Ancient skeleton in India bears evidence of leprosy

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LEIPZIG, GERMANY: The oldest known skeleton showing signs of leprosy has recently been found in India and may help unravel the myth of where the disease originated. In the journal PLoS One, Assistant Professor Gwen Robbins, an anthropologist at Appalachian State University in the US, and researchers in India describe a middle-aged adult male skeleton demonstrating signs of leprosy in skeletal material, such as tooth loss and root exposure.

Historians have long considered the Indian subcontinent to be the source of the leprosy that was first reported in Europe in the fourth century B.C., shortly after the armies of Alexander the Great returned from India. The 4,000-year-old skeleton was found near Udaipur in northwestern India. The authors say their find confirms that a passage in the Atharva Veda, a set of Sanskrit hymns written around 1550 B.C., indeed refers to leprosy.

The bacterium that causes leprosy seemed to have spread worldwide from a single clone, biologists reported three years ago. But because of insufficient samples, they could not determine whether the bacterium was disseminated when modern humans first left Africa about 50,000 years ago or spread from India in more recent times.

Other biologists have contended that because the bacterium is not easily transmissible, requiring prolonged intimate contact between people, it would not have started to spread until around the third millennium B.C., when people started living in dense populations in cities and long-distance trade sprang up.

Dr Helen D. Donoghue, an infectious disease specialist at University College London, said the finding was fascinating and fits in with the theory that Alexander’s army had brought leprosy back from its campaigns in India.

Leprosy is still common in many countries, especially in temperate, tropical, and subtropical climates. India has the largest number of leprosy patients in the world. The number of new cases of leprosy recorded by official services was 158,000 in 2007, but there are some two to three million people who have had to endure the disabilities caused by leprosy throughout their lives.

Leprosy is a chronic infectious disease caused by Mycobacterium leprae that affects almost 250,000 people worldwide. It is not very contagious and has a long incubation period, which makes it difficult to determine where or when the disease was contracted.

Leprosy has two common forms, tuberculoid and lepromatous. Both forms produce sores on the skin, but the lepromatous form is the most severe, producing large, disfiguring nodules (lumps and bumps).

All forms of the disease eventually cause peripheral neurological damage, which results in sensory loss in the skin and muscle weakness. People with long-term leprosy may lose the use of their hands or feet, owing to repeated injury resulting from a lack of sensation.

Effective medications exist, and isolation of victims in ‘leper colonies’ is unnecessary. The emergence of drug-resistant Mycobacterium leprae and an increased number of cases worldwide have led to global concern about this disease.

Editorial note: For the original article, please go to: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0005669.