

Oil massage in babies: Indian perspectives

Sandipan Dhar, Raghubir Banerjee, Rajib Malakar

Department of Pediatric Dermatology, Institute of Child Health, Kolkata, West Bengal, India

ABSTRACT

Oil massaging of the newborn has been a custom in India for ages. A variety of oils have been used for this purpose. Recently, it has gained popularity in the western countries as well.

Key words: Tactile therapy, coconut oil, baby massage

INTRODUCTION

Oil massage in infants was first introduced long back in China sometime around 2nd century BC.^[1] The benefits of touch and massage therapy is now very much evidence based. A review has suggested that massage has several beneficial effects in the form of weight gain, better sleep-wake pattern, more neuromotor development, emotional bonding, lower rates of nosocomial infection in neonates and preterm babies. Lubricant oil massage was more useful than simple touch therapy.^[2,3]

PROCEDURE AND BENEFITS

Oil massage benefits to the newborn are those related to the oil application and those related to tactile kinesthetic stimulation due to the massage. Topical oil application has been shown to improve the skin barrier function, thermoregulation and also is suggested to have a positive effect on growth. Absorption of fats through the thin skin of the preterm has also been proposed.^[4] Oil may cause adverse effects such as skin rashes and bacterial colonization.

The care givers have to be properly instructed to avoid too vigorous a massage that may cause physical injury inviting also enhanced, chances of infection. Moderate pressure massage therapy and passive movement of

the limbs have been shown to result in weight gain in preterm infants and subsequent increase in bone density. The procedure of the massage by the mother or the care giver with oils have been well-studied with the mothers doing a better job while using oils such as coconut oil and safflower oil causing better weight gain. The transcutaneous absorption of oil also increases the level of triglycerides. Increased vagal activity, is thought to help in the weight gain.^[1,5] Vagal activity, gastric motility, insulin-like growth factor I levels as a result of moderate pressure massage have a role in the weight gain.^[5]

The common protocol involves moderate pressure stroking causing tactile stimulation and flexion and extension of the upper and lower extremities constituting kinesthetic stimulation with variable sessions of 10 and 15 min.

Massage Oils

Massage with oil improves weight gain by better thermoregulation. Transcutaneous absorption is also a possible mechanism. Pure coconut oil, non-hydrogenated has 92% saturated fat. Coconut oils are saturated fats that are called oils and do not contain cholesterol.

Coconut oil is a blend of fatty acids both short and medium chain fatty acids, primarily lauric (44%) and myristic (16.8%) acids. A study compared coconut oil versus mineral oil and placebo (powder) on growth where the massage with either coconut oil, mineral oil or powder was undertaken. In this study, coconut oil massage proved to result in greater weight gain than

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ADDRESS FOR CORRESPONDENCE

Dr. Sandipan Dhar,

Flat 9 C, Palazzo, 35, Panditita Road, Kolkata - 700 029, West Bengal, India.

E-mail: drsandipan@gmail.com

mineral oil and powder. Those receiving coconut oil massage showed more length gain velocity than the powder group.^[6]

Another study demonstrated the effects of essential fatty acid (EFA) rich-safflower oil and saturated fat rich coconut oil on the fatty acid profiles of massaged infants. The triglyceride values were more in both oil and also in the controls, but increase were greater in the oil as compared with the control. Fatty acid profiles showed an increase in EFAs (linoleic acid and arachidonic acid) in the safflower oil group and saturated fats in the coconut oil population.^[7] The oil could be absorbed in neonates and is useful for nutrition.

Synthetic oil massage also has beneficial effects. Natural oils have a lesser chances of eliciting an allergic reaction. It is also seen that neonates massaged with oil showed less motor activity, less stress behavior and more increase in vagal activity and a greater decrease in saliva cortisol levels than those massaged without oil.^[7,8] It has been found that polar triglyceride and nonpolar mineral oil have been used as emollients. It is believed that oils provide moisturization. Triglyceride oils, such as sunflower or soy bean oil, may have a direct interaction with proteins that in turn may help reduce surfactant-induced irritation. Glycerol trioleate, a major component in sunflower oil, was found to bind to stratum corneum proteins and increases its flexibility much more than mineral oil.^[9]

The use of natural oils are preferred and used throughout the world as part of neonatal skin care. A current study to determine the effect of olive oil and sunflower seed oil on the biophysical properties of the skin topical application of olive oil for 4 weeks caused a significant reduction in the stratum corneum integrity and induced mild erythema in volunteers with and without a history of atopic dermatitis. Sunflower seed oil preserved stratum corneum integrity, did not cause erythema, and improved hydration in the same volunteers. In contrast to sunflower seed oil, topical treatment with olive oil significantly damages the skin barrier and therefore has the potential to promote the development of exacerbated existing, atopic dermatitis. The use of olive oil for the treatment of dry skin and infant massage should therefore be discouraged.^[10]

Mustard oil is a yellow coloured liquid derived from the seeds of mustard plant.^[11] The mustard plant belongs to the family *Brassicaceae* (formerly *Cruciferae*). It is commonly used for cooking as well as for the body and hair massage in certain parts of India. It is also

used as a flavoring agent in foods, soaps, rubefacient or counter irritant in folk medicine. Various other uses are as fungicide, repellent for cats and dogs, in Ayurvedic ointments and as a fumigant.^[11,12] Mustard oil is also found in the other plants such as cooked cabbage, cauliflower, horseradish, broccoli and nasturtium.^[12,13]

Allyl isothiocyanate is the chief antigen in the mustard oil, which is a volatile chemical, capable of causing contact dermatitis.^[11,12,14] It is released after the action of a plant enzyme, myrosinase on the thioglucoside present in the extract of the mustard powder.^[12]

Eczematous and vesicular dermatitis are known after contact with mustard oil, irritant reaction being much more common than the allergic dermatitis. Pasricha *et al.* reported contact hypersensitivity to mustard khal and oil.^[14] Contact dermatitis to synthetic oil of mustard has also been reported in the past by Gaul.^[15] Despite of its widespread use by common folks in India, the reports of contact dermatitis due to mustard oil are infrequent in our population. We believe that mustard oil contact hypersensitivity may be relatively uncommon in India.

Apart from these irritant reactions mustard oil may also cause defect in the barrier function of stratum corneum by incorporation of disproportionate lipids in the intercellular lamella.

CONCLUSION

Oil massage is a healthy and scientifically proven process which not only benefits the skin but also the growth and bonding of the baby. But improper technique or oil may be detrimental. So educating the care giver preferably mother in proper technique and use of either coconut oil or sunflower oil is recommended.

REFERENCES

1. Kulkarni A, Kaushik JS, Gupta P, Sharma H, Agrawal RK. Massage and touch therapy in neonates: The current evidence. *Indian Pediatr* 2010;47:771-6.
2. Darmstadt GL, Mao-Qiang M, Chi E, Saha SK, Ziboh VA, Black RE, *et al.* Impact of topical oils on the skin barrier: Possible implications for neonatal health in developing countries. *Acta Paediatr* 2002;91:546-54.
3. Mathai S, Fernandez A, Mondkar J, Kanbur W. Effects of tactile-kinesthetic stimulation in preterms: A controlled trial. *Indian Pediatr* 2001;38:1091-8.
4. Darmstadt GL, Dinulos JG. Neonatal skin care. *Pediatr Clin North Am* 2000;47:757-82.

5. Field T, Diego M, Hernandez-Reif M. Preterm infant massage therapy research: A review. *Infant Behav Dev* 2010;33:115-24.
6. Sankaranarayanan K, Mondkar JA, Chauhan MM, Mascarenhas BM, Mainkar AR, Salvi RY. Oil massage in neonates: An open randomized controlled study of coconut versus mineral oil. *Indian Pediatr* 2005;42:877-84.
7. Solanki K, Matnani M, Kale M, Joshi K, Bavdekar A, Bhave S, *et al.* Transcutaneous absorption of topically massaged oil in neonates. *Indian Pediatr* 2005;42:998-1005.
8. Field T, Schanberg S, Davalos M, Malphurs J. Massage with oil has more positive effects on newborn infants. *Pre Perinat Psychol J* 1996;11:73-8.
9. Mukherjee S, Trumbull, CT, Vincent C, Yang L, Lei X. A comparison between triglyceride oil and mineral oil in their ability to reduce surfactant-induced irritation and their interactions with corneum proteins and lipids. *J Am Acad Dermatol* 2011;66(Suppl 1):AB34.
10. Danby SG, AlEnezi T, Sultan A, Lavender T, Chittock J, Brown K, *et al.* Effect of olive and sunflower seed oil on the adult skin barrier: Implications for neonatal skin care. *Pediatr Dermatol* 2013;30:42-50.
11. Toxicological data on Allylthiocyanate. Available from: <http://www.ntpwm@niehs.nih.gov>. [Accessed on 2003 Dec 20].
12. Ritschell RL, Fowler J Jr. In: Fisher's Contact Dermatitis. 5th ed. Philadelphia: Lippincott Williams and Wilkins; 2001. p. 382 and 782.
13. Diamond SP, Wiener SG, Marks JG Jr. Allergic contact dermatitis to nasturtium. *Dermatol Clin* 1990;8:77-80.
14. Pasricha JS, Gupta R, Gupta SK. Contact hypersensitivity to mustard khal and mustard oil. *Indian J Dermatol Venereol Leprol* 1985;51:108-10.
15. Gaul LE. Contact dermatitis from synthetic oil of mustard. *Arch Dermatol* 1964;90:158-9.

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