CLINICAL POTENCY OF PARAFFIN WAX THERAPY

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ABSTRACT
Paraffin Wax Therapy is an integral part of Physiotherapy treatment. The basic principle of paraffin wax therapy is vasodilatation which offers therapeutic benefits. The use of Paraffin Wax as therapy has been known from centuries. The Roman physicians would pour hot Wax onto the bodies of the patients to prepare them for massage therapy. Later, the French started using Paraffin Wax by melting it and placing them over injuries to increase the rate of healing for their patients and soldiers. In the study we are trying to present all therapeutic benefits of Paraffin Wax Therapy with these points viz; Introduction, Indications, Contra-indications, Advantages of Paraffin Wax, Operation of Apparatus, Preparation of Patient, Techniques/Methods of Application, Care of Apparatus, Discussion, and Conclusion of Paraffin Wax Therapy.

KEYWORDS: Paraffin Wax, Molten Wax, Therapy, Physiotherapy.

INTRODUCTION
Paraffin Wax Bath Therapy (P.W.B.) is an application of the molten Paraffin Wax on the body part. It is one of the most convenient & effective method of applying heat to the skin. The temperature of the Paraffin Wax is maintained at 40 - 44°C. If the molten Wax at over than 44°C and is poured on the body part, it may cause burn over the body tissue. The combination of the Wax and the Mineral Oil has low specific heat which enhances the patient’s ability to tolerate heat from the wax better than from the water of the same temperature. The composition of the:-
Wax: Paraffin: Mineral Oil is 7 : 3 : 1 or Wax: Paraffin or Mineral Oil is 7 : 1.
The mode of the transmission of heat from Paraffin to the patient skin is by means conduction.

AIM & OBJECTIVES
1). to study in detail of Paraffin Wax Therapy.
2). to study the therapeutic effect of Paraffin Wax Therapy.

Indications
1. Pain and Muscle Spasm
Wax reduces the pain and muscle spasm.

2. Oedema and Inflammation
The gentle heat reduces post-traumatic swelling of the hands and feet and also swelling in hands affected by rheumatoid arthritis or degenerative joint disease, particularly in the sub-acute and early chronic stages of inflammation.

Contra-Indications
1. Impaired skin sensation
This will be determined by a hot/cold skin test.

2. Some Dermatological conditions
These are exacerbated by moist heat, such as eczema, athlete’s foot and dermatitis. Any dermatological condition, which appears after treatment, must be reported.

3. Circulatory Dysfunction
Patients with varicose veins, deep vein thrombosis and arterial disease must not have any heat applied directly over the affected part.

4. Analgesic Drugs
• If patients are taking strong narcotics for pain, the time and dosage of the drugs must be ascertained.
• Heat is not administered immediately after intake of drugs, since pain tolerance to heat is impaired.

5. Infections and open wounds
Heat will increase the infective activity.
6. **Cancer or Tuberculosis**
   In the area to be treated, heat, by increasing the metabolic rate, may increase the rate of growth and spread the disease.

7. **Gross oedema**
   With a very thin and delicate skin covering the area, the skin may be damaged and the heat may tend to increase the oedema.

8. **Lack of comprehension**
   Patients who cannot understand the nature of the treatment and comprehend the potential danger, for example, children, very old patients, other nationalities.

9. **Deep X-ray Therapy**
   Within three months prior to treatment decrease blood flow in the area and may cause impaired skin sensation.

10. **Acute injury or Inflammation**

11. **Recent or Potential hemorrhage**

**Advantages of Paraffin Wax**
1) Low specific heat allows for application at a higher temperature than water without the risk of a burn.
2) Low thermal conductivity allows for heating of tissues to occur more slowly, thus reducing the risk of overheating the tissues.
3) Molten state allows for even distribution of heat to areas like finger and toes.
4) First dip traps air and moisture (Insulation) to create more even heat distribution.
5) Oils used in the wax add moisture to the skin.
6) Wax remains malleable, after removal.
7) Comfortable, moist heat.
8) Relative inexpensive to replace wax.
9) It can be carried out at home for the chronic.
10) Sufferers.
11) Useful for patients with poor heat tolerance.
12) Two or Three patients can be treated at a time.

**Operation of Apparatus**
- The Wax & Oil should be mixed with the ratio of 7:1 or 7:3:1.
- Turn the power switch on & to the maximum, which will make the mixture to melt quickly.
- Set the thermostat to 40 – 44°C.
- It is important to check the temperature of the bath just before giving the treatment.

**Figure 1: Different Types of Paraffin Wax Instrument.**

**Preparation of Patient**
The nature of wax treatment is explained and the area to be treated is inspected for contraindication. Look for any wound, skin infection, rashes etc. on the part to be treated. Wash the area thoroughly & dry by using tissue paper or cotton. Tell the patient in brief about the temperature of the wax and benefits. Drips down few drops of molten wax on the dorsal surface of your hand or ask the patient to dip the PIP joint (Proximal Interphalangeal Joints) to check the temperature. This is done before; the patient so that he/she can prepare psychologically and fear of heat is minimized.

The patient is instructed to remove any jewelry or metal in the area. Position of the patient should be such that the part to be treated comes closer to the wax bath container. Instruct the patient to avoid touching the sides and bottom of the heating unit because burns may result. Instruct the patient who is receiving an immersion method not to move the joints that are in the liquid. The cracking of the wax will allow fresh paraffin to touch the skin, increasing the risk of burns. The warm Wax is placed on the body tissues by various techniques and the treatment is given for about 20 minutes.

**Techniques / methods of application**
1. **Dip & Immerse / Dip & Leave in Method**
   This method of application provides somewhat vigorous heating. Commonly used for the distal parts of the extremities such as hands & feet. The body part to be treated dipped 3-4 time to form a thin coat and then left immersed in Paraffin Wax for 20-30 minutes. A thin glove of solid Paraffin Wax formed slows the heat
This method is more effective in raising tissue temperature, but places the patient at greater risk for burns. Use of immersion method required cooperation and tolerance by the patient. This method does not allow for elevation of the body part being treated & an increase in edema may occur.

2. Dip & Wrap / Glove Method
It provides mild heating. It is the most widely used method. This can be used for the extremities Hands, Wrists, Feet & ankles. The therapists instruct the patient to dip the body part in a bath and then remove it until the Paraffin solidifies and repeated 8 – 12 times until thin layer of adherent solid Paraffin is formed which covers the skin. It is important to dip the part briefly otherwise the outer most coating is melted off & the thickness of wax does not build. Dipping is repeated until a thick coat is formed.

Once thick glove of wax is formed the treated area should be wrapped 1st in a plastic bag / sheet / aluminium foil and then wrapped with a towel to assist in heat retention. If oedema is concerned then area may be elevated to above the level of heart. The effective duration of this treatment is 15-20 minutes. At the end of this treatment remove the towel carefully & the wax coat by loosening the top & rolling the wax down towards the distal end of extremity. The wax coat after removal is deposited in a special container & at the end of the day it is melted & placed back in the PWB. Inspect the part & it should appear Pink, Soft & Pliable. There should not be excessive Erythema.

3. Direct Pouring Method
In this method the part is positioned over a large bowl or on top of tank itself & the molten Wax is directly poured by a mug or utensil on the part to be treated. The Wax is allowed to solidify. Several (4-6) layers can be made over the body tissues and then wrapped around by a towel to prevent heat loss. It is maintained for about 10-20 minutes & the Wax is removed into tank for reuse.

4. Brushing / Painting Method
If the part can’t be immersed in Wax, it is possible to coat the surface with the help of paint brush. It is a less commonly used method. This method is used for areas like hip, knee, elbow, shoulder and more body parts. In this method, 8-10 coats of Wax are applied to the area with a paint brush using even and rapid strokes. The area is then wrapped with towel for 10-20 minutes and after this time, Paraffin Wax is removed and discarded. This is useful if the patient can’t tolerate dry heat & hydrocollator packs are not available.
5. Towelling / Bandaging Method
A Lint cloth / towel is immersed in molten Paraffin Wax and then wrapped around the body part. Several layers can be made over the body part. This method is preferably used for treating proximal parts of the body.

Care of Apparatus
It must be cleaned regularly, because of sediment that accumulates. In order to clean the bath, the Wax must be liquid. Dip the Wax out of the bath & pour it into another container. The last of the Wax & sediment may be removed with paper towel or some absorbent rags. Replace the Wax & plug the unit in. The complete Wax & Oil should be changed every six months.

DISCUSSION
Paraffin Wax treatment is useful for medical purpose as well as skin care. It helps to bring down the aches of the body, relaxes the tired muscles. It hydrates the skin making it soft and smooth. An additional benefit of paraffin wax bath therapy is that on top of its function as a therapy modality and heat, the wax itself soothes and moisturizes the human body, the skin, opens pores, increasing blood flow, circulation and creates a general sense of relaxation and calm effect on the patients. Also, it is heavy in molecular structure, increasing blood supply to the body part being treated, trapping moisture from the underlying layers of the skin - this results in a rejuvenating, moisturizing and nourishing effect on the skin, the often soft and smooth finishing on the skin.

CONCLUSION
Paraffin Wax treatment is a form of deep heat therapy. Paraffin Wax treatment soothes chronic joint pain and relaxes stiff muscles, and improves blood flow to the treated area; it increases range of motion for people with arthritis, bursitis and other chronic conditions that cause pain and stiffness. Paraffin Wax treatments also smooth and soften dry, Paraffin Wax treatment can be part of physical and occupational therapy, and may be performed before therapeutic exercise. It can be beneficial for rehabilitation of sports injuries and other physical trauma. You can have the treatment performed during therapeutic massage.

REFERENCES