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Case Report

Epilepsy-Related Burn Injury: A Case Report

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Abstract

An epileptic 25 year old female presented with repeated seizure- related burns occurring in the home while she was performing cooking with fire woods. She was not ever received any anti epileptic drugs. The outcome of burn injury was hypertrophied scar, contractures, keloids and amputations which make her disabled.

Keywords: Epilepsy; Seizures; Burn

Introduction

Of the 70 million persons with epilepsy worldwide, nearly 12 million are expected to reside in India; which contributes to nearly one-sixth of the global burden. It is estimated that there are about 2.73 million women with epilepsy in India and 52% of them are in the reproductive (15 to 49 years) age group [1]. Sahota et al. [2] reported that primary generalized seizures were seen in 53.6% women in their series. There is sufficient evidence available to show that 70% to 80% of people with epilepsy could lead normal lives if properly treated [3]. Unfortunately, there is also evidence that in many countries more than 50% of people with epilepsy and in certain areas up to 90% are not properly treated [4].

In an epilepsy cohort from India reported that 32.5% patients had sustained a seizure-related injury, of which seizure-related burn injury was 5% [5]. The study from a tertiary institute in India revealed that 1.3% of all burn admissions were seizure-related [6]. Female patients with epilepsy in child bearing age are particularly vulnerable to seizure-related burn injuries, accounting for almost 66% of all burn patients in the study in a tertiary institute [6]. No doubt, there are limited knowledge about seizure related burns in epileptic patients. Burns are devastating injuries and in addition to a high mortality rate, survivors are burdened with life-long physical and emotional scars. Many burns resulting from epilepsy are avoidable. On this background the author presented a seizure related burn injury case from a north eastern state of India.

Case Presentation

A 25-year-old housewife of low socioeconomic strata presented with a history of recurrent epileptic generalized tonic-clonic seizures. Her first ever seizure occurred post marital 2 years. She had twenty such attacks since then to June 2017 and did not receive appropriate treatment for her condition. She did not ever receive any Anti-Epileptic Drugs (AED). She sustained repeated burn injury during seizure. First one, during her second epileptic seizure attack when she was in 36 weeks of pregnancy, she sustained burn injury in kitchen while cooking with fire woods, and an open flame burned her left foot, front of left leg and right hand which was a combination of deep and partial thickness burns. After primary wound management and resuscitation, she underwent emergency caesarean section and delivered a male child who is now 7 years old. Subsequently she became mother of second male child who is now 18 months old. The second burn injury occurred during her 20th episode of seizure while cooking, an open flame burned her both hands which was partial thickness burn. On 5th day of 20th episode she was prescribed anti epileptic drug, sustained release sodium valproate 500 mg twice daily first time from a medical college hospital. The author came across the patient on 12th day of last episode seizure and found that patient not yet started AED. The author tried to aware her regarding advantage of treatment with AED and advised to restrict cooking alone with open fire in kitchen to prevent seizure related burn injuries. But, the patient had no alternative way to follow the instruction because she bound to do the daily household chores including cooking with fire woods, because there was no other adult family members or caregivers in the family and her husband was daily worker. The outcome of burn injury was hypertrophied scar in left leg together with contracture and amputations of left foot toes which make her disabled (Figure 1). She had also hypertrophied scar and keloids in hands (Figure 2).

Discussion

Our patient is the prototype case of women with epilepsy from lower socioeconomic strata. She had unique challenges in her life like epilepsy, pregnancy, child rearing and bound to do the daily household chores including cooking alone with fire woods. Above all she is defenseless to trauma and accidents during seizures, being a patient with generalized epilepsy. Being active epileptic she is taking risk working in the vicinity to burn agents every day and do not receive appropriate treatment for her condition, leading to large treatment gap. She & her family believe that this disease is not treatable and hence it is not possible to get cured through modern medicines. This is the case like many other patients (8% to 55%) who were not aware that epilepsy is treatable with modern drugs [7-14]. There is sufficient evidence available to show that 70% to 80% of people with epilepsy

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could lead normal lives if properly treated [3]. That is, if our patient receives proper treatment there is 80% chance of being seizure free and thereof seizure related injuries.

A highly significant observation in our case was that the patient sustained burns in kitchen while cooking alone in her third trimester of pregnancy. It is worthy to mention here that pregnancy possess some challenges in managing burn injuries while the fetus is seen as the second patient in developing a plan of care [15]. Burns increases fetal mortality in the first trimester. The common complications for the fetus in decreasing order were intrauterine fetal distress, spontaneous abortion and premature labor in some studies [16,17]. Fortunately the outcome in our case was good.

Figures 1 and 2 shows devastating seizure related burn injuries which was a combination of deep and partial thickness burns. Botan [18] reported three cases of full thickness burn injuries, owing to the long contact time with the burn agent during seizure attacks. In a series of patients Akhtar et al. [6] reported that second degree burns were the most common (18 out of 54 patients) and third degree burns were the least common. The spectrum of burn injuries sustained by epileptic patients in South Africa [19] accounted that 42% were partial-thickness, 29% deep burns and a further 29% a combination of deep and partial-thickness burns. The majority of patients sustained a small total body surface area burn [19]. Seizure related burn after burn, if this vicious cycle continues; the cumulative functional disability will be increased.

Burn injury prevention is essential in reducing the morbidity and mortality associated with these injuries. So, proper treatment of epilepsy and preventive measures for burns and other accidents is paramount importance. Patients should be educated regarding preventive measures, and to take their medications regularly, adjusting them in accordance with the physician's consultation and lifestyle changes to avoid further contact with the burning agents. Patients should not be allowed to cooking alone.

After a global campaign against epilepsy treatment, still a group of patient remains unreached. It is urgently needed to bring them out of shadows and treat them to prevent seizure-related injuries. So, our awareness program should be strengthened to reach to those unreached in society.

Figure 1: Epileptic who sustained flame burns with contractures and amputation of digits in left foot.

Figure 2: Epileptic with burned hand.

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