Anesthetic Uses of Hyoscine and Atropine Alkaloids in Surgical Arabic Book

To the Editor—I read with interest Dr. Holzman’s recent article concerning the history of atropine alkaloids. This is a very important comprehensive review dealing with old myths that captured the imagination of ancient physicians. The actual use of these alkaloids was not very clear and the article did not give a definite account of their role in surgical practice. For that reason, I would like to note that almost 700 yr ago, an Arab surgeon wrote a complete chapter on pain relief and described the use of Opium (Afone), hyoscine and atropine alkaloids (Al-Bani). He did not mention mandrake as such. The surgeon was Abu Faradj Ibn Moufak Eddin Yaqoub Ibn Issac Ibn Al-Koff (born 1232 A.D.) and his book was Al-Omdah Fi Sinaat Al-Jirah. His words go like this:

And you ought to know that relief for pain is of two types: true and untrue. The former is opposing the cause of pain... With regards to the untrue type it is anesthetic; it is the one that the surgeon needs in this situation. The first pain reliever, the one which is the true type, is the beneficial with good consequence. With regards to the second pain reliever, even though pain relief occurs with it, and ability to treat is made possible, as much as it decreases pain, it weakens the strength and freezes the substance that causes pain and fixes to the organ, therefore the surgeon shouldn’t use it except in a great matter.  

This quotation represents a modification of the previously held views, paving the way for “rational” use of these drugs. His remarks are based on previous observations on patients. There are no controlled or statistical arguments in his account. However, he does document the poisonous nature of these agents. He still advocates its use for great tasks (surgery) or “the ability to treat” (by the surgeon, i.e., surgery) to be obtained.

Thank you for this excellent review.

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References


In Reply—A sincere thanks to Drs. Lai and Takrouni for supplementary information. Although it is inevitable that an article tracing the mythology and pharmacology of the alkaloids omits much more than it includes, it also affords the author and other interested readers an opportunity to pursue offshoots of the thesis. Dr. Lai’s references to the foresight of Dioscorides and Giambattista della Porta are a reassuring reminder that physicians have long yearned to provide pain relief. His mentioning of Dr. Forrer’s use of atropine toxicity therapy, which, for the sake of brevity, I only touched upon, is a fascinating preview of our current efforts at trying to understand cholinoreceptors in the central nervous system. The Datura stramonium referred to by Dr. Lai has poisonous seeds and berries, with hyoscine a major constituent.
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Although in toxic doses it almost always ensured insensibility before death, if an extract was given in smaller amounts it had a sedative and possibly aphrodisiac effect. Toxic effects of Datura may have been responsible for the losses suffered by Mark Antony's army in 36 C.E., when his troops were forced to eat unfamiliar plants, and they ate of one plant that killed them after driving them mad.1,2 In more recent times, Datura stramonium achieved notoriety when some of the early settlers near Jamestown, Virginia, mistook it for spinach and narrowly avoided death. During the 1676 Jamestown, Virginia uprising known as Bacon's Rebellion, soldiers sent to stop the rebellion unfortunately ate the berries of this plant for lack of other food and became deathly ill. The plant subsequently became known as Jamestown weed, or jimsonweed. In the 19th century, Datura was sold in the form of herbal cigarettes by the Spanish Cigarette Company, and these cigarettes were said to bring relief to those suffering from bronchial asthma and other respiratory conditions—the inhalation of an anticholinergic, just like ipratropium!3

Dr. Takroun
e illustrates the transition to the compassionate and therapeutic use of anesthetics. Again, for the sake of brevity, the interval between the conquest of Alexandria (640 C.E.) and the establishment of the medical school at Salerno did not receive extensive treatment by me. I did refer to Avicenna's description of the medical use of opium, henbane, and mandrake, but that is but a small portion of the rich contributions in medical care made by Arab physicians of the time. The Saracens tried to ease the discomfort of the sick, flavoring bitter drugs with orange peels and sweets, coating unpleasant pills with sugar, and studying the lore of Hippocrates and Galen. Even The Arabian Nights contained a reference to soporific drugs: Presently he filled a cresset with firewood, on which he strewed powdered henbane, and lighting it, went round about the tent with it till the smoke entered the nostrils of the guards, and they all fell asleep, drowned by the drug.4

I take great pleasure in having heard from Drs. Lai and Takrouni, and appreciate knowing of our shared interest in the richness of our heritage.

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The Media and the BIS Monitor

To the Editor—I read with interest the article by Dr. Rampili regarding the BIS monitor1 and the accompanying editorial.2 In the editorial, you comment on Dr. Rampili's purposeful decision not to discuss the purported usefulness of the device because "[a]nesthesiologists are purchasing the Aspect device and will judge for themselves whether the system provides useful information." However, this independent judgment of anesthesiologists exists only to the extent that outside forces are not exerting undue pressure on them to use the device.

In my practice, I always know when a newspaper, magazine, or television show has produced an expose regarding awareness during general anesthesia. The next day, patients are seeking reassurance that the same thing will not happen to them. Awareness during anesthesia might be newsworthy, but what I find particularly disturbing is the fact that these stories frequently end with a claim that the BIS monitor can prevent awareness.3 I do not know the source or the impetus for these news stories. However, I do know that from a press release that Aspect distributed to business and medical editors, one can infer that the BIS monitor will decrease the incidence of awareness during general anesthesia.4

I believe that Aspect Medical, as well as investigators evaluating the BIS monitor, should be careful to ensure that an anesthesiologist's decision to use the device is based on information derived from sound scientific research instead of pressure generated by public opinion.

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