

A Comparative Review on Ancient and Modern Practices of Hair Removal

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Abstract: During this study ancient and modern practices of hair removal is to be reviewed. Presently there are so many techniques available for hair removal. The ancient procedures and tools are replaced by modern techniques and tools, an attempt has been made to compare their procedure, ease and benefits.

Index Terms: Ancient practices, Hair removal, Modern practices, Comparison, Benefits.

I. INTRODUCTION

Preparation for hair removal of unwanted hair have been known for thousands of years. Now-a-days, lot of methods like Electrolysis, Laser hair removal, Waxing and various Chemical Depilatory creams have developed for hair removal. In modern times, however rapidly increasing interest in depilatories has been noticed, brought about by changes in fashion, clothing and social customs [1]. Today, removing unwanted body hair is an increasingly prevalent trend in our society, and photo-epilation by laser or other light-based technology is the fastest-growing procedure in cosmetic dermatology [2]. Other methods for removing unwanted hair include bleaching, plucking and shaving. Shaving is the most common method followed all around the world. Threading is also a common practice in some cultures. None of these methods provide a permanent solution to unwanted hair, and can be inconvenient and tedious [3]. While the term “depilation” is applied to any preparation designed for hair removal of superfluous hair (particular hair occurring on face and legs, as well as axilla) without causing injury to skin.

This article provides an overview of modern hair removal method over ancient method.

II. HAIR FOLLICLE

A. Hair Anatomy

The hair follicle is an intricate, hormonally active structure with a programmed growth pattern (Fig.1). It is anatomically divided into the infundibulum (hair follicle orifice to insertion of the sebaceous gland), isthmus (insertion of the sebaceous gland to the insertion of the arrector pili muscle), and inferior (insertion of the arrector pili to the base of the hair follicle) segments. The dermal papilla, a neurovascular structure that supplies the cells of the proliferating matrix at the base of the follicle, helps form the hair shaft [3].

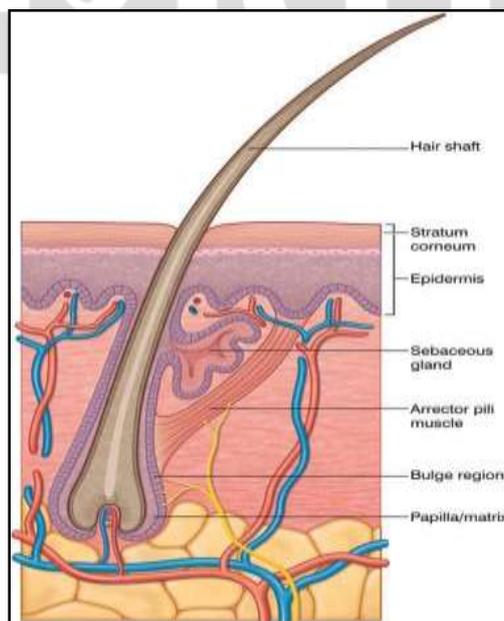


Fig.1: Hair follicle anatomy [3].

B. *Hair Growth*

Each hair follicle consists of a permanent (upper) and non-permanent (lower) part, with the follicular bulge forming the lower most aspect of the permanent part. In periods of active growth (anagen) the rapidly developing bulb matrix cells differentiate into the hair shafts and the hair lengthens. A transition period follows in which the bulbar part of the hair follicle undergoes degradation through apoptosis (catagen). A resting period (telogen) phase occurs, and regrowth is started once again in early anagen. Stem cells within the hair follicle regenerate the follicle within or near the hair bulb matrix. Slow cycling stem cells have also been found in the follicular bulge arising off the outer root sheath at the site of arrector pili muscle attachment. The duration of each growth phase is body site dependent [3, 4].

C. *Hair Life Cycle*

The life cycle of a hair consists of three phases— anagen, catagen and telogen. During the first and longest phase, called anagen, the hair actively grows. During the transitional and shortest phase, called catagen, the hair begins to destroy itself as it disconnects from the papilla. During the last phase, called telogen, the hair sheds, and the follicle rests and prepares to resume the anagen phase. This complete cycle takes an average of 4 to 12 weeks for body hair, depending on individual factors such as health, nutrients, vitamins and minerals as well as hereditary factors. All the hair on a human being is in one of these three phases at any given time [4].

D. *Technical Hair Terms*

The technical hair terms below are used to describe the hair that grow on different areas of the body:

- Capilli: Hair that grows on the scalp.
- Barba : Thick, coarse hair that grows on the face to form a beard .
- Cilia: Eyelash hair.
- Supercilia: Eyebrow hair.
- Lanug: Soft, downy hair on the body at birth.
- Vellus: Thin, soft, unpigmented hair covering the body.
- Terminal: Thicker, pigmented hair that grows on areas of the body after puberty [5].

III. ANCIENT METHODS OF HAIR REMOVAL

According to historian Russell B. Adams, no one knows when humans first engaged in the practice of hair removal. Rudimentary attempts at shaving can be traced back to prehistoric cave drawings in which depictions of men appeared without beards or other facial hair. But the basic technology of the time meant that shaving likely involved using a flint axe or sharpened animal teeth on the face, a dangerous operation [6]. The first humans were documented 2.8 million years ago. According to the researchers, some of the earliest tools discovered originate around 2.6 million years ago. Some of the earliest tools discovered originate from the last glacial period often called as “Ice Age” or, more technically the Pleistocene Epoch. This era lasted from about 1.8 million years ago to about 11,700 years ago. Around 50,000 years ago to about 10,000 years ago (the last period of stone age) is about the time period associated with development of the modern human habits [7].

- **Early Civilizations (4,000 BC - 500 BC)**

1) *Ancient Indians*

Sushruta depicted that hairs should be removed by using scissors, razors or forceps. Two parts of ash of Shankh (conch), one part of Harital macerated in vinegar and applied on the area is the best remedy to make the hairs fall off. Oil of Bhallataka together with milky soap of Snuhi is also the best to ward off hairs. Kadali, Dirghavrinta made into ash applied removes the hairs. Tail of Agargodhika (house lizard) along with Rambha (Kadali), Ala and seeds of Ingudi should be burnt together to make ash. This ash mixed with oil and cooked in sunlight and applied on the area removes hairs [8]. While beard growing was the norm for many Hindu sects, a few practiced shaving similar to Romans.

2) *Mesopotamia*

The civilization of Mesopotamia is actually made up of several including Assyria, Babylon, and Ancient Persia. The Mesopotamian civilization began to flourish at roughly 3000 BC. We know from archeology that they grew to be one of the most advanced civilizations on the earth at the time. As a society, they accomplished many amazing things. Perhaps the most notable of these achievements is, of course, a written language and number system known as cuneiform. Historians speculate that this occurred around 3200 BC. They also invented the wheel, mathematics, sailboats, astronomy, and more. Not only were the Mesopotamians great inventors and scientists, they were also very stylish. For me when I think of Mesopotamia the first image in my head isn't cuneiform or the wheel, it's those amazing grape-bunch beards in all the sculptures. Many historians stated that the Mesopotamians were the first true hairstylists. There are some archeological evidence that suggested dyes, combs, and metal hair fixtures were common among nobleman. Mesopotamian men, in particular, seemed to pay extra attention to the hair on their faces and heads. Before those fantastic beards came into fashion, evidence suggests that the Mesopotamians were clean shaven like the Egyptians. Historians are unsure of whether being clean-shaven became taboo or if was still accepted as a norm. There are numerous ancient texts that seem to contradict each other on this matter. Evidence suggests, however, that having unkempt hair was not socially

acceptable [9]. When it comes to body hair there are equally contradicting ancient texts. Some suggest women were proud of their pubic/body hair because it was a sign of maturity.

3) *Egyptians*

Historians and archeologists agree that the first settlements in Egypt were likely started around 3500 BC. There are a lot of similarities between these two civilizations. Both began around the same time, both founded their first settlements around rivers, both were started in dry aired climates, and of course, hair removal. During the early part of Egyptian civilization, Egyptians grew out their beards, braided them, and adorned them with gold. But being hairy began to fall out of favor until by the dynastic period everyone was trying to be a hair free as possible. Some of the primary methods the ancient Egyptians employed for hair removal were razors, pumice stones, and depilatory creams and pastes. These razors were typically made from copper or bronze. Typically, a barber would most likely first wet the hair and possibly apply an oil or cream of his own making, then use a razor for as close a shave as possible. Once the shaving was finished the pain began. Pumice stones were then used to rub off the remaining bits of hair, this would be done by the barber. Depilatory creams were also used in ancient Egypt. There is some evidence of arsenic-based creams that killed hair follicles, as well as sugar-based pastes that would act like wax in removing hair. Ancient Egypt was a place of innovation when it came to hair removal, they took it seriously for many reasons. Some of their innovations have lasted the test of time and are with us today. To this day sugaring is attributed to the ancient Egyptians. The upper class and royalty would use tweezers made from sea shells, pumice stones, beeswax and sugaring method. They even had razors made of bronze or flint. The practice of hair removal was huge deal for their time period. And now these methods have been modernized a lot of their methods, especially the body sugaring [7, 9].

4) *Romans*

Ancient Romans seemed to always try to differentiate themselves from the ancient Greeks. Ancient Romans preferred to be more clean shaven more than the ancient Greeks. Perhaps as a way to separate themselves from the ancient Greeks. Romans in general teased the Greeks for their beards. There are many ancient texts that point fingers at older men with full beards that said in effect "Having a beard doesn't make you wise." Being clean-shaving became so important in ancient Rome that some ancient texts even speak of a coming-of-age religious shaving ritual. Romans invented shaving, a flint razor dates the first smooth face to at least 18,000BC, and by 3000BC copper razor blades were doing the rounds. As for what passed as a razor blade during the age of Rome, there appears to have been a number of avenues. Flat-Faced steel razors that look more like paint scraper and developed from much earlier copper and bronze designs were certainly in vogue [8, 9]

- **Ancient tools used for Hair Removal**



Fig.2: Egyptian razor [7]



Fig.3: Roman razor [7]



Fig.4: Stone age tools [7]



Fig.5: The Siberian Razor [7]



Roman Iron Razor

Fig.6: Roman Razor [11]



Roman Razor with Bronze Handle

Fig.7: Roman Razor with Bronze handle [11]

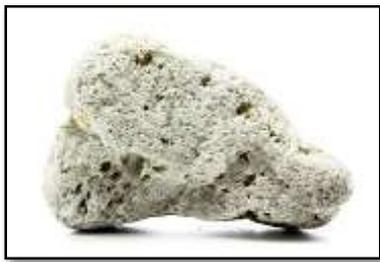


Fig.8: Pumice stone [12]

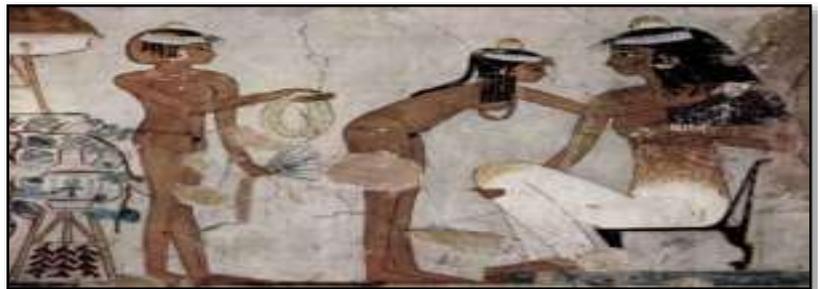


Fig.9: Removal of hair by Sea Shells [13]

IV. MODERN METHODS OF HAIR REMOVAL

- THE BIRTH OF MODERN HAIR REMOVAL**

Jean Jacques Perret invented the first straight razor for men in 1760.



Fig.10: The very first invented Razor for men [10]

He created an L-shaped wooden razor guard that helped reduce the damage of shaving. After this, Dr. Gouraud created one of the first depilatory creams in the United States called Poudre Subtile in 1844. Poudre Subtile was more powdery in substance than the creams that are available today. Depilatory creams chemically dissolve hair, and the method is widely popular today with brands such as 'Veet'.

Following are Modern methods of Hair removal:

- Electrolysis**

The Electrolysis method has remained the only treatment to achieve permanent and complete eradication of unwanted hair. In electrolysis, it is insertion of a very fine disposable, sterile probe into the hair follicle, a natural opening in the skin. The skin is not pierced and does not scar. During the course of treatments there will be a constant, gradual decrease in hair growth until it has all been permanently removed. The no. of treatment differ from person to person. This treatment can be used on any part of the body. It is mostly used on bikini area, back and abdomen [14]. There are two methods of electrolysis or hair removal that utilize electrical current. First is Galvanic electrolysis, also called the multiple- needle method and second is Thermolysis or the High Frequency/short- wave method.

Galvanic Electrolysis: The Galvanic electrolysis method destroys the hair by decomposing the papilla. In Galvanic electrolysis, 12 to 14 needles, or probes, are inserted into individual follicles at a time. For this reason, Galvanic electrolysis is sometimes called the "multiple-needle" process. A low-level current passes into the needle and causes a chemical reaction in the cells of the papilla. The current is typically on for 30 seconds to 2.5 minutes.

Thermolysis: The thermolysis or high frequency/short-wave electrolysis method involves inserting a single needle (probe) into the follicles. The current travels to the papilla for less than a second, resulting in a coagulation of the cells that destroys the papilla. The hair is immediately tweezed from the follicle. Because the time and intensity of the current are controlled, preferably by an automatic timer, the client feels only a tiny "flash" of heat. Redness or a slight bump in the skin are normal reactions and disappear in two to three days. The wire used in short-wave electrolysis is substantially finer than the electrolysis probe, further reducing client discomfort [15].

ii. *Photo- Epilation or Pulsed Light*

Photo epilation or pulsed light uses a similar principle as lasers, but this type of light is not considered to be a laser light. An intense pulsed light beam creates a burst of energy used to destroy hair bulbs with minimal scarring. Both lasers and pulsed light are a form of light beam. The difference between the two is that a laser is a constant beam of light and the pulsed is not constant. Both methods carry the risk of scarring, but there is much less a chance of burning or scarring when using pulsed light since it is targeted at the skin in quick, short intervals. The benefit of this type of treatment is that large areas of the body such as the back or legs can be treated rapidly [15].

iii. *Laser Hair Removal*

Laser hair removal has steadily developed and improved. Basically, laser hair removal is a medical procedure that utilizes laser light, which is an intense, pulsating beam of light to remove undesirable hair. Laser hair removal has been used for cosmetic procedures and also medical problems. To thermally destroy the hair follicle without harming the surrounding skin tissue, the laser has to target the melanin in the hair follicle with a specific wavelength in the 600-1100nm range. In recent years, selective photo thermolysis based on laser light has been introduced into the aesthetic market for hair removal procedures. Epilation procedures are frequently used in cosmetic procedures to remove hair from unwanted places. While selective absorption of light by hair chromospheres causes damage to hair follicles, it leaves the surrounding skin undamaged. This is based on the selective photo thermolysis theory. Various types of lasers with different wavelengths and properties were modeled to determine which laser would be the most effective in destroying the hair follicle to prevent growth of hair after hair removal treatments. The laser that both satisfies the criteria for hair destruction, while causing minimal damage to the surrounding skin is the most effective one for use in unwanted hair removal treatments. The benefit of laser is that it can treat hundreds of hair follicles simultaneously, generally making the process quicker than electrolysis. Laser treatment works best on hair that is in the anagen, or growth, stage. Therefore, while one laser treatment may have long-lasting effects, repeat treatments are necessary for best results, to catch all of the hairs as they enter the anagen stage [16, 17].

iv. *Epilating devices*

An epilator is an electrical device used to remove hair by mechanically grasping multiple hairs simultaneously and pulling them out. The way in which epilators pull out hair similar to waxing, they do not remove cells from the epithelium of the epidermis [18].

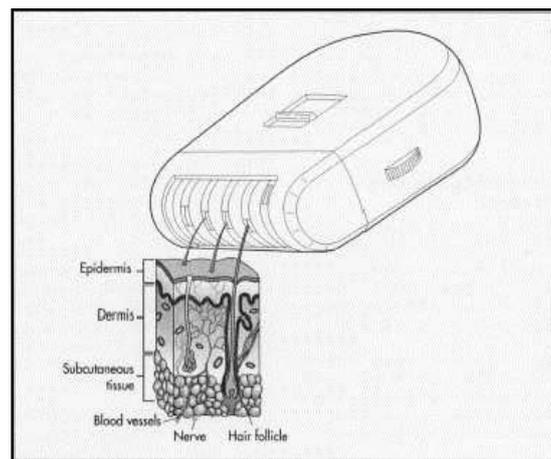


Fig.11: Epilator [19]

v. *Hair Removal or Depilatory Creams*

A chemical depilatory is a cosmetic preparation used to remove hair from the skin. Common active ingredients are salts of thioglycolic acid and thiolactic acids. These compounds break the disulfide bonds in keratin and also hydrolyze the hair so that it is easily removed [20]. The chemical breakdown of superfluous hair without injury to the skin. The advantage of such preparations is that they avoid any danger of cutting or abrading the skin in regions such as the underarms, where it is difficult to see the area clearly and even more difficult to guide a razor over the complicated contours. There is also a widespread belief that shaving increases the rate of hair growth or the coarseness of the hair. Although these beliefs are unfounded intact, chemical depilatories

have the apparent advantage that they discourage the re-growth of hair if they are applied regularly. There seems to be no scientific explanation for this, but possibly it arises from a gradual removal of keratinous debris from the mouth of the hair follicle, which allows removal of the hair at a deeper level. Since the hair shaft is of similar composition to the skin, a small degree of local damage may occur as the result of applying such preparations, particularly if the depilatory is kept in contact with the skin for any length of time and the pH is sufficiently high, when the horny layer of the skin will also be attacked. Provided that the skin is reasonably healthy, that is the time of application of the depilatory cream. In formulating depilatory preparations, therefore, care should be taken to ensure that they will react with the hair preferentially and that their effects will be sufficiently rapid to cause disintegration of the hair before causing any damage to the underlying and surrounding skin [21].

Table no.1: Difference between Ancient and Modern Practices of Hair Removal

ANCIENT PRACTICES OF HAIR REMOVAL	MODERN PRACTICES OF HAIR REMOVAL
These methods were easy to adapt at no cost.	These methods are expensive.
Painful methods (e.g. using pumice stones)	Painless methods (e.g. depilatory creams)
Time consuming and does not give fair results.	These methods do not take much time but give good results.
Side effects on skin are boils, peeling of skin, skin rashes which is mostly due to the abrasive action.	Side effects are skin irritation, chemical burns, skin sensitization.

V. CONCLUSION

According to the study, it can be concluded that although the modern methods are costly and a little time consuming they are preferred more than those ancient methods, as they are painless, effortless and mostly give good and satisfactory results when performed. Due to modern practices permanent hair removal methods like Electrolysis and Laser hair removal are in demand.

VI. ACKNOWLEDGMENTS

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