

SHORT REPORT

## Endoscopic hemorrhoidal sclerotherapy using 50% dextrose water: a preliminary report

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**Abstract** Injection sclerotherapy has a prominent role in the treatment of bleeding hemorrhoids. The commonly used sclerosants are not available or very expensive in Nigeria. We prospectively evaluated 50% dextrose water, used as a nonallergenic sclerosant, in the treatment of bleeding internal hemorrhoids. Forty consenting adult patients (median age 50 years [range 35–67]; 22 women) with bleeding hemorrhoids, seen over a 2-year period, were offered injection sclerotherapy with 50% dextrose water. They were assessed for response, tolerance and complications. The duration of symptoms before presentation was 3 months to 15 years. The bleeding stopped after the injection in all patients. No patient needed a repeat procedure. No complication was recorded during follow up which ranged from 2 months to 12 months. We conclude that endoscopic hemorrhoidal sclerotherapy using 50% dextrose water offers a simple, safe and effective modality of treatment if properly utilized.

**Keywords** Hemorrhoids · Intramuscular pentazocine · Proctoscopy

### Introduction

Bleeding from hemorrhoids is the most common anorectal disease.<sup>1</sup> Historically, injection sclerotherapy has had a prominent role in the treatment of bleeding hemorrhoids. Some of the sclerosants that have been used include N-butyl-cyanoacrylate, ethanolamine oleate, 5% phenol in

almond oil, sodium tetradecyl phosphate, and sodium morrhuate.<sup>2–4</sup>

The injected sclerosant obliterates the hemorrhoid vascularity, inducing inflammation and fibrosis which fixes the hemorrhoids to the surrounding tissue and prevents prolapse.<sup>2,3</sup> This method has, however, become unpopular because of sclerosant-related morbidity which includes anorectal abscess, hepatic abscess, necrotizing fasciitis, retroperitoneal sepsis, oleogranuloma (with oil-containing solutions), and pulmonary allergic reaction.<sup>2–5</sup> Though rare, some of these complications may be fatal.

To reduce the morbidity associated with non-physiological agents, Ponsky *et al.* used hypertonic saline, and found good response, but no complication, in 19 patients with bleeding hemorrhoids.<sup>6</sup> They concluded that non allergenic sclerosing agents may give better results with less complications. Another physiological solution that has been used as a sclerosant is 50% dextrose water;<sup>7</sup> this agent has not been used as a sclerosant for hemorrhoids.

Rubber band ligation is presently the most preferred outpatient treatment for hemorrhoids.<sup>2,3</sup> This method of treatment may not be very useful in patient with active bleeding.<sup>8</sup> Some of the commonly used sclerosing agents are not easily available in most centers in Nigeria; hence we conducted this study to assess the efficacy of 50% dextrose water in patients with bleeding hemorrhoids.

### Methods

The study was conducted at the Endoscopy Unit of our hospital which serves as the referral tertiary hospital to the rural and semi-urban agrarian communities in southwestern Nigeria, which has an estimated population of approximately 7.7 million persons.

Forty consenting consecutive patients (22 women) with bleeding hemorrhoids between January 2006 and May 2008 were recruited. Five patients with bleeding hemorrhoids who chose conservative management and one patient who opted for surgical management were excluded. Patients with significant blood loss before presentation were resuscitated. The diagnosis of hemorrhoids was confirmed by proctoscopy

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in all patients. Hemorrhoids were classified into four grades using the American classification.<sup>8</sup> Patients above 50 years underwent colonoscopy to rule out additional sources of rectal bleeding. Patients with history of diabetes mellitus or with positive urine-reducing substances were excluded from the study.

Premedication consisted of intramuscular pentazocine (30 mg) and prophylactic antibiotic (combination of ampicillin and cloxacillin 1 g intravenous). Patients were placed in modified left lateral decubitus (Sims' position). All injections were done by experienced personnel. Approximately 2–5 mL of 50% dextrose water was injected into the submucosa of each hemorrhoidal bundle, at least 1 cm proximal to the dentate line, using a 20-gauge spinal needle. The injection was deep enough so as not to blanch the mucosa, but not deep enough to injure the underlying muscle. Each patient was observed for 30 minutes before being allowed to go home. Patients were asked to follow up at 1 week, 4 week and 3 months to assess for recurrence or complications.

Intraoperatively, pain assessment was done using a 4-point modified visual analogue scale where grade 1 indicated severe pain requiring conversion to general anesthesia, and grade 4 indicated no pain.<sup>9</sup> Since bleeding was the chief complaint, relief of bleeding was used as an indicator of success of treatment.

The grade of the hemorrhoids, duration of symptoms, the modified visual analogue rating and outcome were recorded. Data were analyzed using SPSS version 11.0 (SPSS Institute, Chicago, IL).

## Results

The median age of patients was 50 years (range 35–67 years). The median duration of symptoms before presentation was 1 year (range 3 months to 15 years). Nine (22.5%) patients had grade 1 disease, 15 (37.5%) had grade 2, 11 (27.5%) had grade 3, and 5 (12.5%) had grade 4 disease.

The procedure lasted for approximately 3 to 5 minutes. All patients tolerated the procedure well. Thirty five patients had grade 3 (mild) discomfort and 5 patients had no discomfort during the procedure. Bleeding stopped after the injection in all patients. No patient needed a repeat procedure. No complication was recorded during the varying period of follow up which ranged from 2 months to 1 year and the median follow up is 10 months. Eighteen of the 31 patients with grade 2 to 4 hemorrhoids had regression of the anal protrusion.

## Discussion

Bleeding is the most common complication of hemorrhoids.<sup>10</sup> Occasionally the bleeding may be large in quantity. Because of the absence of social security and fear of surgery, most Nigerian patients prefer an effective procedure that will not involve the use of anesthesia and that will be inexpensive.

Injection sclerotherapy is a simple, safe and effective method for the treatment of bleeding hemorrhoids.<sup>6</sup> The success rate of the procedure is close to 100%. Problems associated with injection sclerotherapy are due to the sclerosing agent used or incorrect placement.<sup>5,8</sup> The most common sclerosing agents used include 5% phenol in almond oil, ethanalamine oleate and sodium tetradecyl phosphate. These agents are expensive and not readily available in our environment. They are also non physiological, toxic and allergenic.<sup>2–5</sup> Perianal sepsis has been reported following injection sclerotherapy.<sup>5</sup>

We found an impressive response in our patients after a single injection of 50% dextrose water; the bleeding stopped in all patients and no patient had recurrence of bleeding during follow up. Results obtained in the study may be due to the fact that 50% dextrose water is a physiological solution with mild sclerosing effect. This effect may be progressive over time preventing recurrence of the disease. In addition, the anal tag associated with the disease regresses after the procedure. This may be due to the fact that the tone of connective tissues that hold the anal cushion improved after the injection. These findings will need further evaluation in larger population and long-term follow up.

One of the major complications of various treatment modalities of hemorrhoids is pain.<sup>2</sup> Pain could be very severe necessitating use of opioid analgesics. None of our patients needed an analgesic after the procedure. No complication was observed during the procedure.

We conclude that endoscopic hemorrhoidal sclerotherapy using 50% dextrose water offers a simple, safe and effective modality of treatment if properly utilized.

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