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Use of Hot Brine Solution as a Sitz Bath in the Treatment of Haemorrhoids- A Case Study

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Abstract
Haemorrhoids, also referred to as Piles, are protrusions of the anal orifice, causing the anal tissue to extend beyond the level of the opening upon inspection. They are caused by increased pressure in the veins of the rectum or anus, resulting from straining when trying to have a bowel movement or any activity causing straining, such as heavy lifting. Both male and female subjects may suffer from this condition. It is believed that there is a genetic predisposition in the epidemiology of haemorroids since children also suffer from this ailment. In the present study, a 40-year-old male patient presented with a mass of tissue jotting out of his anal orifice. The lesion was, upon inspection, diagnosed as internal haemorrhoid. The patient was placed on a hot brine solution sitz bath with massage for 10 consecutive days, with morning and evening treatments on each day. After the period, it was observed that the hitherto protruding anal tissue gradually resolved without any other intervention. This finding suggests that super-saturated sodium chloride crystals dissolved in water (brine solution), and subjected to boiling, could have an anti-inflammatory effect on soft tissues, thereby inducing shrinkage. More work is needed on this subject, considering the number of patients involved in the presented study.

Keywords: Hot Brine Solution, Sitz Bath, Treatment, Haemorrhoids

Introduction

Haemorrhoids, also referred to as Piles, are protrusions of the anal orifice, causing the anal tissue to extend beyond the level of the opening upon inspection. But in a more professional language, haemorrhoids, or "piles" are enlarged vascular cushions within the anal canal. They have been described for many centuries and continue to form a large part of a colorectal surgeon's workload (Acheson and Scholefield, 2008). What a patient considers as "Haemorrhoids" may range from itchiness, pain, bleeding, constipation, and difficulty in evacuating, to large fungating masses or prolapse of the entire rectum (Tse, 1988). The exact incidence of this condition is difficult to estimate, since many patients are reluctant to seek medical advice as a result of personal, cultural and socioeconomic concerns (Acheson and Scholefield, 2008).

Haas *et al. (1984)* suggested that haemorrhoids are normal parts of the human anatomy. Haemorrhoids are caused by increased pressure in the veins of the rectum or anus, resulting from straining when trying to have a bowel movement or any activity causing straining, such as heavy lifting. As pressure increases, blood pools in the veins and this causes the veins to swell, thus stretching the surrounding tissue. Pile affects both genders, but the impact on males appears to be more of concern because of its effect on their sexual performance. This disease appears to be genetically inherited as some children have been known to suffer from this ailment. Human beings are prone to Haemorrhoids because their erect posture puts a lot of pressure on the veins in the anal region (Gary and Martins, 1995). In another work, it was suggested that over-eating and the presence of unassimilated bulk foods in the

bowel, intoxicating liquors, artificial flavorings or spices, white bread, cakes, all other white flour products, fried foods, sugar and all mineral drinks, can predispose to haemorrhoids (Soladoye *et al*., 2010).

Haemorrhoids can be inside and/or outside the anus (Soladoye *et al*., 2010). They are graded on a scale of I (least severe) through IV (most severe). Office-based treatments are effective for grades I, II, and some grade III haemorrhoids. Surgical excision is the standard for high-grade haemorrhoids (Cengiz and Gorgun, 2019). Epidemiological data suggest varying prevalence rates from 4.4 % in adults in the United States to over 30 % in general practice in London (Gazet et al., 1970; Johanson and Sonnenberg,1990).

In Africa, knowledge of the epidemiology of haemorrhoids is sparse. In another study (Duke, 1989) opined that about one quarter of all Africans have had haemorrhoids at age 50 and that 50% to 85% of the World's population could be affected by haemorrhoids at some time in their lives. In the East and South regions of Cameroun (Ottou *et al.*,2020) reported the occurrence of both external and internal haemorrhoids among subjects who presented to traditional practitioners for treatment. They reported that 66% of the patients were male and aged between 35 and 60 years.

The exact picture of the prevalence of haemorrhoids in Nigeria is uncertain. This is occasioned by economic, socio-cultural and religious beliefs. A high level of illiteracy and fear of stigmatization may also contribute to the unwillingness of patients to seek expert medical advice and intervention.

Modern lifestyles have been linked with the occurrence of haemorrhoids. For instance, increased consumption of processed foods, a sedentary lifestyle, and use of mobile phones while defecating, which translates to much more time spent on the toilet, have been incriminated as associated factors in the incidence of haemorrhoids (Cengiz and Gorgun, 2019). In another study among residents of an urban community in Nigeria, a low prevalence of 3.3 % for hookworm infection was also observed in Calabar (Akpan and Agida, 2013). Intestinal parasitic diseases often lead to episodes of diarrhoea. Frequent stooling, often with excessive strain on the anorectal sphincter, can lead to, or exacerbate a pre-existing, prolapse of the anal canal.

Consumption of foods known to be rich in fibre and roughage contents (starchy foods and vegetables) has been advocated as a cheap means of managing haemorrhoids (Alonso-Coello *et al*.,2006). Improvements on anal hygiene, taking sitz baths, increasing fluid and fruit intake and avoidance of straining during defecation have been suggested as practical means of reducing the occurrence of this condition. Injection Sclerotherapy - a submucosal injection with 5% oily phenol – has been suggested as a useful treatment procedure for first to second degree haemorrhoids, as an alternative to Rubber Band Ligation. Surgical intervention - Open and Closed Haemorrhoidectomy - is indicated for fourth degree haemorrhoids, which had not responded to alternative treatment procedures (Acheson and Scholefield, 2008).

Case Presentation

A 40-year-old man presented with a mass jotting out of his anal orifice. According to the patient, defecation was painful, usually with frank blood covering nearly the entire faeces. He also suffered from waist pains and constipation. Because of the complaint of lack of money for consultation fee, laboratory tests and other hospital charges, the patient refused to visit a hospital. This is the usual scenario in many African settings. A simple procedure, hot brine solution sitz bath, was thus administered.

Plate 1: A Haemorrhoid (on the anal orifice of a 40-year-old male patient).

Preparation and Application of Hot Brine Solution

Brine solution was prepared by adding handfuls of sodium chloride (NaCl) crystals to 4 litres of water in a beaker. The salt was added with continual stirring of the solution using a wooden spatula, until the crystals of salt no longer dissolved but some remained visible at the bottom of the solution. The specific gravity was read as 1.2, with the use of a hydrometer. The brine solution was then placed over a gas burner until boiling. The preparation was poured into a plastic bucket.

The patient was made to sit, with his legs astride, and his buttocks superimposed to cover the mouth of the bucket, thus exposing the anal lesion to the direct heat of the hot brine solution from underneath. A clean cotton cloth was dipped in the solution until it was completely soaked. The soaked cloth was dapped intermittently on the anal mass and the adjoining areas of the anal orifice. This combination of sitting over and dabbing with the brine solution was carried out for about 10 minutes each morning and evening. This treatment protocol was repeated for 10 consecutive days. The patient was given 2 tablets of a local analgesic (Panadol), to alleviate pains, after each round of treatment with the brine solution sitz bath and massage.

Result

After 10 days of sitz bath and massage with the hot brine solution, the haemorrhoids tissue began to resolve gradually, and the anal region eventually regained its original status as indicated below.

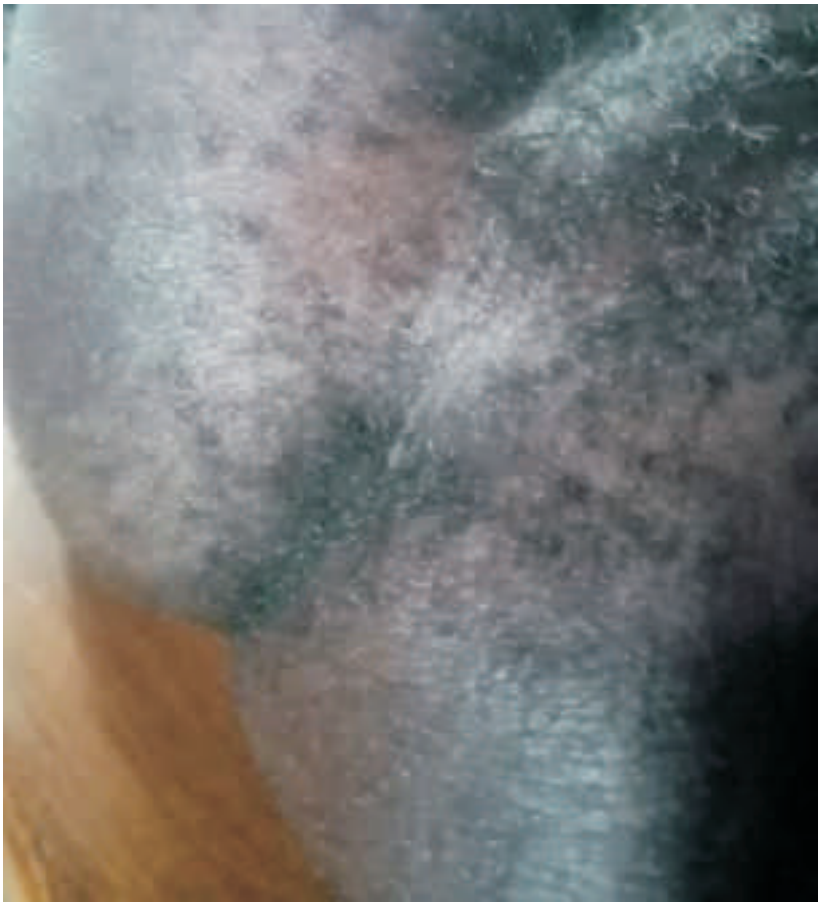

Plate 2: A resolved Haemorrhoid (after 10 days of sitz bath and massage with a hot brine solution).

Discussion and Conclusion

In the treatment of haemorrhoids, each patient is unique, and with a range of treatments available, treatment can be individualized (Cengiz and Gorgun, 2019). In the present work, the patient responded very well to the hot brine solution sitz bath and massage. The haemorrhoid resolved after 10 consecutive days of treatment. After one more week, the anal area was completely smooth, as indicated in Plate 2. This clearly shows the efficacy of heat and super-saturated salt solution (brine) in causing the hitherto inflamed tissue to shrink and retract. Since 5% lidocaine may be applied topically to ease pains in cases of low degree haemorrhoids (Cengiz and Gorgun, 2019), it is believed, in this study, that hot brine solution had an anti-inflammatory effect on the lesion and that it was able to dehydrate the tissue mass and hence cause its shrinkage and retraction. It is hereby suggested that consumption of high fibre foods, spending less time in the toilets and attempting to defaecate only when there is real urge, in order to exert less strain on the anorectal area, can help in reducing the cases of haemorrhoids.

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