

DOM JOÃO VI'S DEATH

Convulsions and coma

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ABSTRACT - Dom João VI's death occurred in adverse political conditions that led to the regicide hypothesis. The main aim of this paper is to mention life style and conditions of the death of the king by means of narrative review based on primary and secondary sources. Dom João VI died in the way of convulsions and gastrointestinal symptoms. This could be the result of the pathological chain of genetic determination, accentuated by the inappropriate life style, obesity and sedentary habits, and/or poisoning. The finding of arsenic in high doses in his viscera favors the last hypothesis as the basic cause of death, but one can not discard the atherosclerosis predisposing risk factors for a final stroke.

KEY WORDS: Dom João VI, arsenic, convulsions, stroke.

Morte de Dom João VI: convulsões e coma

RESUMO - A morte de Dom João VI aconteceu em condições políticas adversas que conduziram à hipótese de regicídio. O objetivo principal deste artigo é mencionar o estilo de vida e condições da morte do rei por meio de revisão narrativa baseada em fontes primárias e secundárias. Dom João VI morreu apresentando convulsões e sintomas gastrointestinais. Esse poderia ser o resultado da cadeia patológica de determinação genética, acentuada pelo estilo de vida inapropriado, obesidade e/ou envenenamento. O achado de arsênico em doses altas nas suas vísceras aponta a última hipótese como a causa básica da morte, mas não se pode descartar a aterosclerose como fator de risco predisponente para um acidente vascular cerebral final.

PALAVRAS CHAVE: Dom João VI, arsênico, convulsões, acidente vascular cerebral.

João VI (Figure 1) fled to Brazil at the end of 1807, because of the Napoleonic threat against Portugal that was under the protection of its English ally: a small country in the way between the great rival empires French (Napoleonic) and English. Brazil is commemorating the 200 years of the arrival of the Portuguese royal family (1808-2008)¹. Dom João VI arrived as the regent prince, and from 1816 thereafter, he became the king in consequence of the death of his mother Dona Maria I, psychotic¹. The Portuguese royal family remained in Brazil from 1808 to 1821 where it was hosted a European monarchy, the only one of the Americas. Its presence determined a milestone between an oppressed colony and the beginning of an independent nation. He was the founder of the Brazilian empire, according to Jose Bonifácio de Andrade e Silva, *apud* Calmon¹. His son and grandson, Dom Pedro I and Dom Pedro II, favored the consolidation of the nation. Oliveira Lima² published a first edition of his famous book in 1908 that recognized the king political ability and his importance for the

bases of the Brazilian emancipation. The monarch's last years elapsed in Portugal where he died in the way of political and familiar conflicts, besides diarrhea, vomits, convulsive seizures and coma that could have been precipitated by arsenic poisoning common in real or hypothetical royal homicides^{3,4}. It is always complex the analysis of the study of the cause mortis when enough factors of the risk for it were already defined as it was the case of the Napoleon Bonaparte gastric cancer⁴ and atherosclerosis for Dom João VI. Although, both had toxicology evidence of important arsenic poisoning in their body remains.

DOM JOÃO VI AND THE COURT PHYSICIANS

The Portuguese monarchy in Brazil provided several benefits as the formation of the embryos of the current Federal colleges of Medicine of Rio de Janeiro⁵ and of the Bahia under the influence of Jose Correia Picanço, general-physician of the Portuguese Kingdom who was born in Goiana (Pernambuco, Brazil) and died in Rio de Janeiro^{5,6}. One of his person-

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Received 5 June 2007, received in final form 10 August 2007. Accepted 11 September 2007.

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al physicians was Teodoro Ferreira de Aguiar (1769-1827): Brazilian who influenced the construction of the colleges of medicine of Lisbon and of Port⁷. A rich tobacco trader was released from jail thanks to Dr. Aguiar, and he wanted to reward the doctor for it. Although, Dr. Aguiar alternatively recommend him to support the creation and the maintenance (done for three years) of these colleges what was possible because Dr. Aguiar's influence on Dom João VI⁷. He came back to Rio de Janeiro in 1808 with the court and returned with it for Portugal in 1821⁷. He was surgeon of the royal chamber, military, in charge of the vaccinations in Brazil, one of the reliable people of the king during the second period of his government in Portugal⁸. He attended the monarch in his last days with others doctors (17 at the total), mainly with the Baron of Alvaiazare⁹. Teodoro Ferreira de Aguiar soon came back to Brazil after the death of Dom João VI, but he returned to Portugal as official in charge of the businesses of the Brazilian court⁷. However, he committed suicide in that country, after his arrival⁷. Strangely, three other Dom João VI closest collaborators also died in suspicious circumstances⁷: Minister Lacerda, general-physician baron of Alvaiazare (Manoel Vieira da Silva) and the cook of His Majesty, Caetano. Thus, Dom João VI death occurred in conditions that led to the regicide hypothesis, at a moment of the most disturbed of Portugal. Some authorships of this presumed crime was a hypothesis: the radical absolutists with involvement of the wife and son of the monarch, Dona Carlota Joaquina and Dom Miguel (in exile, in Austria) or the radical liberals (under the influence of the masonry)^{1,9,10}. Miranda¹⁰ admits the complicity of the people who surrounded the sovereign: "All these..., one after other, in mathematical succession, had obeyed a secret plan, laboriously made by the monarchy in its fight for the power". Machado⁹ opted for the hypothesis of the natural cause mortis and similar nosological picture that occurred with the monarch grandfather, Dom José.

KING'S HEALTH

Dom João VI was considered gluttonous, melancholic and sedentary, factors that by themselves would be of risk for the occurred outcome at the age of 59 years old. He was considered kind and tolerant even with his consort and political rival whom was contemplated at least in the appearances with a kind approach (Fig 2). Dom João was careful about his power as monarch of a great empire that he tried to keep until few months before his death. The power was precious for him, as Jose Presas mentioned,



Fig 1. D. João VI (authorized reproduction by the Faculty of Medicine of the Federal University of Rio de Janeiro Administration).

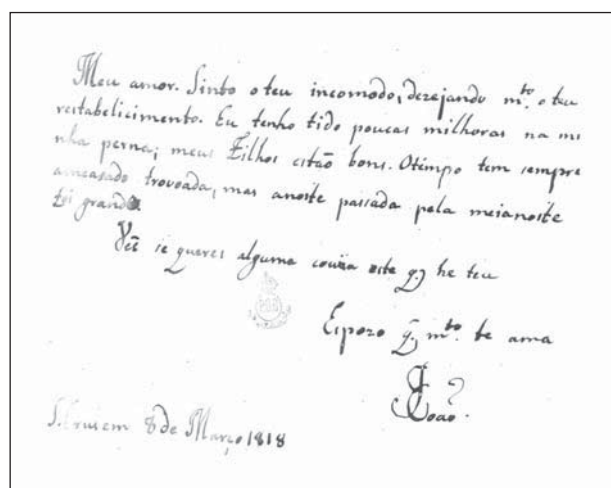


Fig 2. Letter from Dom João VI to Dona Carlota Joaquina: mention to his health problem (authorized reproduction by the Museu Imperial/IPHAN/Min.C)

apud Calmon¹: "more careful of his authority than of his woman". It was stood out also the conciliatory spirit in alliance to a vague cruel indifference in relation to the employees¹. Another characteristic was his very limited personnel hygiene what can be justified by the cultural influences, but, also, indications of depression. There was also a problem in his legs. Calmon¹ reported a deposition of the duke of Chatelet that "... mais tous les hommes de La Maison de Braganca ont une maladie hereditaire, dont le principal symptome est une enflure aux jambes". Calmon¹ reinforced that Dom Jose I and Dom Pedro III,

grandfather and father of Dom João had also this problem, the only one mentioned in one of the five king letters to the queen consulted by the authors¹¹. At the end of his life, Calmon¹ emphasized that his "phistula" not left him (varicosity?). Other problems related were erysipelas¹. In Brazil, the tick bite got worse his legs: the swelled and deformed ankles had been treated for some time with sea baths¹. Machado⁹ stood out the parsimony in the previous stories of problems of health of Dom João VI. Although, he informed that at the occasion of his death he already presented symptoms of organic illnesses, such as generalized edema or hydrops, and bilious diarrhea. According to Machado⁹, four years before his death, the monarch already presented many signals of the cardio-renal system chronic harm aggravated on March, 1826⁹. In 1822, he reported the occurrence of ulcers caused by the long permanence in bed⁹. Similar death consequent to apoplexy had his father Dom Pedro III (also Dom Jose I brother)^{1,12} as well as his grandfather, Dom Jose I, and great-grandfather, Dom João V^{1,9,12,13}. These three monarchs had stroke related convulsive seizures: post-stroke in the case of the grandfather and great-grandfather; and symptomatic acute, in the case of the grandson, Dom João VI. These facts demonstrate that the familiar propensity to the epileptic seizures, primary or secondary^{9,14}. The final days of the monarch were recorded. On March 2, 1826, he "vomited bile"¹. In the following day, he arrived at Belém, "...cadaverous aspect, with bluish black circles under the eyes, gasping, trembling and unsteady. ... El Rey dismounted with the swelled legs....., however, discretely supported, he walked" according to Machado. This difficulty to walk would already be the result of an arsenic toxic neuropathy¹⁵? Although, this trip to Belém was contraindicated by his doctor and council member, Teodoro Ferreira Aguiar⁹. On March 3 to 4, the muteness of the sovereign mentioned by Machado⁹ may have some diagnosis, such as aphasia caused by a stroke. In day 4, he was in a better health state⁹. The apparent improvement after the onset of illness, followed by the sudden return of symptoms may occur in the arsenic poisoning³. "The king, on March, 4 after to have lunched roast chicken, cheese and oranges became seriously sick... The health of D. João VI aggravated hour after hour. His illness presented convulsions and syncopes ... " according to Miranda¹⁰. On the day 4 to 5, he presented colics, vomits and convulsions⁹. In the morning of March 5, he had new "attack". In the day 6, he received the sacraments from the Church, and after, he would have established the regency for his daughter Dona Isabel Ma-

ria. On March 7 to 9, he remained in torpor or comatose state. Twenty seven medical bulletins were emitted. In the first one of the day 5, it was declared: "His Imperial and Royal Majesty had in the day Saturday four of the present month of March, an indigestion, followed by nervous insults that momentarily lasted and to which the benefits of the remedies that He deigned to take, he is better currently". In the last bulletin of the day 10, there was the record: "His Imperial and Royal Majesty who God has in glory, having continued to suffer repeated nervous insults, happened three, of which the first one started at 4 hours afternoon, with great anxiety, the second at 4 hours and one quart and lasted four minutes, the third start at 4 hours and 25 minutes finishing unfortunately for one syncope which was followed by the death the most calamitous for the Portuguese (unhappily verified even for the electric experiences) at 4 hours and 40 minutes". It is important to mention that there was rumor that the monarch would have died in the truth before the date officially considered, being delayed the communication for the solution of the problem of the succession left opened. Ten days after his death, Dom Pedro I of Brazil was recognized as the legitimate heir of the crown, as Dom Pedro IV of Portugal⁹. Dom João had great disgusts as the ending of his dream of keeping under his scepter the kingdoms of Portugal, Brazil and Algarves. Machado⁹ stood out that the Brazilian phase of the monarch was the happiest of his life. Calmon¹ told that the ambassador A'Court was received two months after the death of the monarch in audience by Dona Carlota Joaquina, and she affirmed that her husband was poisoned "with successive doses of tofana water", made up of arsenic and that "she could exactly when was applied the first dose". Study recently carried out with the dosage of arsenic and lead in the soft tissues, in the mortal remains of the king, proved this hypothesis of poisoning, possibly by lead arsenate or lead arsenite¹⁶. We can assume that months before the death, the king developed intermittent bouts of severe gastroenteritis with vomiting and diarrhea, besides peripheral neuropathy compatible with probable episodes of arsenic poisoning. Although, there is not arsenic concentration measurement in the king's hair what would help to clearly define a chronic exposure to the metal³. Strangely, the body of the monarch was not submitted to a autopsy, as the corpses of his great-grandfather and son, Dom João V and Dom Pedro IV (at the occasion, only Duke of Bragança)¹³.

CONCLUSION

On the basis of the reports, in his final days, Dom João VI may have had weakness, lethargy, delirium, convulsions, coma, besides difficulty to speak (probable aphasia), preceded or followed by gastrointestinal impairment, as symptoms of a encephalopathy and possible of a motor and sensitive peripheral neuropathy. The encephalopathy may be the result of the pathological chain of atherosclerosis initiated by the vicious style of life and genetics, or poisoning, separately or joined. The peripheral neuropathy would have this last appointed cause. Dom João VI probable poisoning was not necessarily unique: over time to weaken him and during a lethal phase to hidden any suspicion of the real death's cause? The deposition of Dona Carlota Joaquina of successive poisonings exists, but the evidence of the arsenic was made only in the soft tissues, and not in hair, for example, what would indicate undoubtedly more prolonged arsenic exposition^{3,16}. The dehydration and hypovolemic shock promoted by diarrhea and vomits may participate in the multicausal chain and the monarch mortal encephalopathy. However, the finding of arsenic in high doses in the viscera of the monarch points out the poisoning as the basic cause of the death. Although, the several risk factors, familiar or of the life stile, provide strong support for the hypothesis that Dom VI's João death has atherosclerosis at least as a death facilitator factor.

Acknowledgments – We acknowledge the collaboration of the staff for the consultation of books, periodicals and documents of the libraries (Real Gabinete Português de Leitura, of the Faculdade de Letras da UFRJ, and National Library), Archives of the Museu Imperial - Instituto do Patrimônio Histórico e Artístico Nacional - Ministério da

Cultura. We are also grateful to the Gabinete de Imprensa da Sociedade Portuguesa de Cardiologia for sending the required paper¹⁰ and M.L. Carvalho for the same reason. We also acknowledge the Faculdade de Medicina da UFRJ administration for allowing the publication of the painting reproduction.

REFERENCES

1. Calmon P. O rei do Brasil: vida de D. João VI. Ed. 2. São Paulo: Companhia Editora Nacional, 1943:20,37,40,42-45,73,95-96, 106-121, 225-226, 283,313, 316, 318.
2. Oliveira Lima M. Dom João VI no Brasil. 1808-1821. Prefácio de Octavio Tarquinio de Souza. Ed. 2. Rio de Janeiro: Livraria José Olympio Editora, 1945.
3. Mari F, Poletini A, Lippi D, Bertol E. The mysterious death of Francesco I de' Medici and Bianca Cappello: an arsenic murder? *BMJ* 2006;333(7582):1299-13301.
4. Lugli A, Lugli AK, Horcic M. Napoleon's autopsy: new perspectives. *Hum Pathol* 2005;36:320-324.
5. Brasil. Decreto de 2 de abril de 1808. Estabelece uma cadeira de Anatomia no Hospital. In: *Collecção das Leis do Brazil de 1808*. Rio de Janeiro: Imprensa Nacional, 1891:11.
6. Vargas SSM, Valladares AF, Gomes MM. Direções e aspectos político-administrativos. In Gomes MM, Vargas SSM, Valladares AF (Org.). *A faculdade de medicina primaz do Rio de Janeiro em dois dos cinco séculos de história do Brasil*. São Paulo: Editora Atheneu, 2001:3-24.
7. Botelho LS. Dr. Teodoro Ferreira de Aguiar. *Rev Port Cardiol* 1995;14:343-344.
8. Santos LC Filho. História geral da medicina brasileira. V. II. São Paulo, Hucitec/EDUSP, 1991:515-517,521,547,549,588.
9. Machado LJTM. Causas de morte dos reis portugueses. Braga: Livraria Editora Pax Ltda, 1974: 163, 188, 167, 179-186.
10. Miranda JB. A morte de El-Rey D. João VI. Lisboa: Tipografia União Gráfica, 1955:20,30-35.
11. Arquivo Museu Imperial. I-POB 21.02.1814 JVI.P. c 1-3; I-POB 08.03.1818 JVI.P. c 1-2.
12. Pereira A. As senhoras infantas filhas del Rei D. João VI, Lisboa: Memorial Labor, 1938:16,38-39.
13. Dantas J. Autópsias de reis. In: *Figuras de ontem e de hoje*. Porto: Livraria Chardron de Lelo & Irmão ed., 1914:145-151.
14. Gomes MM, Chalub M. Dom Pedro I of Brazil and IV of Portugal epilepsy and peculiar behavior. *Arq Neuropsiquiatr*, in press.
15. Agency for Toxic Substances and Disease Registry. U.S. department of health and human services. Arsenic toxicity. <http://www.atsdr.cdc.gov/HEC/CSEM/arsenic/docs/arsenic.pdf> (05.13.07).
16. Carvalho ML, Rodrigues Ferreira FE, Neves MCM, et al. Arsenic detection in nineteenth century Portuguese King *post mortem* tissues by energy-dispersive X-ray fluorescence spectrometry. *X-ray Spectrometry (X-ray spectrom)* 2002;31:305-309.