

CASE REPORT

Common salt for umbilical granuloma: a successful case report

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ABSTRACT

Background: During the neonatal period, umbilical granuloma is a common problem. However, limited is recognized about its etiology and the most effective treatment method remains unknown. **Case presentation:** A 40-day-old girl visited the pediatric outpatient department with a non-watery umbilical mass after the umbilical cord was separated. A clear, flesh-like mass measuring 1x0.8x0.5 cm protruded from the umbilicus. There was no yellowish discharge and the surrounding skin was normal. Common salt was applied to the umbilical mass three times a day. On the second day of saline treatment, the granuloma became blackish, and on the third day, the granuloma detached. After a week, the umbilicus became clear. **Conclusion:** For an umbilical granuloma, the common salt treatment appears to be a practical, affordable, and effective treatment option, especially in limited healthcare facilities.

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Highlights

1. In cases of umbilical granuloma, common salt is a practical, affordable, and effective treatment option.
2. Administering common salt for umbilical granuloma may be considered, especially in limited health facilities.

BACKGROUND

After birth, the umbilical cord, which provides a crucial conduit between the placenta and the fetus, mostly loses its functionality. However, newborns can frequently present with a variety of umbilical abnormalities, including benign granulomas or more serious lesions caused by persistent remnants that, if left untreated, can result in significant morbidity. For new parents, abnormal drainage of their umbilical cord is not uncommon, but it can be quite worrying (Muniraman et al., 2018). In neonates, the incidence of umbilical granuloma was 3.83%; in boys, it was 3.5%, and in girls, 4.1%. It was found that girls had a statistically significant higher incidence of umbilical granuloma than boys ($p < 0.05$) (Tülin dan Muhammet, 2022).

It has been proposed that the development of granulomas is influenced by inflammatory processes. After birth, the umbilical cord typically separates in seven to ten days. With the umbilical cord's epithelization, the remaining granulation tissue usually disappears one or two weeks after the cord separates (Muniraman et al., 2018). Both surgical and non-surgical methods can be used to treat umbilical granulomas. Several methods have been used, such as ethanol wipes, topical application of copper sulphate, silver nitrate cauterization, steroids, antibiotics, and electrocautery. However, suggestions on the best method of treatment for treating umbilical granuloma are varied (Iijima, 2023).

OBJECTIVES

This case report aims to describe the successful treatment of umbilical granuloma with common salt.

CASE REPORT

A 40-day-old girl presented to the outpatient pediatric department with an umbilical mass without any watery discharge. The mother noticed the mass after the umbilical cord separation at a month of age, with no skin redness. The patient had no other symptoms, no fever, and was clinically stable. Physical examination revealed a 1x0.8x0.5 cm clear flesh-like mass protruding from the umbilicus, without yellowish discharge and normal surrounding skin. The patient was born full term weighing 2,600 grams without complications (Figure 1).



Figure 1. The development of umbilical granuloma during common salt treatment

Patients received common salt administered in the umbilical mass three times daily, first cleaned with saline. The granuloma was covered with a teaspoon of common salt, and the umbilicus was wrapped in gauze for half an hour. The common salt was removed after 30 minutes and cleaned with saline. The use of common salt was tolerated. On the second day of therapy using common salt, there was still an umbilical granuloma, but the granuloma was getting a blackish color. The umbilical mass detached on the third day of therapy (Figure 1b). On the fourth day of common salt therapy, the umbilicus became cleaner with less clear discharge coming out from the umbilicus (Figure 1c). After one week of treatment, the umbilicus became clear, without any discharge (Figure d).

DISCUSSION

Approximately 1 in 500 newborns develop umbilical granuloma (Daruwalla dan Dhurat, 2020). Umbilical granuloma typically appears as a pedunculated mass with serosanguineous discharge, ranging in diameter from 1 to 10 mm, during the first few weeks of life (Das, 2019). The etiology of umbilical granuloma remains unknown despite its high prevalence in neonates. It has been reported that regardless of gender, umbilical granuloma occurs equally frequently in boys and girls. Another study mentioned that girls have a higher incidence of umbilical granuloma compared to boys (Tülin dan Muhammet, 2022).

Before the cord was separated, 80.8% of cases of umbilical granuloma were bathed ($p < 0.05$) (Tülin dan Muhammet, 2022). Meconium-stained amniotic fluid, gestational age, and birth weight were found to be significantly associated with umbilical granuloma (Iijima, 2023). Another study stated that compared to babies who received tub bathing (8.3 ± 2.5), those who received sponge bathing experienced a shorter time (6.1 ± 1.4) for the separation of their umbilical cord ($p < 0.005$) (Ayyildiz et al., 2015).

Several therapeutic approaches have been used, including topical betamethasone valerate and cauterization with silver nitrate. According to previous studies, the successful treatment rate for umbilical granuloma was 91% with silver nitrate cauterization, 97.7% with betamethasone application, 60% with ethanol disinfection, and 88% with ligation ($p < 0.001$). Topical steroid application might be the most beneficial option for treatment (Iijima, 2023). The risk of periumbilical burns from chemical cauterization, the contraindications for bilateral ligation and its complications during the procedure, the cost and lack of silver nitrate, especially in rural areas are among the reasons for considering alternative treatments among the current methods (Haftu et al., 2020a). There have been reports of minimal perilesional burns (at the umbilicus) and incomplete response to cauterization (Gupta et al., 2022). The randomized controlled trial mentioned that in a group of umbilical granulomas treated with common salt, 92.9% responded to common salt treatment, not significantly different from the 95.3% of umbilical granulomas that responded to silver nitrate (Fawzi, 2021). Compared to silver nitrate, common salt shows superior healing outcomes in infants under the age of 3 months (Banerjee et al., 2024).

Previous case reports have reported successful treatment of umbilical granuloma with common salt (Haftu et al., 2020b). In this case, common salt was applied to the umbilical granuloma for 30 minutes three times a day and then washed off with saline. The umbilical granuloma shrinks when salt is applied because it draws water out of it and increases the concentration of sodium ions around it (Singh et al., 2021). After applying common salt on the third day, the granuloma completely resolved, according to our case report. According to another study, a single application of common salt can result in the complete resolution of umbilical granuloma on 24 hours (Bagadia et al., 2019). The best results are obtained if the common salt application in treating umbilical granuloma is administered for at least 9-12 days (Singh et al., 2021).

At the next follow-up, there was no recurrence and no side effects. Following treatment in previous studies, no umbilical granuloma recurrence or adverse effects have been reported (Haftu et al., 2020a). Although previous studies have demonstrated the simpleness of use, affordability, and effectiveness of applying common salt topically in treating umbilical granuloma, randomized controlled trials are still required (Banerjee et al., 2023).

Limitations

This is a single case study. Further research with a larger number of subjects and comparison with other therapeutic modalities is needed.

CONCLUSION

Administering common salt is safe and effective for treating umbilical granuloma, especially in limited health facilities. Further studies with randomized controlled trials are needed to analyse the effectiveness of common salt in the treatment of umbilical granuloma.

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Conflict of Interest

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Patient concern for Publication

Informed consent was voluntarily obtained from the patient regarding the dissemination of their case information, upholding their autonomy and privacy rights.

Author Contribution

All authors contributed to preparation, data collection, drafting, and approval for publication.

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