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EPIDEMIOLOGY AND MANAGEMENT OF FACIAL BURNS IN A TERTIARY CARE HOSPITAL IN ODISHA -A RETROSPECTIVE STUDY

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ABSTRACT

Introduction

Head and neck are most frequently involved with burn injuries. As its incidence varies between 27 to 60% in different conditions. In addition, 25 to 50 % of the total burn population are children (1).

The face is a psychologically significant area of the body, and multiple psychosocial consequences have been documented in patients with facial burns and their sequelae. Facial burns constitute 30 to 50% of minor to moderate burns and over 50% of large burns, the usual thickness being partial. As partial thickness burns of the face needs complex wound management, including pain control and frequent cleansing to avoid infection, these often require hospital care (2- 6). Besides, these are commonly associated with inhalational injuries. Superficial second degree facial burns usually heal spontaneously. Medium thickness second degree burns, which epithelialize in 10 to 14 days, often heal without scarring. However, changes in skin pigmentation and texture occur.

Because of their nature of developing late hypertrophic scars, medium to deep second degree burns that epithelialize in 14 to 28 days or longer, require close monitoring. (7). Full thickness burns on the face are uncommon due to the skin's high vascularity, which quickly dissipates heat. (8,9) Furthermore, flash burns,

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which usually cause partial thickness burns, are the most common cause of facial burns. Full thickness burns can be observed, especially in contact burns and in the event of prolonged exposure to the heating source, such as if the patient was unconscious or paralyzed when the accident occurred. In addition, in some places (e.g. the nose and ears), facial skin is very thin and more vulnerable to deep burns. If the nose and ears are deeply burned, the anatomical structures can get distorted. (8).

OBJECTIVES

This study aims to learn about the causes of facial burns, the depth of facial burns, their localization, the distribution of facial burns by gender and treatment options. Furthermore, the study examined tangential excision with thick split thickness skin graft for deep facial burns to prevent hypertrophic scarring and better aesthetic result.

MATERIALS AND METHODS

This retrospective study included 280 patients with facial burns who survived and were treated between 2020-2023 in the Department of Plastic and Reconstructive Surgery. The data was collected and analyzed from the medical record department of the institute. In addition, all the patients were followed up regularly in the OPD.

Results

In this retrospective analysis, we looked at 280 individuals who had survived facial burns for four years. There were 221 cases of facial burns in male patients, compared to only 59 cases in female patients (Table 1). Burns was caused by scald and liquid in 134 cases, followed by burns caused by electricity in 86 cases, and facial burns were caused by flame and fire in 60 cases (Table 1). 22 patients had a facial burn exclusively, while 258 individuals had burned other portions of their bodies in addition to their faces (Table 1). In 232 cases, there were superficial burns, and in 48 cases, there were deep burns. Conservative treatments with the cleansing of the burned area were used in 243 cases, while surgical procedures were used in 37 cases. After screening them at two weeks, patients who healed within three weeks were treated conservatively. Others were operated upon and had thick split thickness skin graft applied to them, generally from the scalp. (Table-2). Skin grafting in these patients improved the overall cosmesis, fastened the recovery process and hospital stay and potentially prevented late hypertrophic scars.

Although we did not manage wounds not healing for more than 21 days

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conservatively in this study, there was a marked aesthetic improvement and decreased hospital stay in these grafted patients compared to other patients managed conservatively in our hospital.

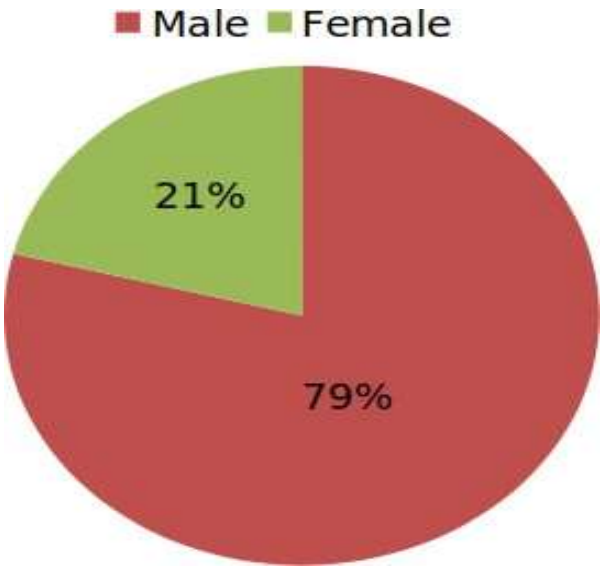

Figure 1 Gender distribution (Percentage).

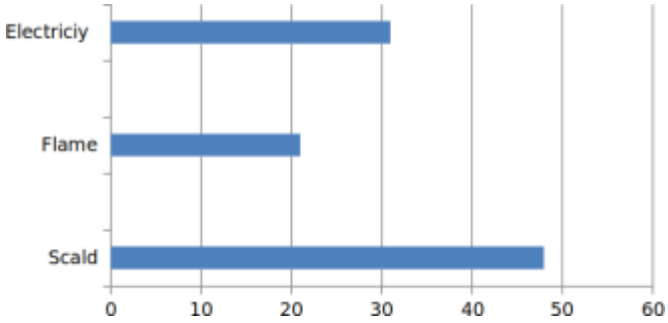

Figure 2 Causes of facial burns (Percentage).

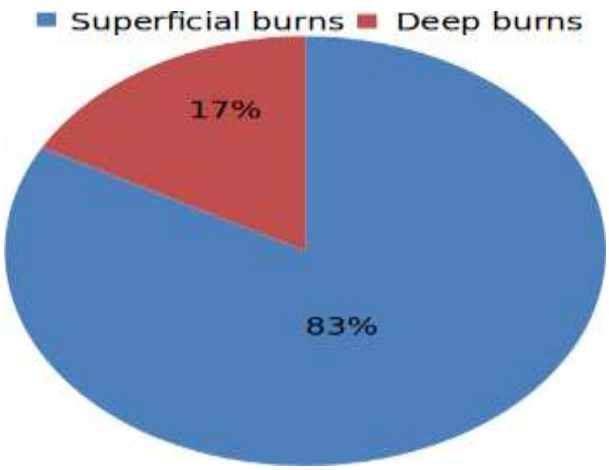

Figure 3 Depth of burns (Percentage)

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Discussion

Facial and inhalational burns challenge clinicians in intensive care (10-11). In this retrospective analysis, we looked at 280 individuals who had facial burns for five years. Male patients were more likely to have facial burns, with 221 instances (79%) compared to only 59 cases (21%) in female patients. Castana et al. found that females predominated in a sample of 1061 patients with face burns, with a 61 percent incidence compared to a 39 percent male incidence (12).

Another study by Zatriqi V et al. documented a male predominance with 83% compared to 17% in female cases (13). Burns was caused by scald and liquid in 134 instances (48%), foll owed by facial burns caused by electricity in 86 cases (31%), and flame and fire in 60 cases (21%). Mustafa H. Ali conducted a similar study of 277 patients and found that scalds were the leading cause of burn injuries with 49.1%, followed by flame burns with 37.5 percent (14). Higher incidence of electric burns in our study may be attributed to dangerous practices of electric department employees and inadequate infrastructure in this part of the world. A similar observation was made by Kasana RA et al., who showed a higher incidence of high voltage injuries in the

Table 1 Case distribution by gender, cause and localization.

Gender	**Number**	**Percentage**
Male	221	79
Female	59	21
Cause		
Scald	134	48
Flame	60	21
Electricity	86	31
Localization		
Face only	22	8
Other parts Of the body	258	92
Total	**280**	**100**

Table 2 Depth of the burns and treatment.

Depth of the burns	**Number**	**Percentage**
Superficial burns	232	83
Deep burns	48	17

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Treatment		
Conservative treatment	243	87
Surgical treatment	37	13
Total	**280**	**100**

20-40 years age group in the population and attributed it to greater risk-taking behaviour and a more aggressive and careless attitude among patients in this group. Additionally, they were inexperienced and inadequately trained in electrical workers and daily wagers working lack proper transmission lines (15). About 22 patients (8%) had only a facial burn, while 258 patients (92%) had burned other portions of their bodies besides their faces. 232 patients (83 percent) had superficial burns, while 48 cases (17 percent) had deep burns.

Conservative therapies were used in 243 cases (87 percent) to clean the burned surface. In comparison, surgical treatments were used in 37 cases (13%). Similarly, Zatriqi V et al. managed about 96% of patients conservatively, and 4 % were operated upon (13). After screening them at two weeks, patients who healed within three weeks were treated conservatively. Others were operated on and had thick split thickness skin graft applied to them, generally from the scalp. In a similar study, Fraulin FO et al. reassessed facial burns on 10 the post-burn day, and surgery was planned for any wound not estimated to be healed by 21 st post-burn day(16).

Skin grafting in these patients improved the overall cosmesis, fastened the recovery process and hospital stay and potentially prevented late hypertrophic scars. Comparable results were found in studies by Zatriqi V et al. and Fraulin FO et (13,16).

Conclusion

Burns to the face are usually considered serious as these are frequently associated with respiratory complications. In addition, inhalational burns lower a victim’s chances of survival in all age groups.

In our retrospective analysis, we discovered that facial burns were more common in men, and that liquids and scalds were the most common causes of facial burns. In addition, our research found that wounds that heal within three

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weeks should be treated conservatively, and those that don't heal within three weeks should have skin grafted to avoid unsightly contractures.

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