

History Of Dentistry

Archaeological evidence shows that dental caries is an ancient disease dating far into prehistory. Skulls dating from a million years ago through the neolithic period show signs of caries, excepting those from the Paleolithic and Mesolithic ages. The increase of caries during the neolithic period may be attributed to the increase of plant foods containing carbohydrates. A wooden bow drill available in the neolithic period would have been able to make a hole in a tooth to relieve an abscess in 5½ minutes. The beginning of rice cultivation in South Asia is also believed to have caused an increase in caries. A Sumerian text from 5000 BC describes a "tooth worm" as the cause of caries. Evidence of this belief has also been found in India, Egypt, Japan, and China.

Unearthed ancient skulls show evidence of primitive dental work. In Pakistan, teeth dating from around 5500 BC to 7000 BC show nearly perfect holes from primitive dental drills. References to caries are found in the writings of Homer and Guy de Chauliac. The Ebers Papyrus, an Egyptian text from 1550 BC, mentions diseases of teeth. During the Sargonid dynasty of Assyria during 668 to 626 BC, writings from the king's physician specify the need to extract a tooth due to spreading inflammation. During the Roman occupation of Europe, wider consumption of cooked foods led to a small increase in caries prevalence. The Greco-Roman civilization, in addition to the Egyptian, had treatments for pain resulting from caries.

The rate of caries remained low through the Bronze and Iron ages, but sharply increased during the Medieval age. Periodic increases in caries prevalence had been small in comparison to the 1000 AD increase, when sugar cane became more accessible to the Western world. Treatment consisted mainly of herbal remedies and charms, but sometimes also included bloodletting. The barber surgeons of the time provided services that included tooth extractions. Learning their training from apprenticeships, these health providers were quite successful in ending tooth pain and likely prevented systemic spread of infections in many cases. Among Roman Catholics, prayers to Saint Apollonia, the patroness of dentistry, were meant to heal pain derived from tooth infection.

There is also evidence of caries increase in North American Indians after contact with colonizing Europeans. Before colonization, North American Indians subsisted on hunter-gatherer diets, but afterwards there was a greater reliance on maize agriculture, which made these groups more susceptible to caries.

In the medieval Islamic world, Muslim physicians such as al-Gazzar and Avicenna (in The Canon of Medicine) provided the earliest known treatments for caries, though they also believed that it was caused by tooth worms like what the ancients believed. This was eventually proven false in 1200 by another Muslim dentist named Gaubari, who in his Book of the Elite concerning the unmasking of mysteries and tearing of veils, was the first to reject the idea of caries being caused by tooth worms, and he stated that tooth worms in fact do not even exist. The theory of the tooth worm was thus no longer accepted in the Islamic medical community from the 13th century onwards.

During the European Age of Enlightenment, the belief that a "tooth worm" caused caries was also no longer accepted in the European medical community. Pierre Fauchard, known as the father of modern dentistry, was one of the first to reject the idea that worms caused tooth decay and noted that sugar was detrimental to the teeth and gingiva. In 1850, another sharp increase in the prevalence of caries occurred and is believed to be a result of widespread diet changes. Prior to this time, cervical caries was the most frequent type of caries, but increased availability of sugar cane, refined flour, bread, and sweetened tea corresponded with a greater number of pit and fissure caries.

In the 1890s, W.D. Miller conducted a series of studies that led him to propose an explanation for dental caries that was influential for current theories. He found that bacteria inhabited the mouth and that they produced acids which dissolved tooth structures when in the presence of fermentable carbohydrates. This explanation is known as the chemoparasitic caries theory. Miller's contribution, along with the research on plaque by G.V. Black and J.L. Williams, served as the foundation for the current explanation of the etiology of caries.



An image from 1300s (A.D.) England depicting a dentist extracting a tooth with forceps.