



AN OVERVIEW FACIAL BURN, ROLE OF DENTIST, PARAMEDICS, MEDICAL ADMINISTRATION, IN PROPER MANAGEMENT TOGETHER WITH LABORATORY IN CROSS MATCHING

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Abstract:

The success of accurately diagnosing and providing first-contact treatment for patients with facial burns is dependent on the paramedics taking an accurate history, performing a physical examination, and closely observing the patient. If the patient requires a blood transfusion, the paramedics should continue to be present with the dentist and the medical laboratory for the purpose of receiving a blood match. When it comes to human tissue and the respiratory system, providers need to have an understanding of both the immediate and delayed impacts of heat. It is important that the initial treatment be focused on preventing complications, precisely determining the amount of the injury, and promptly giving the right therapy.

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DOI: 10.53555/ecb/2022.11.4.053

Introduction:

Burn injuries are a significant health problem and are the primary cause of death or injury that occurs as a result of an accident in the United States. Burns to the face can have a significant impact on a variety of specialized tissues that are essential to human survival and function. These structures include the nasal cavity, the eyes, the ears, and the mouth. When we engage with the rest of the world through our faces, the aesthetic component of facial burns is quite important. This is in addition to the functional part of facial burns. Treatment for facial burns must be administered promptly by a wide variety of members of the healthcare team in order to reduce the risk of morbidity and mortality. In the process of evaluating and treating individuals who have sustained this debilitating ailment, this activity brings attention to the role that the interprofessional team plays [1].

Nearly half a million burn injuries were treated in emergency departments across the United States in 2017, as reported by the National Hospital Ambulatory Medical Care Survey. A survival rate of 96.7% was achieved by around seven percent of these patients who were admitted to the hospital for additional therapy. Burn injuries continue to be one of the top causes of accidental death or injury in the United States, despite the fact that the associated fatality rate is very low. Not only are burn injuries connected with mortality, but they are also associated with severe morbidity, particularly facial burns [2].

When dealing with patients who have facial burns, the doctor faces the issue of meeting both the functional and aesthetic requirements of the patient. When it comes down to it, the face is required for breathing and taking in food through the mouth. In addition to this, its anatomy is incredibly intricate, as it is responsible for our senses of sight, hearing, and smell. In addition to its fundamental functionality, the human face is vital because it plays a central role in communication and the manner in which we engage directly with one another. In addition to causing superficial tissue damage, facial burns can also result in scarring and deformity that extends much further. Our quality of life is greatly diminished as a result of things that have an effect on our identity and our capacity to participate regularly in society. Burns to the face can have a variety of long-term consequences, including psychological, social, and physical consequences. It is necessary to take a healthcare team approach to management, which may take anything from a few months to many years [3].

Over the course of the last few decades, the death rate associated with burns in affluent countries has

been steadily decreasing. This is often linked to a number of different variables, some of which include advancements in treatment, safer working environments, and better-engineered consumer products. An improvement in quality of life can be achieved by optimal burn treatment and reconstruction, which can lead to improved functional and aesthetic outcomes. There are ongoing technical advancements that are being used to burn management, and these advancements have the potential to lead to additional improvements in morbidity and death rates. For thorough management of burn injuries, particularly facial burns, a healthcare team comprised of professionals from multiple disciplines is required [4].

During the course of therapy, multiple health care specialties, including dentists, medical laboratories, and physicians, as well as healthcare administrators, are typically involved. The actions that one takes in the short term might have an impact on the possibilities that others have in the long run. To ensure that the most appropriate decisions are made about the treatment of the immediate issue, it is essential for anybody who treats face burns to have a thorough understanding of the continuum of care [5].

Review:

Thermal, electrical, chemical, and radiation burns are the four categories that can be used to classify burns to the face, much as burns in general can be classified further. Burns caused by heat are the most prevalent type. Temperature and length of exposure both play a role in determining the severeness of the injury. Injuries caused by scalds often result in burns of a partial thickness because the fluid runs off the body. On the other hand, injuries caused by direct contact for extended periods of time can result in full-thickness pain [6]. Despite the fact that electrical burns make up a significantly smaller fraction of burns that necessitate hospitalization, they nonetheless require special attention. The most common cause of these is contact with electrical wiring, however lightning strikes are also a component of the problem. Particularly noteworthy is the fact that oral commissure burns in children, which are caused by biting through electrical wires, provide particular treatment objectives, which will be explored further on in this chapter. Electrical burns can manifest with benign skin alterations that do not represent the more serious interior damages. These changes have the potential to cause fractures, dislocations, cardiac arrhythmias, and rhabdomyolysis. Even though lightning strikes are

uncommon, they have the potential to cause occult trauma to the head and neck [7]. Chemical burns are responsible for around three percent of all burns that are admitted to hospitals, as stated by the National Burn Registry. These burns can be caused by a wide variety of agents coming from the industrial or domestic sectors. When chemicals come into contact with the skin, they can cause injury if they are ingested orally or breathed in. A significant improvement in outcomes can be achieved by shortening the duration of interaction. Due to the fact that the eyes are extremely sensitive to chemical damage, they should be given extra attention in the case of any facial injuries that involve chemical exposure.

Burns produced by radiation are most commonly caused by exposure to the sun, but they can also be caused by ionizing radiation. The term "iatrogenic radiation" refers to either diagnostic or therapeutic radiation. Radioactive burns are treated in the same manner as other types of burns after any potential decontamination has taken place. It is possible for patients to get partial-thickness burns on their skin as a result of sun exposure. The nose and the tips of the ears are the most vulnerable areas, and they are frequently overlooked while applying sunscreen. On the other hand, the most majority are superficial and do not seek medical attention from a professional. It is possible to sustain corneal burns as a consequence of radiation exposure. The most prevalent cause of corneal burns is inadequate eye protection while welding, as well as sun exposure in particularly harsh conditions, such as snowfields and high altitudes [8].

Burns are typically the result of unintentional accidents; nevertheless, self-harm, abuse, or violence require careful attention for treatment. A little less than two percent of burns are the result of an assault or abuse, whereas one percent are the result of self-inflicted harm. Particularly when dealing with vulnerable groups, the clinician ought to maintain a high level of alertness in order to identify any instances of possible abuse or neglect. When dealing with children and adolescents who have face burns, it is necessary to take into account the possibility of non-accidental trauma [9].

Burn injuries have an immediate and long-term influence on the victims, their family members, and the healthcare services that they get. Burn injuries can limit and/or handicap functions and physical health, disfigure appearance, cause pain, and damage the social and psychological well-being of survivors for the rest of their lives [1–4]. Direct contact with heat, radiation, electricity, friction, and chemicals, as well as accidents and assaults, are the primary drivers of injuries [5–9]. Other factors

that contribute to injuries include friction and chemicals. The head and neck are frequently injured as a result of home accidents and assaults [10]. Common injuries include burns produced by flames and acid.

The victims of a burn to the face and neck area are left with a visible scar that has positive and negative effects on their physical and mental health. Immediately after a burn, the damaged area undergoes a number of changes, including the loss of tissue, the formation of scar tissue, the alteration of the structural morphology of the motor system, the inability to move freely and the restriction of function [11]. As the scar tissue matures over time, it contracts and further deforms the appearance. This can result in incompetent lips, limitation of mouth opening, incomplete oral occlusion, and, in the case of joint contracture, dysfunction of the temporomandibular joint and restriction of movement. These conditions have an impact on daily oral functions such as eating, swallowing, and speaking. The strain and tension of the scar contracture can have an effect on the growth of the maxilla and mandible in children, which can eventually lead to excessive anterior teeth protrusion and crowding [12]. It is possible for discomfort and pain to be caused by the stretching of scar tissues that occurs during mouth opening and jaw movement. Because of these issues, access to the oral cavity is restricted, and oral hygiene treatment is disrupted. As a result, the inefficiency that results from this situation increases the chance of developing dental caries and periodontal disorders, which will later have an impact on the quality of life related to oral health. In a study, it was discovered that people who have had facial burns have poor dental problems [13].

Despite the fact that there is a limited amount of discussion in the literature regarding whether or not the severity of a facial burn injury is related to the oral health-related quality of life of the victims, studies have shown that facial disfigurement causes psychological distress in patients who have suffered a facial burn injury. These psychological conditions are linked to poor dental conditions and oral health-related quality of life in the general population.

In surgical surgery, it is impossible, at best, to forecast the amount of blood loss that will occur and whether or not cross-matched blood will be required. If junior staff members are confronted with the challenge of determining how much blood to order, they frequently have nothing more than the ability to make an educated guess. With the exception of the primary study, which was a nomogram for the calculation of cross-matched

blood, there have been very few thorough investigations published. According to the findings of another study [14], it is recommended that 100 milliliters of whole blood be transfused for every one percent of the body surface that is removed. For a patient weighing 65 kilograms and with a blood capacity of 4.55 liters, this amounts to a loss of two percent of blood volume for every one percent of body surface that is excised, which is a relatively tiny amount of blood loss [14]. It is evident that this is merely an approximation and does not take into consideration the size of the body.

Burns to the face and eyes are more likely to be caused by fireworks, which are a common source of burns. Although their prevalence has declined over time, they continue to be a substantial cause of harm. As a general rule, boys are three times more likely than girls to sustain injuries, with around ten percent of those injuries resulting in lifelong impairment or disfigurement. The mouth can also be burned by electrical currents, which is another specialized mode of harm. Over the course of fifteen years, one facility treated an estimated total of 1042 pediatric patients. Approximately sixty percent of the patients were males, and the method of damage was primarily caused by electrical outlets, electrical lines, or extension cords. They were all younger than five years old. Within the scope of another study, the outcomes of seventy-five individuals who had oral burns and were treated at a burn center at Children's Hospital over a period of ten years were investigated. Chemical burns were the most common cause of injury, followed by electrical injuries, and then hot liquids. The majority of the victims were males. approximately ten percent of patients required intubation, but only approximately twenty percent required severe surgical intervention [15].

The mistreatment of children might result in burn injuries. It is estimated that burn injuries account for approximately ten percent of all occurrences of child abuse, with the majority of these cases involving children under the age of ten. Scalding is the most frequent type of burn injury, and it leaves characteristic patterns all over the body. For the doctor, the presence of donut-shaped burns on the buttocks, sparing of the soles of the feet, and "water lines" on the skin should serve as an indication that the patient may have suffered from a non-accidental injury. In addition, patterned injuries can be caused by scalds that are caused by hot things like cigarettes or culinary utensils. It is also important to pay attention to histories that are inconsistent or indications of past burns that have healed properly. The face is particularly susceptible to damage in situations involving abuse [15].

Additionally, there are socioeconomic risk factors that can contribute to a burn injury. The impoverished and the industrialized countries are both affected by this phenomenon. There are a number of risk factors that contribute to incidents in developing countries. These include open flames in the kitchen, a lack of shoes, an inadequate water supply, and large families that result in inadequate supervision. Single-parent households, residences with inadequate fireproofing, and living settings that are densely populated all put children in a particularly precarious position in the United States. There appears to be a general trend toward a reduction in the number of burn injuries and the severity of those injuries across the globe [15].

Conclusion:

A considerable risk to function is posed by burns to the face, but there is also an aesthetic component to their appearance. When it comes to commissural burns, early rebuilding is recommended in order to facilitate improved functionality. Even after receiving extensive physical treatment for a period of time ranging from months to years, individuals who have suffered face burns experience a considerable reduction in the vertical and horizontal oral apertures, which in turn restricts their functionality. Due to the fact that the burns can impact the orbicularis oris muscles as well as other tissues, microstomia is a typical complication that can occur despite the completion of early restoration. Results have been proven to be improved by the use of dynamic splints in conjunction with intralesional steroid injections. In order to achieve satisfactory outcomes, oral commissure repair typically entails the use of a mucosal advancement flap. Local flaps and skin grafts are two more therapeutic approaches. There has been a description of a novel method that involves the use of autologous full-thickness anal verge skin in order to reconstruct the vermilion border with favorable outcomes. Both the vermilion and the anal verge tissue are transitional epithelial tissue, and their appearances are very similar to one another. There are a number of different specialties that are engaged in the management of facial burns. These specialties include the dentist, paramedics at the first line, the medical laboratory for the need of cross-matching, and medical administrators for the appropriate referral to higher centers.

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