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TABLE SALT FOR TREATMENT OF UMBILICAL GRANULOMA IN INFANTS: A REPORT ON TWO CASES

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SUMMARY

Umbilical granulomas are among the most common neonatal umbilical abnormalities, often triggering concern in parents despite their benign nature. They result from excess granulation tissue that fails to epithelialize properly after the umbilical cord falls off. Standard treatments such as silver nitrate cauterization, while effective, may not always be accessible or acceptable due to associated risks, costs, or parental concerns. This report presents two cases of infants with persistent umbilical granulomas that responded successfully to table salt application following unsuccessful or impractical conventional interventions. The treatment led to rapid lesion resolution within a few days, without adverse effects. Differential diagnoses such as umbilical polyps and patent urachus were clinically ruled out. This case report underscores table salt as a feasible and cost-effective therapeutic option, especially in resource-constrained environments. Nevertheless, findings should be interpreted cautiously due to the small sample size.

INTRODUCTION

Umbilical granulomas are non-malignant growths that appear following the detachment of the umbilical cord, typically caused by an incomplete epithelialization process. These granulomas are moist, pink or red in color, and prone to discharge or minor bleeding. They are usually small (3-10 mm) and commonly present between the second and fourth weeks of life (1).

Although diagnosis is largely clinical, differential diagnoses such as umbilical polyps, patent urachus, omphalomesenteric duct remnants, and hemangiomas should be carefully considered and excluded based on associated symptoms, discharge characteristics, and systemic signs (2,3,4). For instance, urachal remnants typically involve clear or urine-like discharge, and omphalomesenteric anomalies may present with fecal leakage.

Standard treatment for umbilical granulomas often involves the use of chemical cauterization (e.g., silver nitrate), cryotherapy, or surgical excision. However, these options may be expensive, less accessible, or distressing to parents due to invasiveness or the risk of localized burns (5). Recently, household table salt (sodium chloride) has emerged as a non-invasive and cost-effective alternative. Salt induces osmotic dehydration, leading to tissue necrosis and sloughing of granulation tissue (6). Several small-scale studies and reviews have shown encouraging results with this method (7).

In this report, we present two infant cases managed with table salt after either failed silver nitrate application or parental reluctance toward invasive procedures. We discuss the diagnosis process, rationale behind treatment choice, and implications for broader use.

CASE PRESENTATION:

Case 1: Persistent Granuloma Following Failed Home Cauterization

A 10-week-old female infant, born at term via spontaneous vaginal delivery with no perinatal complications, was brought to clinic with a persistent umbilical lesion. The lesion, a pinkish, friable nodule approximately 5

mm in diameter, was first noticed around the third week of life. Initially, the parents managed it conservatively through daily cleaning and dryness maintenance. At 8 weeks, due to lack of improvement, the infant's father attempted two applications of silver nitrate at home under remote guidance from a local health worker.

On presentation, the infant was afebrile, active, and feeding well. Physical examination revealed a well-defined, non-tender, moist granuloma with no surrounding erythema or signs of infection (Figure 1). There were no signs of urinary or fecal discharge, ruling out patent urachus or omphalomesenteric duct anomalies.

Given the parents' anxiety about repeat cauterization and the prior failure of unmonitored home treatment, a non-invasive method was proposed. Informed consent was obtained. A pinch of table salt was applied to the granuloma and covered with sterile gauze for 30 minutes, twice daily. This was followed by gentle cleaning with warm water. By Day 3, the granuloma was dry and significantly reduced in size. By Day 7, the lesion had fully resolved. No adverse effects were observed, and at two-week follow-up, the site remained healed with no recurrence (Figure 2).



Figure 1: The Initial appearance of umbilical granuloma before table salt application



Figure 2: Drying of the umbilical granuloma after 3 days of table salt application

Case 2: First-line Salt Treatment Due to Parental Preference

An 11-week-old male infant presented with a 6 mm umbilical granuloma, noted shortly after the umbilical cord fell off on Day 6 of life. The lesion was associated with intermittent yellowish discharge but no bleeding or foul odor. The child's medical

history was unremarkable, and there were no signs of systemic illness.

Physical examination showed a solitary, pink, moist umbilical nodule. No abdominal wall defects, umbilical hernias, or abnormal discharges were observed (Figure 3). Differential diagnoses were clinically ruled out. Given the parents' hesitation about

chemical cauterization and preference for a less invasive approach, the salt application protocol used in Case 1 was initiated. Within four days, the granuloma had fully resolved without complications (Figure 4).

Parental satisfaction with the treatment process and outcome was high. The infant remained healthy, and there was no recurrence on follow-up at two weeks.



Figure 3: Umbilical granuloma demonstrating a pinkish nodule before table salt application



Figure 4: Changes in the umbilical granuloma showing resolution after 4 days of table salt application

DISCUSSION

These two cases demonstrate the practical, safe, and effective use of table salt for the treatment of umbilical granulomas. Although widely regarded as benign, these lesions often distress caregivers and may require intervention to prevent infection or persistent discharge.

In Case 1, the father's unsupervised application of silver nitrate likely contributed to treatment failure. This emphasizes the importance of appropriate clinical oversight and parent education when implementing at-home interventions. Furthermore, improper use of silver nitrate may result in skin burns or ulceration (8).

Salt works through an osmotic mechanism, creating a hypertonic environment that dehydrates and necroses the granulation tissue without harming surrounding healthy epithelium. This promotes natural healing and epithelialization of the umbilical area. Studies such as those by Haftu et al. (7) have shown consistent success with minimal recurrence when salt is used properly.

Comparative literature indicates silver nitrate is more widely used, but it poses higher risks and is more costly. Cryotherapy and surgical excision are reserved for refractory cases but require expertise and sterile settings. Salt, in contrast, is affordable, accessible, and parent-administered with minimal supervision, making it particularly useful in low-resource settings.

Despite the positive outcomes in our cases, this report is limited by the absence of a control group and a very small sample size. We did not perform laboratory or imaging studies, relying entirely on clinical evaluation to rule out alternative diagnoses.

We recommend that clinicians conduct a comprehensive assessment to rule out other possible causes of umbilical nodules or discharge, such as patent urachus or omphalomesenteric duct remnants, before diagnosing umbilical granuloma. In cases

where silver nitrate is ineffective, unavailable, or declined by caregivers, table salt may serve as a practical, low-cost, and non-invasive alternative. Proper caregiver education on application technique, hygiene, and follow-up is essential to ensure treatment success and prevent misuse or complications. Finally, we advocate for further research, particularly randomized controlled trials, to validate the safety and efficacy of table salt therapy, establish standardized treatment protocols, and evaluate long-term outcomes in diverse clinical settings.

CONCLUSION

The successful resolution of umbilical granulomas in two infants using table salt supports its consideration as a safe, non-invasive, and cost-effective alternative, particularly when conventional therapies are unavailable, impractical, or declined. However, due to the limited sample size, further research is needed to standardize treatment protocols and identify selection criteria for optimal use. Until then, salt treatment may serve as a first-line or adjunctive approach in carefully selected cases.

Credit Author Statement

- **Willbroad Kyejo:** Conceptualization, Data curation, Investigation, Writing – Original Draft, Visualization, Project administration.
- **Nancy Matillya:** Methodology, Supervision, Writing – Review & Editing.
- **Yaser Abdallah:** Clinical assessment, Validation, Writing – Review & Editing.
- **Mariam Noorani:** Supervision, Resources, Writing – Review & Editing.

Conflict of Interest Statement

The authors declare no conflict of interest.

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