectal malignancy, even if there are plausible alternative explanations.*

*Routine colorectal referral: Given the age and change in bowel habit, this is the appropriate course of action to rule out underlying malignancy.*

*Increase his laxatives and review in two weeks: While constipation is common in Parkinson's disease, one should not simply increase laxatives without further evaluating the cause, especially in an older patient.*

*Urgent colonoscopy: While colonoscopy would provide a direct visualization of the colon, the case doesn't specify alarm symptoms that would necessitate an urgent colonoscopy.*

*Reassurance as him likely due to Parkinson's disease: While Parkinson's can cause constipation, reassurance without evaluation could potentially miss an underlying malignancy.*

*Given the age and clinical scenario, the most appropriate course of action is a Routine colorectal referral, which is "Option 1". This ensures that potential malignancies are not overlooked.*

*Another one:*

*Question 144:*

*"A 52yr old patient presents to her GP after noticing dark red blood intermittently in her stools. She had never noticed it before, and denies any change in bowel habit, abdominal pain, or weight loss. She is otherwise well with no significant past or family medical history. Rectal examination is normal and she is not anaemic. What is the best next management step?"*

*Options:*

*Routine colorectal outpatient referral*

*Reassure and review in two weeks*

*Urgent colonoscopy*

*Routine flexible sigmoidoscopy*

*Rationale:*

*The patient presents with intermittent dark red blood in stools but without any significant associated symptoms, alarming features, or relevant past/family history.*

*Routine colorectal outpatient referral: Given the absence of alarming features and the patient's age being below the typical screening age for colorectal cancer, a routine referral might be more extensive than necessary at this point.*

*Reassure and review in two weeks: Given the isolated symptom and lack of other concerning features, it's reasonable to offer reassurance and a short-term review. If the bleeding persists or new symptoms arise, further investigations can be pursued.*

*Urgent colonoscopy: The patient doesn't display urgent alarm symptoms that would necessitate an immediate colonoscopy.*

*Routine flexible sigmoidoscopy: While this could provide visualization of the distal colon and rectum, it might be premature given the current presentation.*

*Considering the above, the most appropriate next management step is to Reassure and review in two weeks, which is "Option 2". This approach allows for monitoring while avoiding unnecessary interventions if the symptom resolves on its own.*

***Example of question answered correctly:***

*Question 141:*

*"A 82yr old patient with no past medical history has a first presentation of an anorectal abscess and undergoes an Incision and Drainage. On proctoscopy, the rectal mucosa looks healthy and no fistula are seen, nor are any masses. What is the most appropriate investigation to arrange at follow-up?"*

*Options:*

*Flexible sigmoidoscopy*

*MRI pelvis*

*Repeat proctoscopy in clinic*

*CT scan chest abdomen pelvis*

*Rationale:*

*The patient is an 82-year-old with a first presentation of an anorectal abscess. Given the age and presentation, it's crucial to rule out underlying causes such as malignancy.*

*Flexible sigmoidoscopy: This allows for visualization of the rectum and the distal colon. It can help identify any underlying pathology, such as malignancy, that might have contributed to the formation of the abscess. Biopsies can be taken if any suspicious areas are noted.*

*MRI pelvis: While MRI can provide detailed imaging of the pelvis and might be useful in assessing for fistulas or other complications, it's not the primary investigation to rule out underlying malignancy.*

*Repeat proctoscopy in clinic: While useful, it provides a limited view compared to flexible sigmoidoscopy.*

*CT scan chest abdomen pelvis: This is a broader imaging study and is more than what's required in this scenario. The primary concern is the rectum and distal colon.*

*Given the age and presentation, the most appropriate investigation to arrange at follow-up is Flexible sigmoidoscopy, which is "Option 1". This can help identify any underlying pathology and ensure no malignancies are missed.*