

Anaesthesia in a Patient with Cutaneous Anthrax - A Case Report

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Sir,

Anthrax is a disease of domestic animals. In human beings it is an occupational disease, commonly encountered in farmers, butchers and dealers in hides, hair and wool in endemic areas. Cutaneous, gastrointestinal, inhalational and meningial anthrax are the different types. Inoculation of spores is the commonest mode of disease transmission. We present one such rare case of cutaneous Anthrax, who presented for emergency surgery and anaesthesia.

A 49 year old patient, farmer by occupation, presented with a swelling in the right forearm and posted for emergency decompression fasciotomy. Four days prior to the onset of swelling, there was a history of injury to that region while grazing sheep and cattle. The swelling was painful and rapidly progressed to involve the whole of right upper limb (RUL). On examination, patient was afebrile, with pulse rate of 90/min regular and blood pressure was 90/70 mm Hg. Systemic examination, airway assessment and oxygen saturation were unremarkable. Local examination of the RUL showed a tender, edematous and warm swelling, with subcutaneous emphysema. Right radial pulse was weak. Fingertips were bluish and the capillary refill was delayed. Electrocardiography (ECG), Chest radiograph, hematological and biochemical investigations were within normal limits. Patient was on Intravenous fluids and empirical antibiotics (Inj. Cephalosporins and Inj. Metrogyl). Fasting period was adequate and high risk consent taken before shifting to operating theatre.

Patient was taken up for emergency decompression fasciotomy, with informed high risk consent in view of the compromised vascularity of the limb. Inj. Ranitidine 150 mg and inj. Metaclopramide 50 mg iv administered as premedication. Anaesthesia procedure was explained

and reassured. On arrival in the operation theatre SPO₂ was 95%. Pre oxygenation given with 100% oxygen, SPO₂ was achieved to 100% and non invasive monitoring was set up [ECG, pulse oximeter and non invasive blood pressure (NIBP)]. General Anaesthesia was induced with Inj. Thiopental sodium 250 mg and tracheal intubation was facilitated by succinyl choline 100 mg. Halothane and vecuronium and were used for maintenance of anaesthesia and muscle relaxation respectively.

Decompression fasciotomy of the whole limb was performed. The discharge and part of necrosed tissue sent for gram stain and culture sensitivity for microbiology lab. After adequate debridement and fasciotomy, the wound was packed with magnesium sulfate and glycerine dressings. Intra op period was uneventful. Neuro muscular blockade was reversed and tracheal tube removed. Patient was shifted to recovery room with post oxygenation 4 liters per minute by Hudson mask and monitoring continued. Hemodynamically patient was stable. Further post operative period was uneventful. Bacillus anthracis were grown in the culture and appropriate antibiotics changed. Patient received skin grafting under general anaesthesia at a latter date and the same was uneventful.

Anthrax, caused by bacillus anthracis is primarily a disease of domestic animals¹. They become infected by inhaling or ingesting spores of bacillus anthracis. Bacillus anthracis produces an antigenic exotoxin that is believed to be responsible for many of the clinical symptoms². The incubation period is 4-6 days consistent with history of the patient. Human beings who come in contact with these animals are at risk of contracting this disease. Infection can result in cutaneous (Malignant Pustule), pulmonary (hemorrhagic bronchopneumonia "Wool Sorters Disease", laryngitis), gastroenteritis and rarely

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meningitis (haemorrhagic leptomeningitis CARDINAL'S CAP)³. Malignant edema spreading from upper limb to neck and thorax region can lead to breathing difficulties that may require intubation, which was noted in our patient and hence securing airway was necessary. Diagnosis in our case was confirmed by Gram stain and culture. Penicillin is the drug of choice, and second line drugs (Quinolones, Tetracyclines, Chloroamphenicol and 1st generation Cephalosporines) are used in case of resistance. Autoclaving and incineration are acceptable procedures for the decontamination of lab materials and surgical equipments, sterilization of operating room is a must before use for next case. Since it is a public health issue, public health Dept. of Karnataka was notified.

Though the anthrax infection is virtually eradicated, now with the potential threat of using anthrax bacilli in biological weapons, it has now become relevant for physicians to refamiliarize themselves with clinical anthrax.

References

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