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# *PIERRE FAUCHARD*

(1678-1761)

by

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AT various epochs in the world's history, men of vision have appeared far eclipsing their contemporaries. Frequently, however, during their lifetime, they have not been adequately appreciated. Nevertheless, they laid solid foundations for succeeding generations to develop and improve.

Pierre Fauchard, born in Brittany in 1678, was undoubtedly such a pioneer in the science and practice of dentistry.

This is not surprising when it is realized that, as a student-surgeon in the French navy (which he joined in 1693 in the reign of Louis XIV), he, fortunately, came under the influence of Alexandre Poteleret, a surgeon-major, who had devoted considerable study to diseases of the dental organs.

At that time, the personnel of vessels on long voyages suffered severely from disorders of the teeth, particularly scurvy. Poteleret both inspired and encouraged Fauchard to take full advantage of his unique opportunities.

Further, Fauchard was a voracious reader, who carefully investigated the findings of precursors in the healing art. His steadfast purpose was to acquire and disseminate sound knowledge based on actual practice.

Besides, he did not regard it as being undignified to utilize information, and adapt tools for use in dentistry, from such ancillary trades as those of the watchmaker and the jeweller. His own genuis, inquiring mind and sound judgment, at all times, guided him towards a wise choice.

In order to appreciate the stupendous task which confronted Fauchard, it

PIERRE FAUCHARD
*(Photostat, Royal Society of Medicine)*

must be borne in mind that the practice of dentistry was then, very extensively controlled by roving mountebanks and empirics.

On relinquishing service in the navy, Fauchard began, in 1696, to practise in Angers as *a chirurgien dentiste* — credited as being the first so to describe himself. Hitherto, the very few more enlightened dental practitioners in France had styled themselves *dentateurs.*

Fauchard remained in Angers regularly visiting, as was the prevailing custom, such places as Rennes, Nantes and Tours, until about 1718, when he was firmly established in *rue de la Comedie Francoise* (also, known as *rue des Fosses-St-Germain),* Paris, near the University. He was then recognized throughout western France as an enlightened, scientific and skilful exponent of the dentist's art.

In 1723 he (*aet.* 45 years) completed the manuscript of his monumental work, *Le Chirurgien Dentiste, ou Traite des Dents.* It was not, however, published until the lapse of a lustrum, due to his innate desire that it should be as comprehensive, clear and accurate as possible. This view is confirmed by the fact that the manuscript (carefully preserved in the Library of the Faculty of Medicine of Paris) had obviously been meticulously revised: all the numerous alterations and additions having been legibly inscribed.

This book, in two volumes (the first serious attempt to present a textbook on dental practice), was published in 1728. It heralded a new era, creating a profound impression on dental thought throughout the world, particularly in the United States and Britain, even although it was not fully translated into English until the lapse of 218 years.

In 1733, a German translation was published in Berlin. In 1746 there was a second (revised and enlarged) French edition, and a third in 1786.

In the two last-mentioned, Volume I comprises thirty-eight chapters: and Volume II, twenty-six chapters. In all, there are forty-two plates, depicting chiefly instruments and appliances.

It may now prove profitable to consider briefly certain features of this most remarkable effort.

Fauchard was a relentless antagonist of all charlatans, who practised dentistry. In his book he exposed not only their highly injurious techniques but also their subterfuges.

For instance, some glibly recommended the application of tinctures containing crude sulphuric acid or spirit of nitre to remove deposits of salivary calculus. As Fauchard pertinently remarked, these resulted in imparting an indelible yellow hue to the teeth, corrosion of the enamel with the rapid onset of caries and necrosis of the gums.

He criticised the many cutlers, who, because it was part of their business to make dental instruments, believed themselves competent to use them. He instanced the case of a child, who had been brought to one such empiric. The last-mentioned decided to extract a primary molar, which was loose. He was greatly astonished to find that the tooth was minus roots. Being ignorant that these had been naturally absorbed, and believing that they must still be embedded in the alveolus, he forced the

instrument deeper and was well satisfied when he extracted an unerupted bicuspid!

Fauchard, also, recorded the distressing case of a man, who consulted a mountebank, because of a malplaced maxillary cuspid, which abutted lingually on the first bicuspid.

Straightway, he applied the key. Due to difficulty in adjusting the claw around this tooth, he rained blows on the instrument with a stone. The sequel was that the tooth vanished—into the antrum of Highmore!

In discussing the chicanery of tooth-drawers, who haunted market-places and fairs, Fauchard condemned that aura of mystery with which they enveloped their operations. He explained that such persons always had a number of confederates among the crowd. Consequently, when sufferers from toothache were invited to come forward, volunteers were immediately forthcoming. Did these particular persons really have a tooth extracted? Decidedly, no! The charlatan, with dramatic gesture, *apparently* applied the instrument: and, hey presto, an extracted tooth appeared.

What happened was that the imposter had, previously, concealed in his hand a tooth covered with chicken blood and wrapped in a very fine skin. This he dexterously slipped into the accomplice's mouth, soon confidently to withdraw it for exhibition to a motley gullible throng. However, in cases where the empirics actually did attempt extractions, this would frequently result in tooth-drawing by instalments!

Emphasizing the importance of teeth in the preservation of health and for proper speech and appearance, Fauchard sagely stressed that a due complement of these was essential for adequate mastication: and upon this factor efficient digestion depended.

He clearly stated that all forms of sugar, by their glutinous and corroding action, were detrimental to both teeth and gums. Although not advocating entire abstinence, in order to minimize the risk he advised moderation and subsequently washing the mouth with tepid water.

For cleaning the teeth, Fauchard issued a warning against the prevailing practice of favouring media containing brickdust and earthenware, due of course to their abrasive action. He detailed prescriptions (somewhat complicated) for various "opiates", powders, lotions and mouth-washes, all aimed at oral righteousness. For instance, one of his "opiates" contained:—2 ounces prepared coral: 1 ounce each of gum lac, dragon's blood, cachou and gambia: ¾ ounce of cinnamon, cloves and pyrethrum root: ½ ounce each of fantal red, cuttle-fish bone and burnt egg shells: and one teaspoonful of salt. These ingredients were pulverized, passed through a sieve of fine silk, and finally mixed with a sufficient quantity of honey of roses.

In discussing diseases of the teeth, Fauchard stated that these resulted from internal and external causes: including, among the former, variations in the quality of the lymph, and, among the latter, injuries and abnormal thermal changes.

He was non-committal as to minute worms being responsible for the onset of dental caries. Such a belief had per-

sisted, more or less, since ancient times: in the eighteenth century it was still fairly generally accepted. Fauchard mentioned that he had failed to detect their presence, although he had carried out examinations with Manteville's microscopes. One is not surprised to learn that, being endowed with a scientific and judicial outlook, he was not prepared to dogmatize on such a fundamental issue.

He riveted attention on the necessity for treating certain types of caries by cauterization. The instruments, which he favoured for this purpose, were appropriately shaped red hot brass knitting wires. In his opinion, three to five applications of these were essential.

As an argument in favour of filling cavities subsequent to the removal of all traces of caries, Fauchard stressed that such restorations strengthened a tooth, besides excluding air and food particles. For this purpose he preferred fine tin or lead to beaten gold. These metals were introduced into a cavity by means of pressure from suitably designed instruments.

It will, doubtless, astonish readers to find that such an enlightened person should record that he had relieved many cases of toothache, arising from extensive caries, by the use of urine. Incidentally, particularly in mediaeval times, this fluid was regarded as a panacea for a wide range of diseases.

He advised a sufferer, if otherwise healthy, to rinse his mouth, morning and evening, with several spoonfuls of his own urine. Realizing that such a remedy would fail to meet with universal acceptance, he naively added that, although aversion to its use might be natural, one ought to appreciate the resulting benefits!

To those persons, who complained that pain persisted or became intensified after their teeth had been scraped and cleaned, Fauchard sagely retorted that this could not be attributed to the operation, but to a sufferer having neglected his teeth unduly long. Consequently, he urged that, in order to prevent or alleviate such discomfort, people should, every four or six month, have their teeth examined by a skilled dentist.

In discoursing on irregularities of the teeth, Fauchard ascribed these not infrequently to failure of the primary teeth to be shed at the proper time. He condemned the prevailing very reckless practice of freely extracting the primary molars, in order to create more room in the mouth. He mentioned that the invariable sequel to this was drifting of the adjoining teeth; and, when the secondary ones erupted, the necessary space was non-existent.

For restoring a tooth to its normal position in the arch, he used judiciously a file, waxed silk thread, small plates, or strips of gold or silver. Further, he advised torsion by means of forceps or the pelican, in order to loosen it somewhat in its socket before applying digital pressure. He issued a timely warning to proceed thus with caution.

In cases where a tooth was markedly out of alignment and consequently unsightly and injurious to the oral tissues (and its position could not be rectified), Fauchard stated that its extraction was clearly indicated.

He was obviously regarded as a specialist in orthodontia, because many

surgeons referred cases to him for rectification.

For the treatment of loose teeth due to injury or salivary calculus, he advocated strengthening these by fastening them to nearby firm teeth by means of finely drawn annealed gold wire. He stressed that due care should be exercised to obviate the wire impinging on the gum and consequently exposing a further portion of root.

One of Fauchard's most outstanding achievements was to detect and describe a type of scurvy, which is today universally recognized by the general term, pyorrhoea alveolaris.

His clinical picture of this was profoundly arresting. When considering it, emphasis must be laid on the fact that he was unaware of the *role* of bacteria.

He believed that this disorder was confined solely to the gums, alveoli and teeth; and drew attention to the soft, livid, hyperaemic gums and to the exudation of pus around the necks of the teeth. Being an acute observer, Fauchard noted that the mandibular incisors and cuspids were the most frequently attacked.

He attributed its onset to rupture of the capillaries due to a degeneration of the fluids circulating through them. When this occurred, a state of fermentation arose with the formation of fistulous lesions around the necks of the teeth. These resulted in a discharge of pus, which became more marked on digital pressure.

As remedial measures he advised:—Cleaning the teeth thoroughly after meals with a mixture of wine and water: rubbing the gums vigorously with the finger dipped in an astringent or an anti-scorbutic lotion: and expelling the pus by pressure. When these measures failed, he recognized extraction of the teeth as the sole cure. That the disease then vanished, and the alveolus healed in a healthy manner, convinced Fauchard that it was entirely of local origin.

At this stage, it may prove instructive to allude to the manner in which dental operations were performed in the first half of the eighteenth century.

The sufferer was invariably placed on the floor. Fauchard stigmatized this position as both indecent and uncomfortable, particularly in the case of a pregnant woman. Instead, he recommended seating the patient in a horsehair covered easy chair with the feet resting firmly on the floor.

In these days, a dentist was not regarded as being skilful unless ambidextrous; and able to operate as efficiently with the left, as with the right, hand. Fauchard never queried this; on the contrary, he accepted it as being a *sine qua non* of dental practice.

Discussing extraction of teeth, he outlined four governing factors, namely:—Violent toothache incurable by other remedies: to prevent a carious tooth infecting a sound one: to eliminate halitosis arising from food putrefying in a carious cavity, and salivary calculus accumulating on neighbouring teeth because pain prevented their use: and caries being responsible for intractable, constitutional disorders.

For the actual operation, he enumerated five instruments, to wit: gum lancet, punch, forceps, lever (elevator) and pelican.

In the early eighteenth century and for a long time subsequently, it was regarded as sound routine practice to free the tissues from around the neck of a tooth with a gum lancet, prior to any attempt to extract it.

The punch, when indicated, was used for extracting teeth or roots by exerting outward or inward pressure on them.

Fauchard was, nevertheless, convinced that his own improved design of pelican and certain straight and curved forceps, which he had likewise devised, were generally the most efficient instruments to be used for the extraction of teeth.

As for transplantation of teeth, he clearly inferred that this was an everyday operation, and always successful provided certain conditions were observed. These embraced ensuring that the persons involved were young with untorn gingival tissues and strong alveolar sockets. He stated that the choice of teeth for this operation was restricted to incisors, cuspids and bicuspids. Further, that the tooth to be transplanted should conform accurately both in size and outline to the one which it was to replace. In his considered opinion, when all these precautions were observed, such teeth could reasonably be expected to remain firmly in position for many years.

Several chapters were devoted to a discourse on the materials and instruments best adapted for the construction of artificial dentures.

The tools, which he detailed as being necessary for the fashioning of these, included compasses, vices, saws, files, rasps, scrapers (sculptors) and a bow-drill.

Fauchard stated that, besides human teeth, hippopotamus, walrus and the teeth of oxen were in general use. Also, that when the restoration necessary involved only a limited number of teeth, these were held in position by thread or finely drawn gold wire passed through holes, which had been drilled from the distal to the mesial surfaces of the teeth to be inserted. These were attached in like manner to certain of the remaining firm teeth.

In those cases where a more extensive restoration was indicated, he recommended that the teeth should be mounted on a small gold or silver plate. The teeth were fixed to this by gold or silver dowels which were riveted in position by counter-sinking. Thereafter, the denture was stabilized *in situ* by means of thread or thin gold wire.

When, however, the insertion of a denture involved covering healthy roots, Fauchard advised that these should be utilized for retention purposes. To achieve such an objective, he selected a reamer, similar to a clockmaker's, to enlarge the root-canal. In this connection, he emphasized that maxillary incisors and cuspids were the most suitable; also that a carefully executed restoration sometimes lasted for fifteen to twenty years.

In cases where neither the natural teeth nor roots were available, it was necessary to stabilize full dentures by attaching gold (preferably) or silver spiral springs to them. He gave precise instructions for their construction.

Fauchard also drew attention to the value of enamelled teeth, especially as

they could be shaded to match the natural ones. When this particular type was indicated, he fitted a piece of gold or silver plate to conform accurately to the outline of the oral tissues. Strips of the same metal were fixed at right angles to the base: their number depending on the spaces to be filled. In the case of an edentulous person, the strip extended the entire length of the base.

In both cases, the exact contours of the teeth to be replaced were carefully traced on the upright metal. This technique naturally involved a high degree of manual dexterity.

The entire structure was then sent to the enameller along with a tooth of the required tint. When any natural teeth remained in a mouth, the enameller was shown them. This procedure ensured an accurate colour match. Fauchard declared that enamelled teeth, besides outlasting all other types, could be relied upon not to alter from their original shade.

He also very fully described five varieties of obturators, namely—With two parallel metal hinged wings: without a hinge: attached to a denture: partly bone and metal: and entirely ivory.

A valuable section (in fact, fifteen chapters) of Fauchard's work was devoted to accurate, comprehensively compiled histories of actual cases in his practice. These covered a very wide range. The details, so minutely recorded, cannot fail to enable a reader to follow with absorbing interest all the various moves on the chessboard.

Further, these are particularly illuminating because not only do they reveal the identities of the patients, but also the names of the surgeons who referred them to him. The authenticity of these records is consequently beyond doubt.

In 1746, the year in which the second edition of *Le Chirurgien Dentiste* was published, Pierre Fauchard was still practising in *rue de la Comedie-Francoise* in Paris in partnership with his brother-in-law and sole pupil, Monsieur Duchemin. In 1747, however, his address was *rue et pres les Grands-Cordeliers, faubourg St-Germain.*

It is gratifying to realize that Fauchard's fundamental teachings were ably and widely disseminated in America in the late eighteenth century by that never-to-be-forgotten pioneer, James Gardette, who was born in Agen, France in 1756. After studying dentistry in Paris, he settled in Philadelphia in the summer of 1784, continuing to practise there until 1830. He died at Bordeaux in the following year.

It is freely acknowledged that Pierre Fauchard was far ahead of his *confreres,* and the first surgeon-dentist to be worthy of that designation. Although not surprising, it is, nevertheless, unfortunate that he was a target for jealousy from certain of the less successful exponents of dentistry.

This is confirmed by the fact that he considered it necessary in the 1746 edition of *Le Chirurgien Dentiste* to controvert false reports that he had retired from dental practice. In unmistakable terms he stated that these emanated from those, whose purpose was to divert his practice to themselves. Every right-thinking person must admire his

courage in dealing, so trenchantly, with such contemptible tactics—tricks which were old, when Adam was a boy!

On Fauchard's death in 1761, Monsieur Duchemin succeeded to his practice. It is, however, believed that he did not for long survive, because within a comparatively short time, Monsieur Delafondee, proclaiming himself Fauchard's successor, was living in Paris in *rue et pres les Grands-Cordeliers.*

The name of Pierre Fauchard, upon whom the title, "The Father of Modern Dentistry", has justly been bestowed, will endure when generations of dental pigmies will be entirely forgotten.

By having so altruistically and successfully raised the practice of dentistry from an indifferent trade to a dignified profession, he has achieved everlasting renown. He ranks high in the gallery of the immortals.

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