

HISTORICAL NOTES

Diagnosis of apparent death and resuscitation techniques in 18th century Spain: a historical analysis

Aproximación histórica al diagnóstico de muerte aparente y sus técnicas de reanimación en el siglo XVIII español

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In 18th-century Europe, importance began to be given to situations in which patients were considered dead when in fact, they were not. The nomenclature of actual death was created to differentiate it from apparent death. Thanks to the scientific and technical advances of the time, new methods were developed for the resuscitation of the population subject to this uncertain death,^{1,2} as well as provisions regulating burials. This article provides a historical approach to the diagnosis of apparent death, its resuscitation techniques, and the role of governmental and academic scientific institutions in 18th-century Spain through analyzing the historical context and the study of primary sources.

Minimal death and burial regulations

In August 1788, the press recorded an interest in accurately diagnosing death.³ Thus, it can be read: "We regularly abandon the corpses of the subjects we have most esteemed to domestics who only try to remove them from the warm bed and place them on cold straw or, most commonly, on a board; when they do not do this, cover the natural openings so that they do not stain the beds where they try to leave them; a malicious use and worthy of being corrected. To make it even worse, the undertakers or shrouds, carried away by avarice, come to the corpses; they finish covering the natural openings, they tighten the chest and arms with bands, and doing the same on the legs, then bind the whole body in a cloth that oppresses them as much as possible, and then they sew it with pins. If the death of these corpses were apparent, could a better method be found to hasten their death and make it impossible for them to be restored to life?"⁴

These concerns were framed within the context of European Enlightenment reformism. A period characterized by establishing a new governmental practice centered on the whole of living beings organized as a population.⁵ The consideration of health as one of the primary objectives of political power sought to be

achieved by deploying a health policy whose essential characteristics were the adoption of measures to control mortality, infancy, and birth rates. In short, the functioning of medicine as an instrument of social control,⁵ in which the figure of the physician would take on a leading position within the political-administrative structures.⁶

Among the sanitary provisions was the prevention of premature burials in cases of apparent death, highlighting, as a suitable means of dissemination, the academic forums and the Economic Societies of Friends of the Country, which arose to disseminate the new ideas, scientific and technical knowledge of the Enlightenment that allowed the creation of the epistemological foundations of modern science and medical practice.⁷ A renewed science that reached all social strata relied on the press and scientific publications, both with a medical and educational function in the medicalization of the family nucleus.

The boom in informative publications related to health preservation consolidated its growth during the 18th century.⁸ During this period, the first texts are identified that, from different approaches, highlight the interest in uncertain signs of death and hasty burials throughout Europe.^{3,8,9}

In Spain, the first references are found in the discourses contained in the *Teatro Crítico Universal* by Fray Benito Jerónimo Feijoo y Montenegro (1676-1764), who, in his editions of 1759 and 1769, emphasized as "uncertain and fallible" the lack of respiration, lack of feeling and movement as signs used to identify the death of an individual³ and pointed out the need for a correct clinical diagnosis, considering that "against all reason, it is barbaric to give corpses to the earth for such a reason, sense and movement as signs used to identify the death of an individual³ and pointed out the need for a correct clinical diagnosis, considering that "against all reason, it is barbaric to give corpses to the ground because of such ill-founded fears of infection, before duly exploring whether they are actual corpses or only apparent".¹⁰

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In this sense, the chamber physician of Charles III, Miguel Barnades Mainader (1708-1771), in his posthumous work published in 1775, will add that “the common people are not so guilty of abandoning and treating the next person as deceased when they see him deprived of all movement, as the doctors themselves, who are usually the first to authorize and motivate such inconsiderate abandonment, are reprehensible, for as long as man lives, and is the object of medicine, as soon as a pulse and respiration are perceived, as long as these phenomena cease outside the body, they declare the irreparable loss of life, without even deigning to approach the body, to inquire whether there is total cession or only suspension of vital movements.”¹¹

Barnades insists on not being considered reliable in diagnosing death without the so-called vulgar signs. “It would be of little use to have demonstrated by reason and experience that, following the common practice of judging the reality of death indistinctly by its vulgar signs alone, people are abandoned, opened and buried as deceased,”¹¹ therefore, he proposes “to examine medically the signs by which the state of true death can be mistaken for that of minimal and hidden life, and those by which one can decide on true death or total extinction of life”¹¹. He goes on to emphasize that “the diagnosis of minimal life and actual death has generally been omitted in Medicine because there are very few authors who have dealt with this subject with any individuality”.¹¹

For the author, there are two reliable signs for the diagnosis of death of a person, the successive stiffness of the whole body and the incipient putrefaction not to be confused with gangrene of body parts. “For if experience has taught the insufficiency of ordinary signs to judge the extinction of life decisively, the same experience also proves the certainty with which one can decide the state of death, by some particular signs (...). Indeed, the constant observations that I have made of countless corpses (...) have assured me that all the phenomena that the body offers after having expired, the most remarkable, the most regular and immediate, is to stiffen the body in all parts successively, and as if by degrees, so that its joints are in a certain degree and to a specific term inflexible (...). The incipient putrefaction of the whole body is the surest sign of actual death. This assertion needs to be explained than proved”.¹¹

Several treatises that preceded him agreed with his conclusions, with putrefaction as an indisputable sign in diagnosing actual death. Its identification and knowledge the tool to avoid hasty burials. We highlight the professor of surgery Juan Galisteo Xiorro, who, in his adaptation to Spanish, in 1776, of the work dedicated to the apparent death of the French physician Jean-Joseph Gardanne, indicated that no burial should proceed “without his state of actual death being announced by some signs of putrefaction, and duly confirmed by the physicians”.¹²

A year later, José Ignacio Sanpontos, a Medical-

Practical Academy of Barcelona member, published “how the experience has taught us how easily we can make mistakes and confuse the living with the dead, and that putrefaction alone is the certain sign of a true death.”¹³ A public health problem that for Sanpontos requires government intervention and the regulation of burial, particularly in violent deaths, “this is a matter that should be brought to the attention of superiors, ecclesiastical and secular because in it they are interested no less than the body and the soul, for which reason both should take some provisions in order to the burials of those who die suddenly”.¹³

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These measures were echoed in the press. Thus, in April 1777, the newspaper *Mercurio Histórico y Político* published how in Florence, an edict was issued prohibiting “burial until 24 hours after death, and even longer burial should be suspended in the case of sudden death”.¹⁴ In addition, the edict included instructions that should be carried out before burial, among them to avoid clothing that would oppress the deceased, “always observing that the neck is not tight and that there is nothing that could compress the jugular veins and the other external carotid veins (...), the lower jaw shall not be tied, nor pressed against the upper jaw, nor shall the mouth and nose be covered, as has been the practice up to now, but the body shall be left in its natural state”.¹⁴ In case of suspicion of apparent death, “the corpse shall not be placed face up, but on its side,” and likewise, “while the body remains in the morgue room, care shall be taken to recognize it from time to time, in order to see if it gives any sign of life, such as heart palpitation, respiration”.¹⁴

In Spain, the regulatory framework of the Royal Decrees of April 1787 and November 1796 focused on the prevention of epidemic outbreaks through the provision of the location of cemeteries and the form of burial, and that “corpses be buried with the competent depth, that they not be exposed in public places when they have reached terms of complete putrefaction”.¹⁵

Asphyxia, reviviscence and public health

To identify the signs of actual death in the health sphere, the concept of “asphyxia” was generalized to define the etiological agents responsible for the appearance of a state of apparent death in individuals without previous illness.¹ “Life is often merely suspended in those who appear to have died suddenly without previous illness, and in whose body no sign of putrefaction is found. This state, which physicians call Asphyxia.”¹²

A state that could be caused by a wide variety of causes, primarily accidents typical of the time such as violent falls, drowning in rivers, canals, asphyxiation caused by the fumes from braziers, latrines, “vaults where the dead are buried, public dunghills, prisons, hospitals, and other places that contain many people locked up (...), excessive joy, sadness and anger (...), contraction produced by the umbilical cord in newborns”,¹² among others).

In this context, the number of treatises and periodical press proliferated, which, following a scientific didacticism, presented the resources of resuscitation for the benefit of public health, as highlighted, in 1775, by the physician Cristóbal Fabregat y Fores (1734-1809), in “bringing to public light a brief, but useful and even necessary treatise in which the methodical means of resuscitation are taught (...), to better promote their application for the benefit of public health”.¹⁶ These reviviscence maneuvers were classified into mechanical, pharmacological, and surgical remedies. The first ones focused on recovering or maintaining the patient’s body heat by placing and applying “rubbing the whole body with hot cloths and continued with constancy for many hours,”¹¹ continuing the mechanical actions with respiratory assistance, “the strong insufflation with force in the mouth of the deceased, has the same virtue of renewing the vital movement (...); thus many authors have looked at the use of these remedies in the same way as the mechanical remedies.), thus many authors have considered insufflation as a very effective means to excite the semidiphuncts”,¹¹ a maneuver complemented with the application of tobacco smoke enemas, “the introduction of air into the intestines is a great aid to excite an apparent death,”¹¹ for which the use of a fumigation machine was popularized among the main European cities.

Although its origin dates back to the 17th century, it was perfected and devised as a portable device containing all the necessary aids, accompanied by a brief instruction accessible to the public.¹ Among the pharmacological tools, “irritants, excitants and in both classes there are internal and external ones.”¹¹ Among them, the use of fluid alkali prevailed, also known as saponaceous volatile alkali¹⁷ whose main component was the salt of ammonia, made known by the French chemist Balthasar Georges Sage (1740-1824), whose work was translated into Spanish by the physician and botanist Casimiro Gómez Ortega (1741-1818).¹⁷ It was common to find it an accessory to the fumigation ma-

chine. However, its reputation as a stimulant was so high that it could replace its use when the machine was unavailable. Several treatises use both mechanical and pharmacological techniques, such as the surgeon Jacinto Mayzonada Rubira (1754-1821), who, in 1793, published that “we will introduce the said alkali several times in his mouth and nostrils with the beards of a feather, and alternating the insufflation with the bellows by the two ways, with some compressions and rubbing on the chest and belly”.¹⁸ The author himself goes on to state that “we are left with the chirurgical operation known by the names of bronchotomy, laryngotomy, and tracheotomy (...) facilitating with it a free passage to the blowing of the bellows through the trachea, with the exit of the interior air and of some foamy humidity”.¹⁸ Its use was limited to qualified and experienced professionals.

These techniques and instructions, where the speed of their use prevailed, whose results and benefits were disseminated by the press, resorting to both foreign and national news, encouraging their implementation and generalization among the administrative powers. An example of this is the news from Barcelona on August 16, 1776, where it was highlighted how the city council resolved “given the favorable effects that a large part of Europe, and even this town itself, has experienced from the fumigatory machine in the apparent deaths of those flooded, suffocated by the smell of coal and others, to pay for two of the largest, and with the aim that whenever any misfortune occurs, the aforementioned remedy can be promptly used”.¹⁹

Conclusion

The progression of publications of informative works with contents similar to what we know today as social medicine was a phenomenon of the Enlightenment. From reason and experimentation, death and the deceased body were the object of independent scientific studies to study the causes and signs of death. The physician perceived death as a poorly understood phenomenon, whose knowledge and resuscitation techniques would constitute new strategies for health promotion.

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