

LEPROSY IN ANCIENT INDIAN MEDICINE

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INTRODUCTION

Leprosy is known to have been prevalent since ancient times in India, China, and Africa, and it was prevalent in the middle ages in Europe. Statements have often been made to the effect that references to leprosy are found in the ancient literatures of these countries. In India, the term "Kushtha" occurring in the Vedas has been believed by some workers to relate to leprosy. In China there is no definite reference to the existence of leprosy in the ancient literature of the country, but there is a tradition that a disciple of Confucius died of leprosy about 600 B.C. A reference to leprosy is believed to have been made in an Egyptian record of 1350 B.C. describing the occurrence of leprosy among the Negro slaves from Sudan and it has often been stated that leprosy has been described under the term "Uchedu" in the "Ebers Papyrus" written about 1550 B.C. Several workers have stated that a reference to leprosy is found in the Bible; the term "Zaraath" of the Old Testament and "Lepra" of the New Testament have been considered to refer to leprosy.

The difficulty in accepting most of these statements lies in the fact that the references in question either do not contain any clinical description or the description does not correspond to leprosy as we know it today. There is no mention of numbness or of loss of skin sensation, or of manifestations of the nodular type of leprosy. The authenticity therefore has been questioned of most of the statements regarding the existence of leprosy in ancient literatures of the various countries.

It is doubtful whether the "Uchedu" of Ebers Papyrus refers to leprosy. Ebel (1935) has made a special study of the Egyptian records, particularly the Ebers Papyrus, and he is of the opinion that the term "Uchedu" of the Papyrus which means a pus disease cannot be identical with leprosy. He, however, states that in other parts of the same Papyrus leprosy is described under the term of "Chon's Swelling." The description of the "Chon's Swelling" which affects only the limbs, does not correspond to the symptoms of leprosy. It is, therefore, difficult to identify either "Uchedu" or "Chon's Swelling" with leprosy.

Similar objections are applicable to the biblical references to

leprosy. The "Zaraath" or "Lepra" of the Bible is characterized by the presence of white spots situated slightly below the level of the surrounding skin, with the hair in the patch turned white. There is no mention of numbness or of loss of skin sensation or of manifestations of leprosy of the nodular type. It is believed that the term "Zaraath" or "Lepra" was used for a number of scaly skin diseases such as psoriasis. If the term included leprosy at all, it could have covered only the mild variety, and not the nodular type which was prevalent to a much greater extent. Lie (1938) has discussed the matter in detail and has concluded that a study of the Bible does not prove that leprosy existed among the ancient Jews, although he finds it difficult to believe that the disease was not actually found in them.

Regarding their authenticity, the references to leprosy in the ancient literature of India, however, stand out as a contrast since the clinical description of the disease given therein includes sensory changes and deformities, and one can therefore feel sure that it actually refers to leprosy as we know it today. The most ancient of the Indian medical writings are those of Charak, Sushruta, and Vag Bhatta. The present recension of the Sushruta Samhita was probably compiled about 600 B.C., but it embodies traditional knowledge from still more ancient times. Charak's work is considered to have been compiled even earlier, while Vag Bhatta's compilation is of a little later date. References to leprosy are found in all of these ancient medical writings, specially the Sushruta Samhita. Referring to the description of leprosy in the Sushruta Samhita, Lowe (1942) in his article "Comments on the History of Leprosy" makes the following statement: "This is actually the most valuable ancient reference which I have been able to trace, and it is also in many ways the most accurate and complete of the old descriptions. Under different heads it describes most of the signs and symptoms of leprosy, even in its milder form, with which we are familiar today."

References to leprosy are found in much earlier literature, for instance in the Manu Smriti and in the Vedas, but in the absence of clinical description we cannot feel sure that the term mentioned there refers to leprosy. In the present article, I will first make a reference to the description of leprosy found in the Sushruta Samhita, and then very briefly deal with the possible references to the disease in the Manu Smriti and in the Vedas.

LEPROSY IN THE SUSHRUTA SAMHITA

A very good account of the clinical features and the treatment

of the disease is found in the Sushruta Samhita. The account of the etiology of the disease is also interesting.

Clinical features.—References to the clinical features of leprosy are found under two separate sections of the book; first in the chapter on Diseases of the Nervous System, and second in the chapter on Diseases of the Skin. In the chapter on the Diseases of the Nervous System, the terms Vat-Rakta or Vat-Shonita appear to refer to one type of leprosy (both Rakta and Shonita mean blood so that Vat-Rakta and Vat-Shonita have the same meaning and significance). In the chapter on the Diseases of the Skin a reference to leprosy is found under the name Kushtha. Kushtha is the name applied to skin diseases in general; the skin diseases included in the group are divided into two sub-groups, the Maha (major) Kushtha, and the Kshudra (minor) Kushtha. The Maha Kushtha includes seven varieties, and one of these (Arun-Kushtha) is characterized by loss of sensation to touch. Obviously this type refers to leprosy. It will be seen that the term Kushtha, which is now used specifically for leprosy, was used in ancient Indian medicine to indicate skin diseases in general including leprosy.

Vat-Rakta or Vat-Shonita is characterized by the presence of hyperesthesia, sensation to pins and needles, anesthesia, and loss of perspiration in the affected parts. A pricking pain may be experienced, the skin of the affected parts may spontaneously burst open, and there may be curvature of fingers, etc.

Arun-Kushtha (the type of Kushtha which appears to refer to leprosy), is characterized by the appearance of slightly vermilion-colored spreading patches; a sort of pricking pain is experienced in the affected parts which lose all sensibility to touch. Two sub-types of Arun-Kushtha are described; in one the prominent symptoms are anesthesia and deformity of the limbs, while in the other type the prominent symptoms are suppuration of the affected part, breaking down of local skin, falling off of fingers, and sinking of nose.

A consideration of the symptoms described under Vat-Rakta or Vat-Shonita, and the two sub-types of Arun-Kushtha makes one believe that the descriptions refer to leprosy. Here we find a description which corresponds to the clinical manifestations of leprosy as we know it today; there are references to anesthesia, hyperesthesia, lack of sweating, deformity of limbs, ulceration, falling off of fingers, and sinking of nose.

Further, Sushruta's description of the symptoms in the different types of the disease reminds one of the types of the disease which are recognized today; Vat-Rakta or Vat-Shonita with hyper-

esthesia, paresthesia, anesthesia and deformity of fingers, etc., would roughly correspond to the present neuro-anesthetic type; the variety of Arun-Kushtha with anesthetic patches to the present neuro-macular type, and the variety of Arun-Kushtha with supuration, ulceration, and falling off of fingers, to the lepromatous type.

Treatment—It is interesting to note that chaulmoogra oil which has been our mainstay in the treatment of leprosy, and which was introduced into Western Medicine only recently, has been used in the treatment of leprosy in India from ancient days. A reference to this is found in the Sushruta-Samhita wherein Tuvarka is mentioned as a potent remedy against leprosy. Verse 10 of chapter XIII of the Chikitsasthan (the part of the book dealing with the treatment of diseases) describes the use of Tuvarka in the treatment of leprosy. It says that the regular use of Tuvarka seeds cleanses the system of the patient and is a potent remedy against Kushtha. The oil expressed from Tuvarka seeds is to be taken by mouth and is to be used externally for rubbing the affected parts.

There has been some confusion regarding the identity of Tuvarka. Most of the modern writers on Hindu medicine have identified Tuvarka oil with chaulmoogra oil that has been and is still being sold in the bazaars. To the beginning of this century, it was considered that chaulmoogra oil of commerce was derived from the seeds of *Gynocardia-odorata*. It is, however, known now that the actual source of the oil is *Taraktogenos-kurzii*. Tuvarka has therefore been translated as *Gynocardia-odorata* by the earlier writers and as *Taraktogenos-kurzii* by the later writers.

A study of the Sushruta Samhita, however, makes one believe that the Tuvarka of Sushruta is not *Gynocardia-odorata* or *Taraktogenos-kurzii*, but is *Hydnocarpus wightiana*. In chapter XIII of the Chikitsasthan of the Sushruta Samhita there are verses describing the habitat of the plant, the collection of its seeds, and the preparation of the oil from them. The verse dealing with the habitat says that the Tuvarka plant grows on the shores of the western sea and is constantly tossed about by winds raised by the waves of the sea. This description of the habitat would clearly indicate that the plant grows in the southwestern parts of India near the shores of the sea. This description hardly fits in with the habitat of *Gynocardia-odorata* or *Taraktogenos-kurzii* which grow on hills in the northeastern parts of India and Burma, while it would fit in very well with the habitat of *Hydnocarpus wightiana* which is known to grow in the southwestern parts of India.

During the last 20 years for various reasons *Hydnocarpus*

wightiana oil has almost entirely replaced the true chaulmoogra oil of commerce in the treatment of leprosy, and it appears that this is a reversion to the practice of the ancient Hindu physicians.

Etiology— Before describing Sushruta's views regarding etiology of leprosy, it is desirable to refer briefly to the conception of Azurveda (the Indian Science of Medicine, literally the Science of Life) regarding the causation of disease in general. According to Azurveda, all diseases are considered to have their origin in contamination of the blood with deranged humors—Vayu, Pittam, and Kapham. It is essential that one should clearly understand what is meant by these terms in Azurveda. Vayu, Pittam, and Kapham have often been translated into English as Air, Bile, and Phlegm respectively, whereas in the Azurvedic terminology they refer to the different functions of the body. The term Vayu is used in the sense of nerve force, and is so called because of its sensory and motor functions. The term Pittam is used to indicate all metabolic processes in the organs, whether constructive or destructive. Kapham refers to that portion of lymph-chyle which fills all the intercellular spaces of the body. Vayu, Pittam, and Kapham, the three humors as they are called, in their normal and balanced state are considered to be the three supporting pillars of the body. When their equilibrium is disturbed so that one is abnormally augmented and dominates over the other two, pathological conditions are said to arise and cause disease. The humors are then said to be deranged, and it is the deranged bodily humors that are considered to be at the bottom of all pathological conditions.

It is the derangement of Vat or Vayu (the nerve force) which is considered to be mainly responsible for the production of leprosy, as is evident from the terms Vat-Shonita or Vat-Rakta. But the other humors may also be deranged and may then modify the symptoms. The main symptoms are therefore sensory (because of the derangement of Vayu), but there may be ulceration, suppuration, etc., because of the derangement of the other humors.

Kushtha is considered to be a highly contagious disease. Sushruta considers the disease to be transmitted from the diseased to healthy persons by the touch or breath of the patient, by sharing the same bed and by eating and drinking out of the same vessels with him, or by using the wearing apparel, garlands, etc., previously used by the patient. It is interesting to note that all the modes of transmission described by Sushruta imply close contact with the patient; the modern leprosy workers also believe close contact with a patient of leprosy to be the most common method of transmission of the disease.

While describing the disease as highly contagious, Sushruta has at the same time considered it as hereditary. Nobody would subscribe to leprosy being hereditary in the ordinary sense, but it would be interesting to note that among the present leprosy workers also there is a tendency to recognize two factors in the etiology of leprosy — infection with the leprosy bacillus, and susceptibility of the patient which may be inherited.

In the description of the causation of the disease, Sushruta has brought in something which the modern workers cannot agree with, and which is responsible for the unsympathetic attitude toward persons suffering from leprosy, occasionally seen. Sushruta mentions that wise men held that sometimes a man is cursed with this dreadful disease by way of divine retribution for acts like killing a Brahmin, or a woman, or one of his own relatives, etc.

LEPROSY IN THE EARLIER LITERATURE

A reference to Kushtha is found in much earlier literature, for instance in the *Manu Smriti* (Laws of Manu) and the Vedas. The *Manu Smriti* is considered by various European scholars to have been written from 500 to 1300 B.C., but in India it is popularly regarded as of great antiquity. The Vedas are considered as of extreme antiquity.

In the absence of clinical description in the *Manu Smriti* and the Vedas, we cannot feel sure that the term mentioned there refers to leprosy, since we have seen that this term has been used in ancient Hindu medicine as a general term to indicate all the skin diseases, though at the present time it is specifically used for leprosy. The context, however, makes it very probable that leprosy is actually meant in the *Manu Smriti*.

A study of the *Manu Smriti* would make one believe that Kushtha, as used therein, refers to a serious disease. In Book VIII, verse 205, it is stated that if a man giving a girl in marriage has openly declared that she is insane, afflicted with Kushtha or not a virgin, that man is not liable to punishment. Again in Book III, verse 7, Manu forbids marriages into families whose members are subject to certain diseases and defects, and Kushtha is one of these. The fact that the great law-giver Manu considered Kushtha such a serious disease would clearly indicate that by Kushtha he did not mean the ordinary skin diseases.

In the Vedas, however, the term Kushtha does not appear to have been used for leprosy. In Book I, rhymes 22 and 23 of the *Atharve Veda*, there is a reference to an herb which makes the pale and white patches of Kushtha disappear. It appears that the term Kushtha as used in *Atharve Veda* does not refer to leprosy.

CONCLUSIONS

From the above descriptions of leprosy, especially in the Sushruta Samhita which is at least 2500 years old, one would conclude that leprosy was well known and well described in ancient India. In the descriptions of Sushruta we find a mention of the signs and symptoms by which we can feel sure that the description refers to leprosy as we know it today; there is also a mention of the treatment of leprosy with chaulmoogra oil, which has been our mainstay for the treatment of the disease even up to the present. The ancient literature of no other country contains such authentic and such a complete description of leprosy.

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