

OBSTETRICS IN MEXICO PRIOR TO 1600*

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OBSTETRICS is the most ancient of the medical arts. Childbirth, in all ages and in all lands, has been surrounded by superstition and accompanied by ritualism. The indigenous peoples of Mexico were no exception in this regard.

The long history of Mexican medicine, including that of obstetrics, is entirely different in one of its aspects from that of any other country. The Indian tribes, occupying America north of the Rio Grande, had their own systems of medicine, theological and domestic. These have made no impression upon modern medicine. We have acquired a limited knowledge of the surgical skill of certain tribes as a result of the study of skeletal remains exhumed in various parts of this territory. They have left no medical literature. A few early explorers have recorded their observations concerning the treatment of disease among the Indians with whom they came in contact. The first publication of this character was Jacques Cartier's "Brief recit, & succincte narration," Paris, 1545. This contains a three-page list of the names of the parts of the body in Huron. There are a few passages in the text which have some slight interest to medical historians.

In Mexico, however, the medical arts of the indigenes were gradually merged with those of the conquering Spaniard, resulting in a continuity unknown under similar circumstances elsewhere. Mexican obstetrical history

has a printed literature extending over a period exceeding four centuries. The first medical work to be published in the New World, Francisco Bravo's "Opera medicinalia," printed in Mexico City in 1570, contains references to native drugs used in parturition, its sequelae and complications. References to obstetrics in Mexico are found in non-medical works as early as 1524. In Mexico there is a still earlier literature of interest to medical historians and this literature includes material relating specifically to obstetrics.

Much has been written concerning the pre-Columbian civilizations of Mexico and of Central America. This subject cannot be discussed here at any length. No attempt should be made to investigate the medical history of this period without first acquiring a general knowledge of Mexican ethnology, archeology, and linguistics.

When the French, the English, and the Dutch came into contact with the native races through exploration and subsequent colonization of the North Atlantic coast of America they encountered tribes in a cultural state radically different from that of the peoples with whom the Spanish were concerned in Mexico. The former, it is true, had advanced beyond a state of nomadic barbarism. Their progress was largely in the political field. Our knowledge of their religious beliefs, medicine, and history has come down to us in the form of oral legends. The written literature, if such it may

* Read before the San Francisco Medical History Seminar, February 2, 1931, Bohemian Club.

be called, consists solely of a few crude pictographs and certain records in the form of wampum belts, etc. These

hazy. Did a cataclysm engulf ancient Atlantis and a few survivors make their way to Mexico where they im-



FIG. 1. TITLE-PAGE OF THE FIRST MEDICAL BOOK PUBLISHED IN THE NEW WORLD, THE "OPERA MEDICINALIA" OF FRANCISCO BRAVO, PRINTED IN MEXICO CITY IN 1570. THE WOODCUT BORDER, BEARING THE DATE 1549, HAD BEEN USED ON THE TITLE-PAGE OF OTHER BOOKS. FROM THE COPY BELONGING TO THE LATE DR. NICOLÁS LEÓN OF MEXICO.

are entirely without significance in medical history.

When Cortes reached Mexico, a considerable measure of retrogression had already taken place from a state of civilization and culture which we know must have previously reached a height comparable with that of ancient Egypt and Greece. The chronology of this pre-Columbian era is very uncertain. We do not know whether we are concerned with a few centuries or with many. Origins too are equally



FIG. 2. PARTURITION AS PICTURED BY THE ANCIENT MEXICANS. PEN REPRODUCTION FROM THE *Codex Nuttall*.

posed their culture upon the aboriginal inhabitants whom they found there? Did these same Atlanteans find Mexico an uninhabited land and were they later over-run by barbarians from the North? Did the ancient Mexican culture drift from Asia across the Pacific, make a slow progress overland by way of Siberia and Alaska, or by way of the stepping stones of Oceanica? Is it possible that we have to do with an indigenous culture; that the resemblances between the artifacts of Mexico and those of Egypt and China are due to like causes producing like results? Such questions for the present must remain unanswered.

Unless future archeological investigations bring to light new examples of the indigenous literature of pre-Columbian Mexico containing information relating to obstetrics our knowledge of the subject must be limited to data derived from two sources: (1) surviving texts from this early period written in various hiero-

glyphic forms, and (2) deductions made from practices persisting among the inhabitants of the country and carried over from the period prior to contact with Europeans.

The surviving texts include inscriptions upon monuments, and written codices. The latter are of excessive interest. A few statues of this period are of obstetrical interest. There is every reason for believing that the ancient Mexicans, when their culture reached its zenith, possessed a literature in the fullest sense of the word. This existed in the form of written books corresponding to those of other early civilizations such as those of Greece, Rome, Egypt, China, Babylon, and Nineveh. There would be more than a single copy of each work. Libraries were formed by various rulers and by the priestly groups.

This literature has all but vanished. Enough survives to assure us of its importance and to tell us something of its nature. Many reasons exist for the disappearance of the greater part. The long history of Mexico is a story of conflict, consequent plunder and destruction. This continued after the advent of the Conquistadores and persists to the present day.

We are able to determine more concerning obstetrics from a study of the codices than is possible with relation to any other branch of medicine. Why is this so? These codices are pictorial. The phenomena connected with sex lend themselves readily to visual presentation. In common with other early peoples, the Mexicans were intensely concerned with fertility and held the generative organs in high esteem. The act of copulation may be pictured much more vividly than that of ingestion. This is equally true of labor, lactation, the bathing of

the child, etc. A pregnant woman can be portrayed much more unmistakably than can a woman with a headache. It is not unlikely that if we could read these hieroglyphics with greater accuracy some would be recognized as referring to other physical conditions.

Mexico still remains in large part an unexplored country. Recent surveys of the jungle made possible by the use of the aeroplane have revealed hitherto unknown cities while excavations already made in Mexico City and elsewhere in the republic suggest the possibility that an extension of such investigations will result in discoveries of incalculable importance. May we hope some day to have available for study a complete library of this remote period?

The existing codices are of uncertain date. Most of these are attributed to the fifteenth and sixteenth centuries. A few are known to be of later date. The fact that such a book is physically assigned to the sixteenth century is irrelevant as to the date of its textual origin. We have a number of early manuscripts of the Christian scriptures. All are copies and none older than the third century. In comparison with a printed book, the manuscript is much more likely to disappear. Fewer copies were made. Time has taken its toll.

In January, 1930, I had my first and only opportunity to examine an early Mexican codex. This was a typical example of its kind. It was probably a manuscript of the sixteenth century. The hieroglyphics were written in three colors, red, blue, and yellow, upon thin sheets of skin. Each leaf, in size about 6 by 8 inches, was attached to the following one with leather thongs in a manner distinc-

tive with the ancient Mexicans. Leaf one was inscribed upon the verso only, leaf two upon the recto, and so on alternately. The attachment of the first two leaves was at the inner edges, of the second and third leaves at the outer edges. This being continued through the book results in a volume which when closed takes the usual form but when opened displays the entire text simultaneously upon a series of pages arranged side by side.

This form of binding together the sheets of a manuscript has a significance to bibliographers. What was its origin? The Hebrews wrote upon a long sheet of vellum which was then rolled into a scroll. The Egyptians used single sheets of papyrus. These if fastened together at all were attached at one side and opened like a modern book. Early European manuscripts (Greek and Roman) were gathered in the same manner. The Chinese and the Japanese, however, used a very thin paper. The pigment, with which their writing was done, penetrated through the sheet. This made it necessary to use only one side. The writing was consequently carried out upon a series of sheets or rather a series of pages were written side by side upon a wide sheet. This was folded so that the blank side was within. When bound, the typical Chinese or Japanese book, although it may be leafed through as may a Western one, consists of leaves made up of two sheets joined at the margin. The Mexican codex when opened and the Chinese book before binding are identical in arrangement. It appears likely that the form of these codices originated under an Asiatic influence. Since sheets of skin were used this form was not dictated by the same

circumstances as determined the format of the Chinese book.

The principal Mexican codices are:

The Codex Borbonicus. This is a work on divination and ritual. A facsimile with commentary by Hamy was published in Paris in 1899.

The Codex Fejervary-Mayer. This pre-Columbian pictorial manuscript is in the Liverpool Free Public Museums. Facsimiles were published in Edinburgh, 1901-1902, in Berlin, 1901, and in Paris, 1901. Each is accompanied by a descriptive text by Dr. Edward Seler.

The Codex Magliabecchiano. A post-Columbian manuscript now in the Biblioteca Nazionale, Florence. A facsimile was published in Rome in 1904.

The Codex Nuttall. A facsimile was published in Cambridge, Mass., in 1902, by the Peabody Museum of American Archaeology and Ethnology. This has an introduction by Zelia Nuttall.

The Codex Peresianus. An hieratic manuscript now in the Bibliothèque Nationale, Paris. This was reproduced in facsimile in 1888 (second edition) at Saint Valery en Caux. There is an introduction by Leon de Rosny.

The Codex Telleriano-Remensis. A facsimile with an introduction by Hamy was published at Angers in 1899.

The Codex Vaticanus. No. 3773. This was reproduced in facsimile with an elucidation by Dr. Seler at Edinburgh in 1902-1903. A German edition was published in Berlin in 1902.

The Codex Borgiano. This manuscript from the Museo Etnografico della S. Congregazione di Propaganda Fide was reproduced in facsimile at Rome in 1898.

The Codex Cospiano. A Nahuatl manuscript now in the Biblioteca de la Universidad de Bolonia was reproduced in facsimile in Rome in 1898.

The Codex Fernandez Leal. This was published in facsimile by the Mexican Government in 1895.

The Codex Cortesiano. A Mayan manuscript.

The Codex Misteca. The Mexican Government issued a facsimile in 1900.

The Codex Sierra. Fragment. Ca. 1550-1564. Published in Mexico City in 1906.

The Codex Mendocino.

The Codex Texcoco-Acolman.

All of these codices are significant in the study of the early medical history of Mexico.

The two ancient races of Mexico concerning which we have the most knowledge are the Nahuatl and the Maya. The earliest chronicler to record anything of value relating to the obstetrical practices of the native peoples of Mexico was Bernardo de Sahagun. His "Historia general de las cosas de Nueva Espana" is available in a number of editions. It is included in Kingsborough's "Antiquities of Mexico," London, 1830-1848. The best edition is that with notes by Carlos Maria de Bustamente, published in Mexico City in 1829-1830. A French edition with notes by Jourdanet and Simeon was published in Paris in 1880.

Sahagun's account of the religious ceremonies which accompanied the announcement of a woman's pregnancy is quoted *in extenso* by Dr. Nicolas Leon in his "Obstetricia en Mexico," Mexico City, 1910 (pp. 4-12). Such a celebration included ritualistic observances during which Quetzacoatl, creator of the first man and woman (Omeciuatl and Ometecutli) was invoked in behalf of the expectant mother and her child. The neighbors brought to the expectant parents gifts of food and drink, flowers, and incense. There was general feasting and drinking.

The midwives (Ticitl) cautioned the pregnant woman not to overheat

herself before the fire, not to expose herself to the rays of the sun, not to sleep during the day lest the face of the child about to be born should be deformed, not to chew tzictli (chicle) which might sicken the child, and to take plenty of nourishment in order that she be able to better endure the trials of labor and to properly nurse the child when born. Many things were to be avoided lest the child be born a monster. The desire to eat earth must be resisted since whatever was ingested by the mother was incorporated in the fetus.

During the first three months of pregnancy intercourse with the husband was permitted in moderation. Unless this was done the child when born would be sickly and of little strength. Intercourse near the time of parturition was prohibited. In general the prospective mother was counseled to eat well, to rest physically and mentally, and to engage very moderately in manual labor.

At certain intervals during pregnancy, especially during the last three months, the midwife administered to the pregnant woman a number of vapor baths. The apparatus used for this purpose was known as Temazcalli. One form of such a bath is pictured in the *Codex Magliabecchiano*. Francisco Clavijero in his "Historia antigua de Mexico" describes another form of Temazcalli. This was built of adobe brick somewhat in the form of the native bake-ovens and was about 8 feet in width and 6 feet high. The floor was convex. The bather was seated upon the elevated central area while water containing medicinal herbs occupied the lower circular area. Beneath the floor was a furnace which furnished the heat necessary for vaporization. These baths were

under the protection of Yoalticiti, goddess of baths.

When the pains of labor were manifested, the woman was given the juice of the plant, Chihuapatli, to drink. This was said to possess the power of causing contractions which expelled the fetus. The herb *Montanoa tomentosa* and other substances mentioned by Dr. Francisco Hernandez in his "Rerum medicarum Novae Hispaniae" were used for the same purpose. Tlacuatzin (*Didelphis californica*) was held to be a very potent ecboic.

Our knowledge of the position assumed in labor by the women of ancient Mexico is derived from a number of statues and from the various codices. Leon gives an illustration showing a Nahuatl statue of the goddess, Ixcuina, protectress of parturient women. She is shown in the last stages of labor. The figure is in a squatting position with the arms extended to the rear and the hands pressed against the buttocks. The head and hands of the child are shown protruding from the pudenda. This statue is admirable in execution. The muscular effort attending parturition is strikingly reproduced with remarkable anatomical accuracy. The head of the goddess is thrown back and the face is distorted with pain.

In the *Codex Nuttall* a mother is shown in this same squatting position: the child has been born but the umbilical cord is uncut and is shown together with the placenta.

From the frequency with which the squatting position in labor is exhibited both in ancient Mexican statuary and in the pictographs of the codices, to the almost complete exclusion of other obstetrical positions, this must have been the typical position among the native races of Mexico.

It is well known that this position is taken instinctively by parturient women of many semi-civilized and barbarous peoples. (See Witkowski¹ and Englemann.²) This seems to be the natural position rather than the lateral or dorsal decubitus which have become more or less fixed in modern obstetrical practice.

The only other obstetrical position encountered in ancient Mexico is the erect or semi-erect in which the woman is suspended or clings to a rope. Modern obstetrical positions have probably been dictated by esthetic considerations and not by any inherent advantages which they may possess.

Nahuan mythology has many gods and goddesses with attributes pertaining to the functions of generation and birth. Sterile couples offered their prayers to Quetzatcoatl. The priests of this god invoked his aid in the increase of fertility among the people by making his image from corn-meal mixed with the blood of young children. This simulacrum was then symbolically killed by being pierced with an arrow. The heart was then offered to the king to eat while the rest of the body was distributed among the people.

In common with other ancient races, the organs of generation were venerated by the Mexicans. Phallic emblems reminiscent of those excavated at Pompeia and Herculaneum are common both as statuary and in the codices.³

In the *Codex Borbonicus* there are pictographs of men with enormous

¹ Witkowski. *Histoire des accouchements*. Paris, 1887.

² Englemann. *La pratique des accouchements chez les peuples primitifs*. Paris, 1886.

³ *Herculaneum et Pompei*. Musée secret. vol. 8, Paris, 1840.

phalluses, an unmistakable representation of a pregnant goddess, and the figure of the wise king of Texcoco, Netzahualcoyotl, bearing a war-shield upon which appears the vulva. The *Codex Magliabechiano* has a conventionalized figure of the vulva and phallus conjoined. Uxil (Sarcorhamphus papa) in copulation with Pek (Canis caribeus) is shown in the *Codex Dresdensis* in a series of pictographs which includes Pek similarly engaged with a goddess, and Uxil likewise occupied.

After the conquest and evangelization of the natives in Mexico, many Spanish customs were adopted. Catholicism was readily accepted since it included many elements which at least superficially were familiar to the indigenes. The ancient Mexicans were confirmed ritualists. Infant baptism, the veneration of images, sacrifices, sacred shrines, the burning of incense, vestments, all these, were a part of their religious tradition. The practice of medicine was a priestly function with both the Nahua and the Maya.

The native medicine and surgery were immediately of interest to the Spanish priests, many of whom were also physicians. The earliest printed medical works in Mexico were in large part the work of the clergy. To these writers we are indebted for much of the knowledge which we now have of the native pharmacopoeia and to them we are under obligation for the introduction of many useful drugs into our own materia medica.⁴

Childbirth was surrounded by numerous superstitions, some of which

still survive in Mexico. Among the Mexicans, a woman dead in labor was the object of excessive veneration. Even one of her fingers was prized as a talisman which would make a warrior invincible. After the death of a parturient woman, her relatives and friends were able only with difficulty to prevent the mutilation of the cadaver.

One of the strange superstitions which still survives in Mexico is that of the umbilical tree. This belief, in part, may be met with in many lands. Occasionally a tree from which a branch has been torn exhibits a scar bearing a likeness to the human vulva. That such a phenomenon should attract the attention of primitive peoples might be expected. Such trees have been venerated and made the center for various fertility rites.

In January, 1930, I visited such a tree in Mexico and observed the strange purpose to which it had for many years been put. As far as I have been able to determine this is not to be met with elsewhere. The tree in question was literally covered with umbilical cords, some shriveled with age, others comparatively recent. The exact significance of this is unknown to me but I have reason to believe that the natives consider the hanging of the umbilical cord upon such a tree important in the preservation of the health of the mother and child.

The aid of the goddess of fire, Xiuhtecutli, was sought during labor. The native physicians and midwives were zealous in such idolatry. The rites included offerings of food and drink.

Labor was assisted by abdominal massage and the manual dilation of the vulva. If parturition was prolonged, pressure was applied by the midwife

⁴For a detailed account of this early literature see Nathan van Patten's "The Medical Literature of Mexico and Central America." *Papers of the Bibliographical Society of America*, vol. 25, 1931.

who used her feet for this purpose. In addition to the drugs mentioned elsewhere the woman was given decoctions of cola, chocolate with pimenta, or cihuapatli (*Montanoa tomentosa*). The vulva was fumigated with the vapor from boiling rue (*Ruta graveolens*).

The cord was usually cut with a fragment of obsidian or the sharp edge of a palm leaf. A metal knife was proscribed as its coldness was thought to injure the child. After cutting the cord was tied with a black thread. Any other color was considered detrimental.

It was customary for the midwife to preserve a fragment of the umbilical cord from the part nearest the fetus. This was highly esteemed as a remedy for many diseases. The placenta was either burned or secretly buried.

The child was bathed immediately after birth. Its mouth was cleansed, the midwife using her finger dipped in vinegar for this purpose. Purulent ophthalmia was of frequent occurrence and to combat this the eyes were washed with a decoction made from the seeds of *ojo de venado* (*Mucuna pruriens*). Lactation was prolonged among the Mexicans and contrary to general opinion does not seem to have been a barrier against another pregnancy. Among the Mayas, an image of the demoness, Ixchel, was placed beneath the nuptial bed to assure conception.

Mayan babies were carried by their mothers tied to a board. Another shorter board was attached to this one at the head in such a manner as to come down over the forehead and bridge of the nose. In this way through the constant pressure the bones were so shaped that from the crown of the head to the tip of the nose

there was a flattening into one diagonal plane.

With the Tarascos, marriage usually took place when the female began menstruation, which was usually at the age of twelve. The males married at about fourteen. The latter were little concerned about the virginity of their brides. Defloration was common before marriage.

When the bride became pregnant, female relatives immediately began a systematic preparation in order that a satisfactory termination might be assured. Massage was given at regular intervals. It was considered possible thus to determine the position of the child. The pregnant woman was allowed to rest as much as possible and great care was given as to her food and drink.

This is not the place to discuss the unsettled question as to the origin of syphilis. The disease under the designation, *morbus gallicus* is mentioned, however, by the earliest Spanish physicians in Mexico in their books published there. The *morbus gallicus* was believed to exist in two forms, no distinction being made between syphilis and gonorrhoea. The former strangely enough was known to the early Mexicans as "ingles." Guaiac was the standard remedy.

The printed literature relating to obstetrics, as has been previously noted, began in 1570. Prior to this, books printed in Europe referred to the indigenous systems of medicine in Mexico and to the medicinal plants found there. Important titles in this category include Diaz del Castillo's "Historia verdadera de la conquista de la Nueva Espana," 1519; de Benavente Motilinia's "Historia de los Indios de la Nueva Espana," 1524-41; de la Casas' "Brevissima

relacion de la destruycion de las Yndias," 1552; de Mendieta's "Historia ecclesiastica [indiana]," 1544; Lopez de Gomara's "Historia general de los Indias occidentales," 1565; Wateson's "The Cures of the Diseased in Remote Regions," 1598.

The Spanish clergy in Mexico after the conquest compiled numerous vocabularies of the native languages. These are of course invaluable in the study of the indigenous medicine since they are our principal means of identifying diseases and remedies known to the early Mexicans. Two of the principal publications of this character are Andres de Olnos' "Grammaire de la langue nahuatl" (written in 1547 and available in an edition published in Paris in 1875) and Alonso de Molina's "Vocabulario de la lingue mexicana y castellana" (published in Mexico in 1555 and reprinted in Leipzig in 1880).

In addition to Bravo's book, the following works were printed in Mexico prior to 1600:

Alonso Lopez de Hinojoso. "Suma y recopilacion de cirugia," 1578. Augustin Farfan's "Tractado breve de chirurgia," 1579. "Tractado brebe de medici," 1592.

Juan de Cardenas' "Primera parte de los problemas y secretos," 1591.

All of these books are of interest to the historian of Mexican obstetrics. They mark the transition from native medicine to European medicine. The latter was markedly influenced by the earlier Mexican systems.

The question may be asked, Why concern oneself with the medical practice of these ancient peoples and particularly why are we concerned with their obstetrics? No answer can be made to the physician who can ask such a question. Medicine and

surgery are ancient arts brought into being in response to one of the first laws of Nature, that of self-preservation. None of the sciences is new and it is not possible for any man to point to a single individual as the first chemist, the first physicist, or the first physician. Similarly it is impossible to say of a particular event that it was the beginning of chemistry, physics, or medicine. Each of the sciences is a hazily defined entity stemming back to a parent science whose origins are lost in the mists of pre-history.

A sure knowledge of the present must be based upon the firm foundation of an awareness of the past. All good things are not new. Systematic study of ancient medicine is likely to result in the rediscovery of many lost threads in the web of the medical fabric.

We know that the natives of Mexico and of Peru were familiar with drugs of the highest value and still in daily use in modern medicine. For each of these, a dozen or more other remedies are known by their Nahuan or Mayan names alone and remain unrecognized as to their source or use. Our knowledge of epidemiology will be greatly enlarged by a study of the many epidemics which raged in Mexico prior to and after the conquest. Finally we have a great neighbor to the south, a neighbor with whom we have a constant and increasing traffic. Much of Mexico remains still an unknown terrain. The old customs have persisted there, including those pertaining to diseases and their treatment. It is incumbent upon us to gain a knowledge of these things which have an immediate importance to our own health and welfare.

Of the various branches of medicine, obstetrics alone may be investigated in a period remote from the date of the conquest because as was stated at the beginning of this paper, it lends itself to pictorial representation. Its phenomena are common and intimately related to the life of all peoples. This has resulted in the

survival of many ancient practices so that the medical historian, the physician, and the ethnologist find in the obstetrics of contemporary Mexico (native) a clinic rich in material for the synthesis of a knowledge of the subject in the Mexico of antiquity.

