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LETTER TO THE EDITOR

11 April, 2005

ANTHRAX AT THE HOSPITAL: THE TIP OF THE ICEBERG

Dear Sir,

Anthrax remains a public health problem in developing countries, such as Peru. There are few studies of this disease, thus the relevance of this study being published in your journal[5]. Although this study adds to the knowledge of this disease, a brief analysis of the research is needed.

The study published herein is a research conducted at the Hospital Cayetano Heredia on a disease, whose ecosystem in its natural form is the country. This difference between the object of the study and the type of research may lead to inadequate concepts of the disease.

One of the conclusions from this study is that 85% of the patients were hospitalized. According to the medical literature[3] and to recent clinical studies conducted in the field[8] most of the patients with cutaneous anthrax did not present with systemic manifestations, thus did not need to be hospitalized. Most of them were taken care of in the outpatient clinics. Another conclusion is that 100% of the patients presented with an ulcer with central necrosis. Cutaneous anthrax starts out with a papule, which grows into a vesicle, which becomes hemorrhagic and depressed. In the late stage, it becomes a necrotic ulcer with a central black eschar[3]. The necrotic ulcer is the late stage of anthrax. Physicians are used to associating cutaneous anthrax only with the late stage of the necrotic ulcer, perhaps due to the name given by Hypocrates of "anthrax" or the Latin American term of "carbunco", which basically refer to the late stage. Unfortunately, the conclusion of this study reinforces this concept. In contrast to what this urban study reflects, in anthrax-endemic areas in the country, farmers emphasized the early diagnosis of the ulcered vesicle with inflamed borders, yellowish bottom. They have identified it by popular names such as the "waytacha"[7] (Fig. 1a). The easiness in early recognition is due to the frequency of the disease in these areas. Its is important to recognize the necrotic ulcer stage (Fig. 1b), however it is more useful to recognize the cutaneous lesion early because this will lead to decreased risk of disease dissemination.

A second aspect of this study is the description of purulent secretions, not only in the cutaneous lesions but in the cerebral spinal fluid (CSF), as well. Pustules are rarely seen in cutaneous anthrax lesions and a primary pustular lesion is very unlikely cutaneous anthrax[2]. This lesion is not purulent. The absence of purulent secretion may be explained by the fact that there are no phagocytosis because the edema factor alters the neutrophil function and the capsule stops phagocytosis[3]. Although the article specifies that the presence of purulent secretion in the cutaneous lesions is due to the presence of overt cellulite, the finding of piogenous CSF in the patients is controversial. World medical literature on anthrax-induced meningitis indicates the presence of hemorrhagic CSF, thus this characteristic may be an indication of the presence of anthrax, such as happened in an index case of the recent anthrax epidemic caused by bioterrorism in the United States. In this case, the presence of hemorrhagic CSF was one of the key factors for physicians to consider this diagnosis[1]. There are experimental studies in animals, such as monkeys, in which

Fig. 1 - Anthrax. A - Early stage (right). B. - Late stage (Left).

purulent meningitis was observed[4], however the immunological system of other species is different, therefore it is hard to translate these results on to human beings as a possible explanation for the presence of pus in the CSF described by the authors.

The presence of pyogenous infections, added to anthrax in cutaneous lesions, the findings that most patients who arrive at the hospital present with necrotic ulcers and the presence of systemic manifestations described in the study that are basically associated to the advanced stage of the disease, can be explained by the fact that the research study was conducted at a hospital. Like many studies conducted in Peru on anthrax[6], the main bias of the study is that conclusions derive from a hospital investigation, analysis was conducted on a subgroup of patients who made it to the hospital, not on the whole of patients, perhaps the most, who suffered from anthrax. Perhaps the best way to learn about anthrax, a rural disease, is through a research study in the field. Hospital investigations on anthrax, as shown in this study, only allow us to see the tip but not the whole iceberg.

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