

## CAT Assignment (Critically Appraised Topic)

Title: The Accuracy of Clinical Examination in the Diagnosis of Rectal Intussusception

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1. Clinical Question: Will physical examination or defecography result in better detection of rectal intussusception in patients with constipation?

PICO Parts:

P – Constipated patients

I – Physical examination for rectal intussusception

C – Defecography for rectal intussusception

O – More accurate diagnostic test

2. Search Strategy:

a. Database(s) searched: Ovid Medline

b. Keyword Search Terms used: N/A

c. MeSH Search Terms used: “Intussusception/diagnosis [MeSH]” AND limit to: English language, humans and clinical trial.

3. Methods Description (setting, population, sample size, study design):

**Setting:** Department of Surgical Sciences, University Hospital, Uppsala, Sweden and date unknown.

**Population:** Three colorectal surgeons in the department.

**Sample size:**

- Sample size: 127 patients
- Inclusion criteria: Patients with constipation.
- Exclusion: The number of patients excluded is not stated. Patients with secondary causes of constipation were not included in the study.
- Sample description:
  - Practices: No control group without symptoms was used.
  - Participants: The sample included 127 consecutive patients (113 females and 14 males) with a complaint of constipation. The median age was 51, and the range of ages was 21-81. The duration of constipation symptoms ranged from 0.5 to 60 years (median 10). All patients in the sample had tried supplemental fiber without acceptable results.

**Study design:** The authors did not state the type of study design, but this study used a cross-sectional survey.

4. Methods Interpretation (Validity):

- a. Was there an independent “blind” comparison with a reference standard?
- b. Did the sample include an appropriate spectrum of patients to whom the diagnostic/screening test will be applied in clinical practice?
- c. Did the results of the diagnostic/screening test being evaluated influence the decision to perform the reference standard?
- d. Were the methods for performing the diagnostic/screening test described in sufficient detail to permit replication?

a. Yes. The clinical examination was done prior to all defecographies (reference standard). The defecographies were performed after clinical examination and were single-blinded so that the investigators did not have any prior knowledge of the clinical examination.

b. The study included the appropriate number of male and female patients to reflect the clinical predominance of rectal intussusception (90% female and 10% male). The history of constipation and its secondary causes were also appropriately included.

c. The reference standard performed was blinded to the diagnostic test, done by different clinicians and was not influenced by any clinical examination results.

d. The preparation of the patient for the defecography and the clinical exams was described adequately. The software and statistical analyses used were also listed. In order to better replicate the study, we would like more information regarding the assumptions made for the statistical analysis and any contraindications related to the two exams performed.

5. Results:

Of the 127 patients, overall clinical assessment (digital exam, rectoscopy and expulsion test) only detected 38 patients with intussusception whereas defecography, the common diagnostic method, diagnosed 71 patients with some degree of rectal intussusception. Clinical assessment correctly concluded that 43 of 56 patients did not have intussusception. Longer intussusceptions (> 3 cm) and intra-anal intussusceptions had greater clinical assessment diagnostic accuracy than shorter intussusceptions (< 3 cm). The overall clinical judgment was related to a longer intussusception ( $p = 0.0002$ ). There were no significant differences between diagnosis with digital exam, rectoscopy, or expulsion test, and there were no significant differences between different investigators. Clinical diagnosis of rectal intussusception was unrelated to stool frequency or main symptoms of constipation. Instead, low anal resting pressure and obtuse anorectal angle during evacuation were related to clinical and defecographic diagnosis of intussusception.

6. Translational applications (How does this study apply to your patients?):

This study was adequate but lacked statistically significant results. While it was found that 43 of the 58 patients without an intussusception were correctly diagnosed by clinical examination, there was poor agreement among patients with an intussusception of less than 3 cm. The study could still be considered in the use of diagnosing intussusceptions of larger than 3 cm, as 13 of the 18 patients (72%) were correctly diagnosed. The results of the study do not prove to be accurate enough to use in clinical settings. However, I would replicate the study in the United States, as the patients may have different characteristics, in relation to intussusception, than the population in the study.

7. Reference: Karlbom U, Graf W, Nilsson S, Pahlman L. The accuracy of clinical examination in the diagnosis of rectal intussusception. *Dis Colon Rectum*. 2004;47(9):1533–1538. DOI: 10.1007/s10350-004-0626-8.