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SHORT REPORT

Defecography in symptomatic older women living at home

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Abstract

Background: complaints of defecation disorders in older patients living at home is an emerging problem. Little is known about radiological examination of this population.
Objective: this study aimed to analyse the yield of defecography in women older than 75 years, living at home and complaining of defecation disorders.
Design and settings: prospective study of patients referred to a radiology department in a tertiary-care medical centre in Rouen, France.
Subjects and methods: 52 women (mean age: 78, range: 75–93) complaining of constipation, faecal incontinence or pelvic pain underwent defecography. Defecography was performed after intake of a barium meal and vaginal opacification. Radiographs were analysed accordingly with the established criteria.
Results: defecography showed perineal descent in 27 patients, rectocele in 29, intussusception in 33 and enterocele in 14. A combination of abnormalities was found in 40 women. Only 3 studies were normal. There was no significant association between symptoms and pelvic disorders revealed by defecography.
Conclusions: defecography in symptomatic women aged 75 years and over did not raise any technical difficulty. It revealed a 77% rate of abnormalities, but there was no relationship between the symptoms and the detected abnormalities.

Keywords: *faecal incontinence, defecography, rectum abnormalities, pelvic floor disorders, elderly*

Introduction

Constipation, faecal incontinence and pelvic pain are common symptoms in older women. Such symptoms require meticulous evaluation whatever the age of the patients [1, 2]. Therapy can be effective for patients' complaints and help them to lead a fuller life [1]. These symptoms represent a major problem in institutionalised patients but they have also to be taken into account in women living at home [2]. The demands for care for pelvic floor abnormalities is expected to grow in the near future [3].

Radiographic dynamic rectal examination (defecography) is a valuable method to assess evacuation disorders [4]. This method provides information on anorectal and pelvic floor function and offers the possibility of visualising anatomical abnormalities [4, 5]. This radiological investigation is often necessary to efficiently evaluate defecation disorders after clinical examination.

The aim of this study was to assess defecographic findings in women aged 75 years or older living at home and complaining of defecation disorders and/or pelvic pain.

Patients and methods

Patients

In one year, 52 women aged 75 years and older (range: 75–93, mean: 78) were consecutively evaluated in our

institution. All were non-institutionalised urban women. They were all symptomatic and requesting evaluation. They were first referred by their general practitioner to a gastroenterologist (practising in the private or public health care system) and secondly by the gastroenterologist to our department of radiology. These women complained of constipation, pelvic pain or faecal incontinence alone or in combination. Constipation was defined as less than two bowel movements per week. Faecal incontinence was defined as an uncontrolled loss of liquid or solid stool corresponding to grade C and D of Park's classification [6]. Previous proctological surgery had been performed in 2 patients (haemorroidectomy). Hysterectomy was the most frequent surgical procedure ($n=14$). Forty-eight women had given birth (vaginal delivery) and 41 were multiparae. Six of these patients remembered having a history of a difficult labour and two a forceps-assisted delivery. A clinically observed gynaecological prolapse was observed in 19 women. Obesity (body mass index more than 27) was present in 4 individuals and no patient suffered from severe pulmonary or cardiac disease at the time of the study.

All had defecography. Informed consent was obtained before the examination. Precise explanations of the entire procedure were given by the radiologist prior to defecography.

Defecography

We applied a standardised protocol to perform and evaluate all defecographies. All patients received a barium meal 1.5 h before being examined so that the pelvic loops of the small bowel appeared opaque, to facilitate detection of an enterocele. A lateral X-ray was first performed for bone and pelvic loop visualisation. A thick barium paste was injected into the vagina, to identify the position of the posterior vaginal wall. Then 150 ml of thickened and viscous high-density barium contrast medium was injected in the rectum with the patient in the left decubitus position. A radiopaque marker was placed close to the anus, to assess the anorectal junction.

Films were taken in a standing lateral position during the following manoeuvres: at rest, at voluntary and maximal contraction of the sphincter and pelvic floors ('squeeze'), at straining without defecation ('strain'). The pubococcygeal line was defined and the distance between this line and the anorectal junction (radiopaque marker) was determined. Finally patients sat on an upright commode attached to the footboard of the fluoroscopy table (a modified toilet) and one frame per second films were taken during expulsion and after completion of defecation at maximum straining.

Pathological patterns [4, 5] were defined as follows. Pelvic floor descent was assessed from lateral views. Fixed perineal descent (at rest) was defined as a >3.5 cm distance between the anorectal junction and the pubococcygeal line. Dynamic perineal descent was defined as a >3 cm distance between the anorectal junction at straining and its resting position. Rectocele was defined as a >3 cm outpouching of the anterior rectal wall ahead of rectovaginal septum, persisting on incomplete evacuation. Intussusception was defined as an invagination of the rectal wall, either intrarectal, intraanal or an external prolapse of the whole circumference. Enterocele was defined as a herniation of the small bowel between the posterior vaginal wall and the anterior rectal wall.

Statistical analysis

Chi-square tests were used. Less than 0.05 P was regarded as significant.

Results

Indications for investigation included constipation (isolated in 2 patients, one of multiple complaints in 39), pelvic pain (isolated in 4 patients, one of multiple complaints in 41) and faecal incontinence (isolated in 2 patients, one of multiple complaints in 21). Defecography was satisfactorily performed in all women and all examinations were fully analysed according to the above criteria.

Forty-nine patients had one or more than one pathologic finding and only three studies were normal. Defecography showed perineal descent in 27 patients (52%), rectocele in 29 (55%), intussusception in 33 (63%) and enterocele in 14 (27%). In 9 patients there was only one identified abnormality: 6 intussusceptions, 2 rectoceles and 1 perineal descent. An association of abnormalities was found in the 40 other women. Fifty five percent of patients had a rectocele, 93% of whom had it in combination with other disorders. Sixty three percent of patients had intussusception and 81% of them also had one, or more than one, other abnormality. The most frequent combinations were rectocele and intussusception ($n=7$), perineal descent, rectocele and intussusception ($n=7$), intussusception and perineal descent ($n=7$) (Table 1). In only one woman were all the abnormalities combined. No patient had the combination of perineal descent, intussuception and rectocele.

There was no correlation between the prevalence of enterocele, intussusception, perineal descent and rectocele with the presence or absence of faecal incontinence, constipation or pelvic pain (Table 2).

Discussion

Defecography is a minimally invasive, safe, and simple procedure. A standardised protocol can provide valuable information about the dynamics of defecation [7]. With

Table 1. Results of defecographies

Isolated abnormality $n=9$	
Intussusception	6
Rectocele	2
Perineal descent	1
Associated abnormalities $n=40$	
Rectocele + intussusception	7
Rectocele + intussusception + perineal descent	7
Intussusception + perineal descent	7
Rectocele + perineal descent	5
Enterocele + perineal descent	4
Rectocele + intussusception + enterocele	3
Rectocele + enterocele	2
Rectocele + enterocele + perineal descent	2
Intussusception + enterocele	2
Rectocele + intussusception + enterocele + perineal descent	1
Normal $n=3$	

Table 2. Pelvic floor disorders at defecography and clinical symptoms (in percentage)

	Incontinence			Pain			Constipation		
	Yes	No	*P*	Yes	No	*P*	Yes	No	*P*
Rectocele	55	56	0.5	71	53	0.09	45	58	0.25
Intussuception	62	69	0.5	71	64	0.35	70	58	0.20
Enterocele	24	26	0.5	42	22	0.15	18	26	0.40
Perineal descent	44	60	0.2	28	55	0.10	45	68	0.10

careful explanation of the procedure, defecography did not cause problems in our population of elderly women. Constipation, faecal incontinence and pelvic pain are common symptoms in older women and frequently occurred in combination. These symptoms need the same careful evaluation in older as in younger patients as this may lead to specific therapy such as surgical treatment of a rectocele and/or prolapse. Such therapy can improve the quality of life of patients. However, symptoms did not correlate with the defecographic abnormalities. Determining the clinical value of radiological abnormalities was also difficult and remains debatable [8–12]. Interpretation of such studies should be cautious since radiographic changes could be demonstrated in healthy subjects of various ages [13, 14].

Despite these uncertainties, we have identified a wide spectrum of abnormalities with frequent associations. To our knowledge no specific study has been previously carried out in symptomatic older patients. Comparing our findings with two recent studies conducted in younger symptomatic patients, we found a lower percentage of normal examinations (6% *versus* 12.5% [4] and 23% [5]) as well as a higher percentage of associated abnormalities (77% *versus* 30% [4] and 21% [5]). Pelvic floor disorders have been demonstrated in two other large series of younger subjects (mean age: 63.5 – range: 12–95 years for Agachan and mean age: 54 – range: 15–88 years for Mellgren) [4, 5]. A study comparing younger (19–55 years) with older (66–87 years) asymptomatic subjects showed a greater degree of perineal descent in older women [15]. Intussusception is also very common at the stage of rectal prolapse in the elderly [16, 17]. Hence our results could be due to those age-related differences in the prevalence of pelvic floor disorders. The criteria we used may also influence our results. Since no age-related definition of pelvic floor disorders has been established, our diagnostic criteria were those commonly used in women of all ages [4]. Perhaps new criteria should be defined for older patients, and we wonder whether the high rate of conditions observed could be related to physiological age-related changes overdiagnosed by defecography. However, to resolve this it would be necessary to perform a study in asymptomatic women over the age of 75 years, which might raise ethical concerns.

Defecography is a potential adjunct to clinical evaluation of older women with constipation, incontinence or pelvic pain, but caution is recommended in its interpretation until the criteria for defecography have been established in this population.

Key points

- In women aged ⩾75 years living at home, complaining of defecation disorders and/or pelvic pain, defecography:
- -was rarely normal (6%)
- -often showed more than one abnormality
- -found no association between defecography patterns and symptoms.

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