



Case study Human health versus Biosecurity

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ABSTRACT

This case study is based on realistic true historic events. Since the start of experience and professionalism in the field of Veterinary Medicine which was preferential to maintain specialization and fulfillment to the curia of the writer. The event was in the third academic year of course study in Veterinary Medicine at the Faculty of Veterinary Medicine in the University of Baghdad. That study year was fabulous, although it was hard but without saying it is fruitful to the writer. In that year 1970-1971 the most unexpected hard time is being practiced and never forgotten.

Keywords: Health, Biosecurity, Rabies, Pathology, Education.

1. Introduction

Hands on the carcasses were the aim of training in the laboratory practice, just like in the clinical studies hands on the patients to examine and diagnose the disease. The overall outcomes of Medical faculties are efficient new graduates. Students after they finish the theory lectures gathered in front of the practical labs waiting for the time when class to start.

10.30 am outside the pathology laboratory

The unforgettable day and experience faced by the student Emaduldeen and his friends in the course of pathology started when he checked the roster of diagnosticians who performed the post mortem techniques for the practical class started at 11.00 am of that day. Self protection and precautionary measures had to be followed. The students were only allowed to work in the presence of the specialist in duty. The regulations advertised at the boards in many places (entrance of the post mortem room, the office of head department secretary and some other places like histopathology lab).

The routine works in the post mortem room usually start at 11.00 am and cases had to be dissected by group of students in the practical session. Most groups in the practical class had 25-30 students. Precautionary measures had to be taken properly to avoid any contact with animal tissue, organs or fluids during post mortem duties and work for the sake of not transmitting, spreading diseases to the environment, media and to prevent personal infection of workers in the post mortem room. Although most practical labs had to be applied and practiced ultimate biosecurity (means protection and securing personals from infection or hazardous effect of chemical, biological materials or the spreading of infection by biological

agents). At that time biosecurity was not properly followed, but safety precautions had to be practiced at least in the post mortem room using all the tools and chemicals like disinfectants, use of fixatives, apron, white coats, gloves, boots, and masks. These laboratory equipments were available and must be used during post mortem work.

2:00

When the practical class (post mortem) started all students in the group were attending the class with no one absent. The post mortem room was leveled for purpose that all students can see the theater where the carcass laying at the post mortem table and few students work to dissect and follow the teaching of post mortemized animals to investigate gross morphological changes and indicate the cause of death. On the table, the carcass was a male dog Doberman breed and aged between 3-5 years, his body was emaciated and dehydrated. The tongue was pedungulated and desiccated fluid mostly saliva around the mouth. Eyes showed glaucoma and injury on the frontal bone of the skull. The pathologist on duty Dr Talib (academician) was engaged in talking with people outside the post mortem room. Emaduldeen was the only student who always speeds to do the work of post mortem, rushed to look on the post mortem request form to have an idea about the case and the history of the animal which is normally learned from the owner of the animal, No form was available. Emaduldeen went to the pathologist Dr Talib outside the post mortem class room to inform about the history of the animal, Dr Talib reply that the owner send the carcass and he will fill the form later and did not mention any history about the death of the dog. Hence Dr Talib proposes and suggests that we should send the dog carcass to the cold room and keep it there until we informed about the history for that case. Emaduldeen had replied that this case was the only one left as the class was at 2.00 pm to 5.00 pm and no cases are expected to come after midday. Dr Talib insisted to show students in the class some jars at the pathology museum (another alternative to teach students practical post mortem pathology in the lack or of no case at the post mortem room), then he left for a meeting after advise to bring 5 jars for different pathological conditions (one for each subgroup each of 6 students). Dr Talib asked one student named Hareith to call the demonstrator (tutor) Dr Ali to help in group discussion.

2:30

Dr Ali was asked to help in the practical class; he understood that he ought to help in the post mortem of the dog. The tutor has appointed recently and recruited to work in the post mortem pathology. First when he had arrived to the post mortem room, he requested a pioneer student to assist and operate the post mortem teachings on the dog lying on the table. The first student to start was Emaduldeen. Neither Emaduldeen nor the tutor had remembered the jars and/or the post mortem request form to look on the history of the dead dog. At the same time, two other students Hisham and Ahmad was involved to help in providing tools and whatever needed to do successful post mortem inspection on the body of the dead dog. The technique of post mortem was applied after full inspection of external features, a recorded and registered morphological changes was completed at 3.30 PM.

3:30

When the students and the tutor ended the post mortem procedure. The following conversation recorded;

Emaduldeen: How are these strange objects get their way into the stomach and lower esophagus.

Ahmad: I find it very strange for this dog to eat plastic pieces, wood, and stones.

Hisham: Why we don't think and have an answer or we ask the tutors.

Until that moment the students Emaduldeen, Hisham, Ahmad were touching the carcass and dissecting the organs. Other students were willing to learn, more than ten of them had already touched the animal tissues and organs. Half the students at the class were only watching and monitoring mainly the three pioneered students and the tutor.

4:00

All of a sudden, the lecturer Dr Talib was shouting Stop... Stop..., take off your hands, Hands off the carcass, when he enters the post mortem Lab asking loudly that nobody leaves the place to anywhere and the students who touched the animal must not touch their faces or rub noses or move outside the room. Then he asked Emaduldeen to dispatch the head and amerce it into a jar full of ice and send it to Pasteur institute under the Ministry of Health. After Emaduldeen has done what Dr Talib ordered, there was a car waiting for the submission of specimen to the Pasteur institute down town. At the same time there was another vehicle waiting for the students and the tutor to ride. None of the students in the group understood what was going on. Then Dr Talib addressed the students the following speech: The owner of the dead dog sent me his request form to investigate the cause of death a while ago describing the history of illness of the animal before the death and the opinion of the local veterinarian Dr Sabah in his area which had suspected that the dog could be infected with rabies virus and must be isolated in a cage for more than 10 days to monitor the progress of health status. On day five of isolation, died after showing symptoms of paralysis and profuse salivation with water phobia, those are typical clinical symptoms and signs of rabies disease. I declared to all to keep the carcass in the cold room and instead have alternative means for teaching students in today's class. According to that you are under quarantine measures, for 30 days, each day every one of you will be injected antirabies serum for immunization and protection. The students and the tutor whom they were the active dissector of the carcass and the ones who touched the animal blood or saliva or any part of the body will be under direct observation by the hospital quarantine unit near by the Pasteur institute in the main town hospital. Two weeks after the immunization treatment the Pasteur institute sent the result of the dog brain histopathology in few words to cut a sharp edge in the confirmation of disease infected dog carcass.

Conclusion:

The moral of this real story can be summarized in a conclusive remarks that ignorance of precautions in medical practices end in agony. The directions of the specialist along with self protection and biosecurity in diagnostic morbid pathology are of utmost importance to secure life and body from infection.

Questions:

1. Does the problem have serious consequences on the society?
2. Is the only mistake in this case was the Biosecurity understandings.
3. Is there any newly invented test for early diagnoses of the disease?
4. What are the method for protection of human being and animals from infectious viral diseases?

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Appendix 1

This case study is based on realistic true historic events. Since the start of experience and professionalism in the field of Veterinary Medicine which was preferential to maintain specialization and fulfillment to the curia of the writer. The third academic year of course study in Veterinary Medicine at the Faculty of Veterinary Medicine / University of Baghdad was a fabulous year, although it was hard but without saying it is fruitful to Emaduldeen. In that year 1970-1971 the most unexpected hard time is being practiced and never forgotten. The third year of study in the medical faculties which follow the standard system of medical sciences education (teaching and learning) is the most annoying to students and difficult, in a sense that the subjects are most interesting in preclinical knowledge and students find it hard to achieve high marks in courses like pathology, pharmacology, parasitology, microbiology, nutrition and few other co-curriculum subjects. The most interesting was the style of teaching and experiencing practicalities in the laboratories to learn diagnostic criteria of diseases that has been speculated or suggested for final diagnosis. Students at this level have to do many practical procedures and handle cases to identify causes of death. Pathology class teaches students to be responsible in identifying death causes by applying the post mortem techniques in the practical lab and in special theater, with specialized tools and equipments. Many terminologies and definitions were said for the understanding of pathology science which is known to be as a “science behind the cure” or is a rock or big stone for centralizing clinical studies (medicine, surgery, and obstetrics), and is “the back bone of medicine”. Pathology in reality is a science dealing with abnormalities in the body resulted due to physiological or anatomical changes; it was also defined as a science to study disease. Accordingly pathology was highly stimulating to people who are looking for all mysterious things that they expect to meet during their life span. The most passionate to look after was a student named emaduldeen who is a part of his ambitious carrier for training and learning study skills in that field was solid in feelings and incentives, and had always initiatives to start the first step in

strong faith. Emaduldeen was always the first to start the practical work and the last to find his way out of the Post Mortem Theater. Stick to his lecturers helping them in many ways such as sampling, dissection and preparation of the tools for work.

Appendix 2

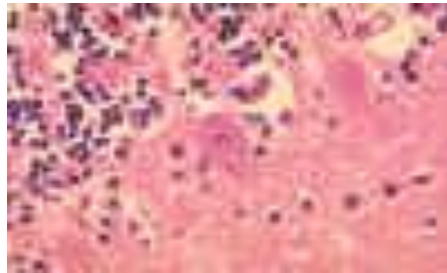
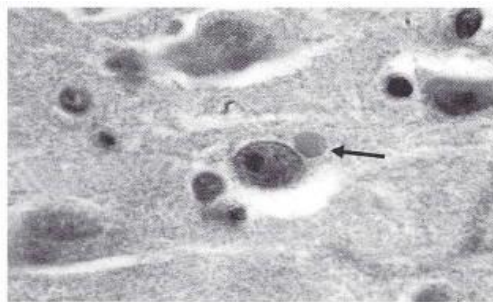


Fig.1: Histopathology of rabies, brain. Characteristic Negri bodies are present within a Purkinje cell of the cerebellum in this patient who died of rabies. CDC/Dr. Makonnen Fekadu maf1@cdc.gov



Classic Negri body (arrow), which resembles an erythrocyte in cytoplasm of nerve cell

Fig.2: (From Google-images)



Fig.3: Symptoms of disease in human.(From Google-images)



Fig.4: Symptoms of disease in animals.