



## Enterocoele causing chronic constipation in a young male

S. Schober<sup>a,\*</sup>, T. Lahdes-Vasama<sup>a</sup>, T. Iber<sup>a</sup>, R. Rintala<sup>b</sup>

<sup>a</sup> Pediatric and Adolescent Surgery Unit, Pediatric Research Centre and Tampere University Hospital, Tampere, Finland

<sup>b</sup> Department of Pediatric Surgery, Children's Hospital, Helsinki University Central Hospital, Finland



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### ABSTRACT

A 14-year old boy with a life-long history of defecation problems was diagnosed to have an enterocoele with dynamic defecography. This is a rare diagnosis in male adolescent patients. The patient was successfully treated laparoscopically.

### 1. Introduction

Enterocoele is defined as herniation of small bowel in the peritoneal pouch of Douglas towards the rectum [1]. This condition is attributed to acquired weakness or disorders of the posterior part of the pelvic floor. Enterocoele is an uncommon finding in elderly women [2,3] and is extremely rare in men [4]. Usually adult female patients have one or more of the predisposing risk factors such as multiparity, advanced age, hysterectomy or obesity which cause pelvic floor laxity or increased abdominal pressure [3,5]. In pediatric patients enterocoele is exceedingly rare. Unlike enterocoele, rectal prolapse, where full thickness of rectal wall is protruding outside the anus after defecation, is a relatively frequent finding in young children. Usually these children are otherwise healthy, but may suffer from constipation. A small enterocoele may be asymptomatic. The most frequent symptoms of a larger enterocoele in adults are difficulties in emptying of the bowel, postevacuation discomfort and pelvic pain [3]. In adult females, an enterocoele may be seen by colposcopy.

### 2. Background

Koivusalo et al. described the use of defecography for diagnostic work-up in children suffering from recurrent rectal prolapse [6]. In one of their male patients a small enterocoele was found, but his symptoms were caused by the rectal prolapse. That patient underwent a rectopexy in combination with an anterior peritoneoplasty [6,7]. Wester et al. published a case report in 1997, describing a 14-year old male patient who had suffered from constipation for ten years before an enterocoele was found in defecography [8]. We will report a similar rare case of an adolescent male patient who always had had defecation problems and whose giant enterocoele was also diagnosed by defecography. His

enterocoele was treated with a laparoscopic rectopexy at Tampere University Hospital, Finland. As far as we know this is the second case of a symptomatic isolated enterocoele in an adolescent male.

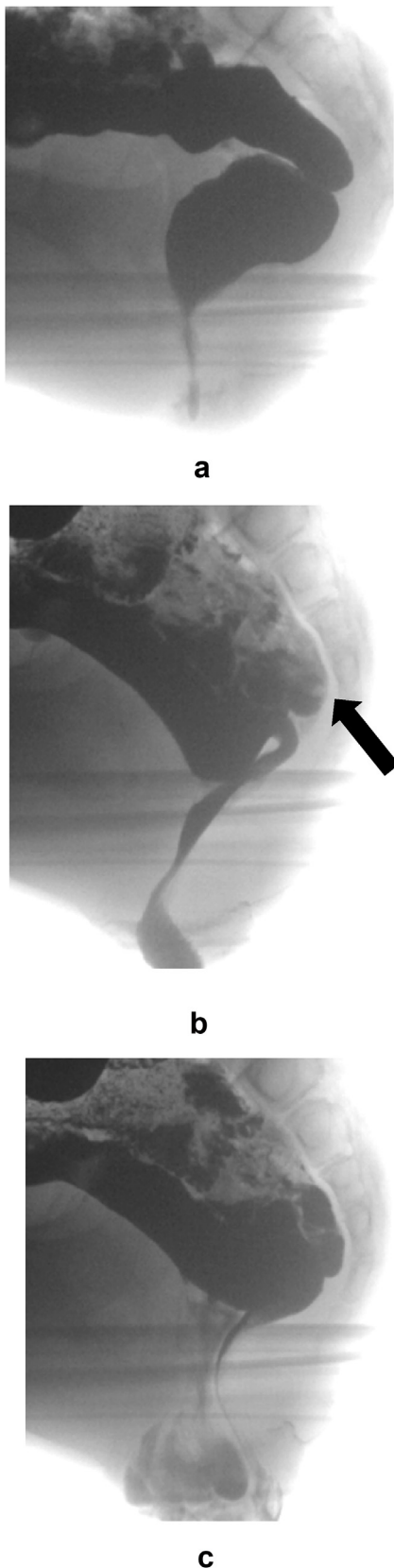
### 3. Case report

A 14-year-old male had had defecation problems throughout his life. According to his mother, he had always had difficulties in passing stools despite having soft and unformed feces. Already at diaper age he needed to strain to defecate. When toilet trained, he sometimes sat on the potty for hours and still had a feeling of not being able to evacuate completely. He managed, however, to defecate daily. There have never been difficulties in urination. At the age of 13 years, he experienced a fist-sized prolapse of bowel during defecation. After relaxing the pelvic muscles, he could reduce the prolapse easily without assistance. The patient visited the health center, where the physical examination did not reveal anything abnormal. A rectal prolapse caused by constipation was suspected and stool softeners were prescribed although the patient was insisting that his stools were already soft. A small prolapse kept appearing every time the patient was defecating. Finally, the patient could not evacuate his bowels without an enema. He was referred to a pediatric surgeon who ordered a dynamic defecography which showed an enterocoele. It herniated along the anterior wall of the rectum, obstructing the rectal lumen during defecation (Fig. 1a–c). To get a better understanding of the pelvic anatomy of the patient, a magnetic resonance imaging (MRI) was scheduled (Fig. 2). The imaging showed how a part of the small intestine was situated slightly behind the rectum, but without straining no herniation was seen. The pelvic muscles did not show any abnormalities. The peritoneum was suspected to be thickened above the rectum. No other pathologies were found.

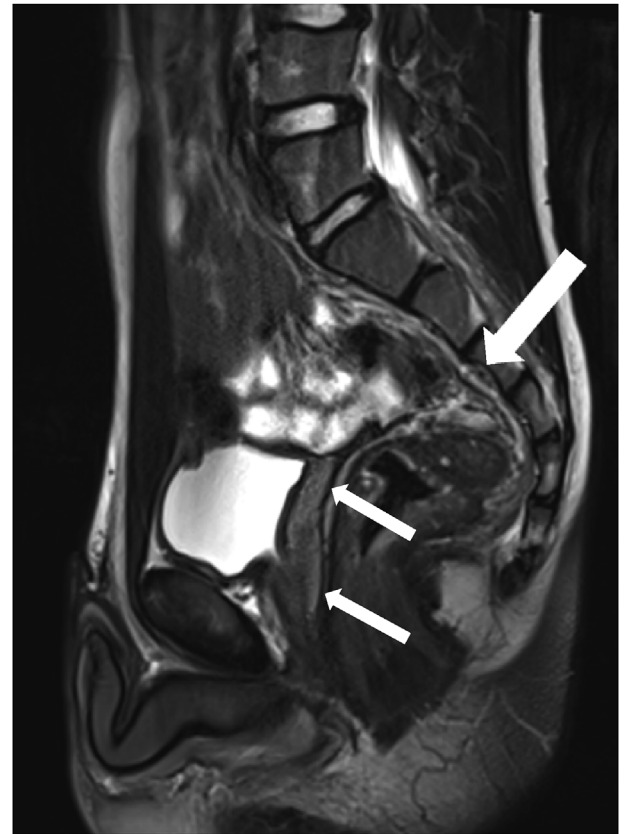
A laparoscopic exploration revealed a broad and deep pouch of

\* Corresponding author. Tampere University Hospital, ward L09B, Teiskontie 35, PL 2000, 33521 Tampere, Finland.

E-mail addresses: [sarah.schober@pshp.fi](mailto:sarah.schober@pshp.fi) (S. Schober), [tuija.lahdes-vasama@pshp.fi](mailto:tuija.lahdes-vasama@pshp.fi) (T. Lahdes-Vasama).



**Fig. 1.** a: In the beginning of the defecography a normal sized rectum is filled with contrast medium. b: In the beginning of defecation contrast medium filled small bowel first protrudes slightly between the rectum and sacrum (arrow). c: During defecation, a loop of small intestine prolapses along the anterior wall of the rectum.

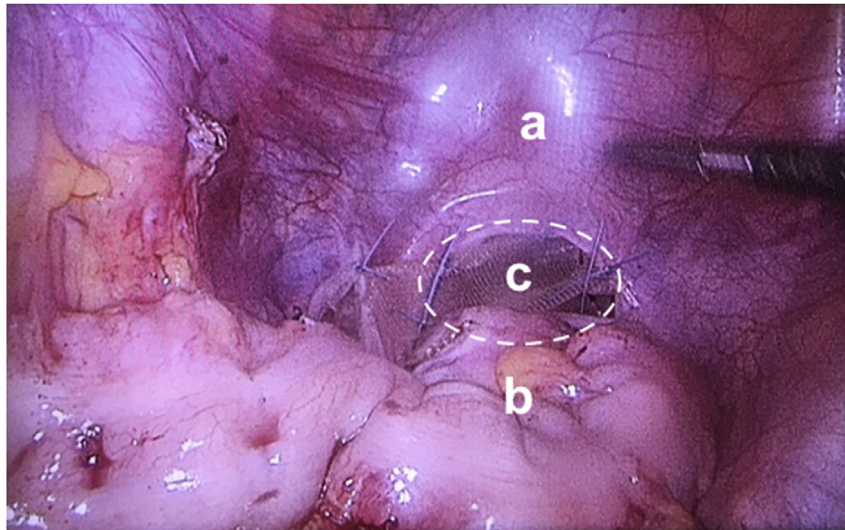


**Fig. 2.** The MRI shows that contrast filled small intestine loops are slightly protruded between the rectum and sacrum (big arrow). The enterocele is not seen sliding down anterior to the rectum without straining. The space between the rectum and bladder is empty, but abnormally broad (small arrows).

Douglas anterior to the rectum. The pouch was filled with loops of ileum. The rectum was mobilized, straightened and fixed to the sacrum. The pouch of Douglas was closed with a polyglactin mesh, which was fixed to the surrounding abdominal wall and the rectum (Fig. 3). Recovery was uneventful. Liquid nutrition was ordered for the first two postoperative days. Stool softeners were prescribed to help bowel function. The patient was discharged on the fourth postoperative day. Until the follow-up visit, the patient was told to avoid any physical effort. Six weeks postoperatively, he was still using stool softeners and had no problems with defecation. A physiotherapist gave him instructions how to strengthen the pelvic floor muscles. Sport was allowed. Three months later, the patient did not report any difficulties with defecation. No rectal prolapse was seen since the operation. Stool softeners were continued for one year.

#### 4. Discussion

Women suffering from enterocele usually have risk factors which either weaken the pelvic muscles or increase the abdominal pressure [3,5]. The main hypothesis on the development of enteroceles in female patients is a combination of physical pressure during pregnancies and childbirth and later the slow atrophy in pelvic floor structures, combined with a lack of female hormones in elderly women [9,10]. These factors don't exist in males or children. Another hypothesis on the etiology of enterocele in women is frequent and prolonged straining during defecations which might result in injured pelvic floor muscles and supporting ligaments [11]. In pediatric patients, severe constipation may cause rectal prolapse. Cystic fibrosis and serious malnutrition - especially when associated with intestinal parasites - predispose to rectal prolapse in children [12,13].



**Fig. 3.** This intrasurgical photograph shows the anterior wall of the abdomen (a) and the rectum (b). In the middle is the especially deep and broad rectovesical pouch – pouch of Douglas (c) with the partly placed mesh on top of it (line).

Enterocoele, on the other hand, is exceedingly rare in pediatric patients. Koivusalo et al. reported a small anterior rectocele in a 14-year-old boy who underwent defecography for rectal prolapse [6]. More than 20 years ago Wester et al. published a case report of a diabetic 14-year-old boy with an isolated enterocoele revealed by defecography [8]. He had been suffering from constipation for 10 years and had used regular enemas for four years before the rectocele was found and surgical intervention was put in place. Our patient had had difficulties to defecate his whole life. For years it was believed that he was constipated although his stools had always been soft. Nichols described an embryological approach to enterocoeles, namely a failure of the fusion of the anterior and posterior peritoneum in the pouch of Douglas, thus pointing out a main reason for an increased risk of enterocoele during child phase [9]. It is, however, impossible to estimate at what age the herniation started in our case. Further examinations were not performed until the age of 13 years, when the patient felt the enterocoele during defecation. His physical status seemed normal, but defecography clearly showed the enterocoele. Dynamic defecography has been described as a useful tool in order to disclose significant pathologies (e.g. enterocoele or rectocele) in patients with defecation problems or patients who were diagnosed with obstructed defecation syndrome before [6,14]. Although MRI usually gives excellent information about the pelvic structures, it was not diagnostic in our case. Defecation was not possible during a MRI study because of inevitable movement artifacts.

## 5. Conclusion

Although pediatric patients with enterocoeles are rare, a defecography should be considered also in children with long lasting defecation problems without hard stools or rectocele.

## Patient consent

Consent to publish the case report was not obtained. This report does not contain any personal information that could lead to the identification of the patient.

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## Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

## Conflict of interest

The following authors have no financial disclosures: SS, LVT, IT, RR.

## Competing interest statement

None.

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