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Before and after study

Injection sclerotherapy using aluminum potassium sulfate and tannic acid in the treatment of symptomatic rectocele: A prospective case series

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HIGHLIGHTS

- ALTA has much more impact on inflammatory responses and fibrosis than other sclerosant.
- Because ALTAS requires neither excision nor suturing, there is no associated risk of bleeding or anastomotic dehiscence.
- Therefore, alleviation of postoperative pain and complications such as infection or rectovaginal fistula can be expected.
- Consequently, ALTAS is quick and easy to perform with a reasonable mid-term outcome.

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ABSTRACT

Introduction: Although various surgical techniques have been described for the treatment of rectocele, there is currently no method exhibiting overall superiority because of the different types of complications and varying rate of recurrence. The aim of this study was to evaluate the outcomes of injection sclerotherapy using aluminum potassium sulfate and tannic acid in the management of symptomatic rectocele.

Methods: Twelve patients were recruited and treated using injection sclerotherapy. Efficacy measures included changes in the Constipation Scoring System value and rectocele size.

Results: The median operative duration was 7.5 min (range, 3–16 min). Three months after treatment, the mean Constipation Scoring System value decreased significantly in comparison with the baseline value (8.9 ± 4.1 vs. 4.9 ± 2.8, $P = 0.0014$) and the mean rectocele size reduced significantly in comparison with the baseline size (3.8 ± 0.5 vs. 1.7 ± 0.9, $P < 0.001$). Regarding complications, a patient showed temporary fecal impaction after treatment. The recurrence rate at 4 years was 29% (95% confidence interval, 10%–66%).

Conclusions: Injection sclerotherapy is quick, easy to perform, and offers reasonable mid-term outcomes; furthermore, it is associated with a low rate of complications. Therefore, it appears to be a reasonable alternative for patients with symptomatic rectocele.

1. Introduction

Rectocele is defined as herniation of the anterior rectal wall into the posterior vagina [1]. Small rectoceles are usually asymptomatic; however, large ones appear with a great variation in symptoms. Rectocele often becomes apparent during defecation and results in defecation disorders such as obstructed defecation, a sensation of incomplete emptying, and fecal incontinence [2].

Although the surgical repair of rectocele is controversial, most surgeons advocate this method when the symptomatic rectocele is large, unable to empty sufficiently on defecography, or clinically related to frequent vaginal or perineal manipulation by the patient to attain satisfactory evacuation [1]. Various surgical techniques such as transvaginal, transperineal, transanal, and abdominal approaches have been described for the treatment of rectocele. However, there is currently no method exhibiting overall superiority because of the different types of complications and varying rate of recurrence rate [1].

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Injection sclerotherapy is a minimally invasive and economic procedure that is used to effectively treat anorectal diseases such as rectal prolapse and internal hemorrhoids [3,4]. Aluminum potassium sulfate and tannic acid (ALTA) is an injectable sclerosant for the treatment of hemorrhoids [3]. ALTA sclerotherapy produced effects similar to those produced by hemorrhoidectomy without the specific complications during a study comparing the two methods for prolapsed hemorrhoid cases [5]. Injection sclerotherapy using ALTA is an option for the management of symptomatic rectocele. The aim of this study was to assess the clinical outcomes of ALTA sclerotherapy (ALTAS) in the management of symptomatic rectocele.

2. Material and methods

We retrospectively reviewed data that were prospectively collected from patients with symptomatic rectocele treated using ALTAS at our institution. The inclusion criteria were 1) failure of nonoperative management, including the use of laxatives and sessions of biofeedback, 2) large rectocele (>3 cm), 3) and at least one of the following evacuatory complaints: excessive straining, hard stools, incomplete evacuation, digitation, and use of laxatives or enemas. Severity of constipation was assessed using a validated scoring system (Constipation Scoring System; CSS) [6]. The validated CSS comprises eight items and the overall score ranges from 0 (normal) to 30 (severe constipation). All patients underwent a full proctological examination followed by anal manometry and defecography. For defecography, a barium paste was inserted into the rectum until the patient experienced an evacuatory sensation. Next, the patient was asked to sit on a radiolucent commode and squeeze and strain. Static films were obtained at rest, squeeze, and strain points, and a dynamic cinematograph was recorded in digital form. Using these images, the anal and rectal axes were determined. Rectocele was measured from its apex to anal axis at the time of maximal straining (Fig. 1). Coexisting rectal intussusception, mucosal prolapse, and hemorrhoids were identified based on proctoscopy and defecography. The research and ethics committee of Kunimoto Hospital approved this study, and all patients provided written informed consent before treatment.

ALTAS was performed under the effect of caudal epidural anesthesia in the prone jackknife position with the buttocks taped widely apart. A suppository was used to empty the rectum before operation. In cases with coexisting intussusception, the redundant rectum was maximally prolapsed using forceps (Fig. 2B). Using a 25-gauge injection needle mounted on a 5 mL syringe, 1–2 mL of ALTA solution (Zione; Mitsubishi Tanabe Pharma Co., Osaka, Japan) was injected along the rectal submucosa. A total of 10–20 different sites were circumferentially injected from the proximal edge of the rectocele to the dentate line. In cases with coexisting hemorrhoids, the surgeon inserted a Z-type proctoscope (Arakawa Seisakujo, Tokyo, Japan) with a distally opening window (Fig. 2C). ALTA solution was injected on the basis of a 4-step injection procedure, as previously described [3]. In brief, ALTA was injected into 4 different parts of the hemorrhoid: the submucosa at the superior pole, central part, and inferior pole as well as the mucous lamina propria in the central part. Injected tissues were gently kneaded for evenly distributing the solution. The patients were postoperatively administered prophylactic oral antibiotics (cefaclor, 750 mg/day) and oral analgesia (loxoprofen, 180 mg/day) for 3 days; there were no dietary restrictions.

Patients were followed up on an outpatient basis. The primary efficacy measures were CSS and the rectocele size. Patients were evaluated before and at 3 months after treatment. The data were expressed as mean ± standard deviation (SD) for quantitative variables. Paired analysis was performed using the paired *t*-test. Two-tailed P values of less than 0.05 were considered significant.

3. Results

From August 2011 to April 2014, we performed ALTAS on 12 female patients. The median age of patients was 69 (range, 50–80) years. Two (17%) patients were primiparous and 10 (83%) were multiparous, with median parity per patient of 2 (range, 1–4), when considering vaginal delivery. Four (33%) patients had undergone anorectal or gynecologic surgeries. The preoperative CSS score and defecographic or proctoscopic findings are shown in Table 1.

The median operative duration was 7.5 min (range, 3–16 min). The mean total injection dose of ALTA was 24.5 mL (range, 16–40 mL). An early postoperative complication was noted in one patient. She showed temporary fecal impaction and was treated successfully through a single use of sodium bicarbonate suppository. No patients showed late postoperative complications.

At 3 months, the rectocele sizes reduced in 11 patients (92%) and did not change in 1 (8%) patient; CSS improved in all patients. The mean rectocele size significantly reduced in comparison with the baseline size (3.8 ± 0.5 vs. 1.7 ± 0.9, $P < 0.001$), and the mean CSS significantly decreased in comparison with the baseline value

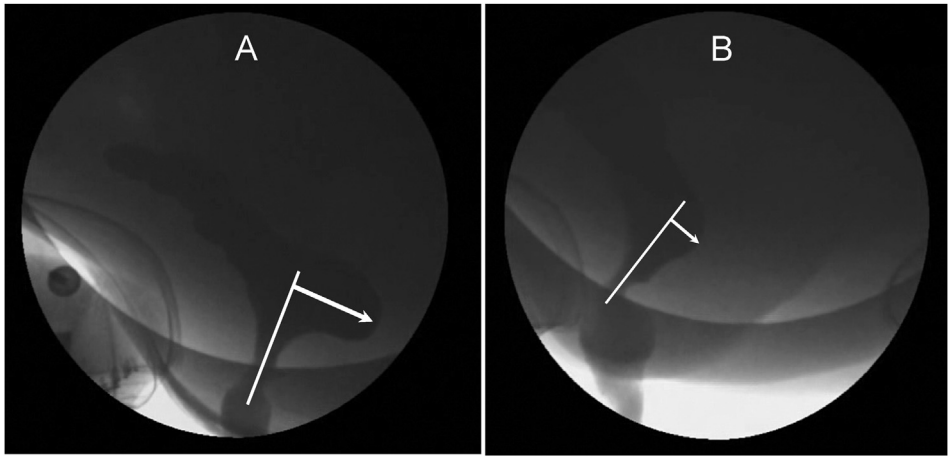

Fig. 1. Defecography of patient No.6 observed at pushing phase. The measured size of rectocele (white arrow) is perpendicular to the axis of the anal canal (white line). An approximately 3.5-cm large rectocele was observed before injection sclerotherapy (A). The size of rectocele was decreased after the procedure (approximately 1.5 cm) (B).