

Therapeutic Effect of Common Salt (Table/ Cooking Salt) on Umbilical Granuloma in Infants

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Abstract

Background: Umbilical granuloma is a common inflammatory reaction which occurs during falling of umbilicus. Some treatments of umbilical granuloma includes cauterization with silver nitrate and copper sulphate, use of alcohol, Cryo and electro cauterization and granuloma ligators.

Objective: To evaluate the therapeutic effect of common salt (table/ cooking salt) on umbilical granuloma in infants.

Methods: This was a clinical trail carried out on 48 infants with umbilical granuloma. The parents of 48 infants with umbilical granuloma were given instruction to treat their infants at home. The treatment consisted of application of common salt on the lesion twice a day, washed 30 minutes later and repeated for 3 days.

Results: 44 out of 48 cases had perfect cure after the three day course of treatment.

Conclusion: Our data showed that use of common salt in treating umbilical granuloma is simple, cost effective, curative and safe.

Key words: Umbilical granuloma, common salt, infants.

Introduction

Umbilical granuloma is the most common umbilical abnormality in the neonate¹. It is an over growing tissue during the healing process of the belly button, usually occurs in reaction to a mild infection. Umbilical granulomas commonly come to attention of parents because of persistent drainage or moisture involving the umbilicus after the cord has dried and separate. It is not a congenital abnormality but represents continuing inflammation of granulation tissue, that has not yet epithelialized². The umbilical cord normally separate within 7 to 10 days post portum³. After cord separation there may be incomplete epithelialization over the fibromuscular ring of umbilicus and an area of beefy red tissue or granulation tissue is visible. This normal granulation tissue of the resolving umbilical stump of a new born should disappear by the 2nd or 3rd week of the life after proper hygiene. Granulation tissue can over growth and at the umbilicus can results in an umbilical granuloma. It contains no nerves and has no feeling¹. Persistent of the granuloma beyond this time will need some type of therapy⁴.

At present the therapeutic options for umbilical granuloma are 1. Chemical cauterization with silver nitrate or copper sulphate 2. Electric cauterization 3. Cryocauterization 4. Surgical excision 5. Double ligature technique. The conventional method is to do chemical cauterization with 75% silver nitrate stick or solution and copper sulphate. These are not innocuous and when applied liberally can cause minor burn in the peri-umbilical skin area.

In 1972 Schmitt⁵ in a very short note, describe the shrinking effect of common salt on umbilical granuloma. This observation has rarely made an appearance in subsequent medical literature. This study address the successful treatment of umbilical granuloma with common salt (Table/ Cooking salt).

Materials and Methods

This is a prospective study conducted in the department of Paediatric Surgery, BSMMU between January 2006 to June 2009. A total of 48 infant (3 -12 weeks) both male and female with clinically evident umbilical granuloma who sought treatment in the out patient department of Paediatric Surgery, Bangabandhu Sheikh Mujib Medical University were considered as the target group (Table-I). The parents (mostly mothers) were asked to apply a small pinch

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of table/ cooking salt over the umbilical granuloma after cleaning with cotton ball soaked in boil water and cover the area with adhesive tapes and held it in place for 30 minutes. Thereafter, the lesion would be cleansed using cotton ball soaked in boiled water. The procedure was repeated twice a day for three consecutive days. All patients were evaluated in the out patient department after 1 week and 3 week to see the effect of common salt on umbilical granuloma. The response were graded as (a) excellent response - complete regression, no discharge, heal with complete epithelialization (b) no response - no regression of umbilical granuloma, persistent umbilical discharge.

Results

A total of 48 infants were included in the study. Among the enrolled and infants were at 3-16 weeks age (Table-I).

Table-I
Age group distribution (n=48)

Age group	No. of patient	Percentage
3-8 week	26	54.2
9-12 week	16	33.3
13-16 week	06	12.5

Responses of common salt were evaluated after 1st week and 3rd week of last application. We found 44 out of 48 (91.7%) had excellent result and 4 (8.3%) had no response (Table-II).

Table -II
Response of the treatment

Response	No. of Patient	Percentage
Excellent	44	91.7
No	4	8.3

No side effects of common salt were observed in this study. The most common observation described by parents was discharge of a cherry black secretion from the lesion on the first day of therapy after which frank shrinkage and gradual healing of the lesion was apparent within three weeks. The umbilicus returned to normal in all those 44 infants.

Four patients in whom there was no response, they were subjected to surgical excision and

histopathology. Histopathology revealed that the 4 cases were umbilical polyp with well differentiated epithelial lining.



Fig.-1: Umbilical Granuloma



Fig.-2: After treatment with salt



Fig.-3: Peri-umbilical skin burn with silver nitrate

Discussion

Umbilical swelling and discharges are common in paediatric practice and may challenge the doctor's diagnostic acumen. The umbilical granuloma is the most common umbilical problem in infants. If umbilical granuloma remains untreated it could ooze and become an irritation for several months⁶. There are many treatment modalities of umbilical-granuloma such as chemical cauterization, electrocauterization, cryocauterization and surgical excision. Though all modalities of treatment had curative effect but each method have advantage and disadvantage. Cauterization with silver nitrate and copper sulphate may cause minor burn of peri-umbilical skin area which is painful⁷, cryo-cautery is expensive and complex, foul discharge and failure rates were higher with electro-cautery⁸ and surgical removal need general anaesthesia and rarely required². The natural regression of the untreated umbilical granuloma has not being documented⁴. So there is a research for an agent which is without any complication and has a curative effect. In this situation common salt (table/cooking salt) is a suitable agent for the treatment of umbilical granuloma. Common salt is potent, has no side effect, cost effective and easily available. Encouraged with the experience of others⁹⁻¹¹ we have also used common salt (Table salt) on our study population.

Total 48 infants were selected for the study. Age ranges from 3 weeks to 16 weeks. In literature the incidence of umbilical granuloma is same in both male and female⁵ which is also same in our study.

Out of total 48 infants 44 have excellent result and remaining 4 have no response. In these four patients surgical excision was done and histopathology reveals umbilical polyp.

Though our study shows 91.7% excellent response and 8.3% no response of table salt for the treatment of umbilical granuloma but 4 patients (8.3%) were finally misdiagnosed as granuloma, the actual success rate can be taken as 100%.

Umbilical granuloma is minor condition with no recognized associated anomalies and is effectively and easily managed by local application of table salt. While other umbilical conditions may present in a similar manner and be difficult to distinguish clinically as four patients in this series. They may have important associated anomalies and will not be cured with table salt. Therefore it is important to have a

logical approach to discharges and swellings of the umbilicus in order to minimize diagnostic errors and delays in the initiation of the correct treatment. The umbilical granuloma treated with common salt (table salt) usually clears within three weeks. If a complete cure is not effected within this time surgical advice should be obtained⁵.

The curative mechanism of salt when used in the treatment of umbilical granuloma is thought to be through its desiccant effect and other biologic properties, the high concentration of sodium ion in the area draws water out of the cells and results in shrinkage and necrosis of the wet granulation tissue. However this effect is not so powerful as to cause damage to normal surrounding cornified tissue when applied for a short treatment duration¹⁰.

Unlike conventional treatment with 75% silver nitrate, which may cause peri-umbilical skin burns and cloth staining and need several applications and should be treated by physician¹⁰, common salt does not have such complications and can be treated by parents. The procedure is not painful to baby as it contains no nerves and has no feeling. As well common salt is not an irritant to tissues, it has no burning effect on normal tissues. The baby cries because to being poked in the belly during application of salt.

In our study we found that umbilical granuloma is curable with table salt which proves the commonest of others. We had no complication. With the above findings our study addresses the successful treatment of umbilical granuloma with common salt (Table/cooking salt).

Conclusion

We conclude that application of common salt (table/cooking salt) to the umbilical granuloma is a simple highly effective and in-expensive form of treatment without any relapse and complications. Treatment can be performed by doctors, nurses, primary health care staffs in remote areas and even by parents.

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