



## Comparitive Study of Abnormal Scars After Routine and Emergency Surgery and Role of Infection in Thier Development

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### ABSTRACT

*Excessive scar tissue formation after surgeries or trauma has long been a subject of vital problem not only for the patients as a cosmetic distress but also for Plastic and General Surgeons treating abnormal scars due to their high postoperative recurrence.*

*This study aims to provide an overview on increase incidence of pathological scar due to emergency surgeries and tension suturing.*

*A prospective analysis of the clinical records of 100 Patients underwent surgical procedure in department of burn and plastic surgery, department of general surgery, cardiothoracic-vascular surgery and paediatrics surgery from October 2012 -December 2013 at Hamidia Hospital, Bhopal was done. Patients were analyzed on basis of routine and emergency surgery and pus culture report of wound. It was reported that patients underwent emergency surgery had high rates of abnormal scar formation due to infection, tension suturing and healing by secondary intention.*

**KEYWORDS : Hypertrophic scar, keloid.**

### INTRODUCTION-

Excessive scars are benign fibrous growth that form as a result of aberrations of physiologic wound healing and may develop following any insult to the deep dermis, including burn injury, lacerations, abrasions, surgery, piercings and vaccinations. By causing pruritus, pain and contractures, excessive scarring can dramatically affect a patient's quality of life, both physically and psychologically. Excessive scarring was first described in the Smith papyrus about 1700BC<sup>1</sup>.

Many years later Mancini (in 1962) and Peacock (in 1970) differentiated excessive scarring into hypertrophic and Keloid scar formation<sup>2</sup>

Our study is focused to study mode of occurrence of hypertrophic scar and keloid after surgery and to study role of infection in developing abnormal scar and to prepare recommendations for prevention of pathological scar.

### METHOD-

A prospective analysis is conducted on Patients admitted in department of burn and plastic surgery, department of general surgery and paediatrics surgery for operative procedure from October 2012 -December 2013 at Hamidia Hospital, Bhopal. Patient's data was collected and compiled to study development of pathological scar. Data analysis was done by Fishers exact test to asses outcome of study.

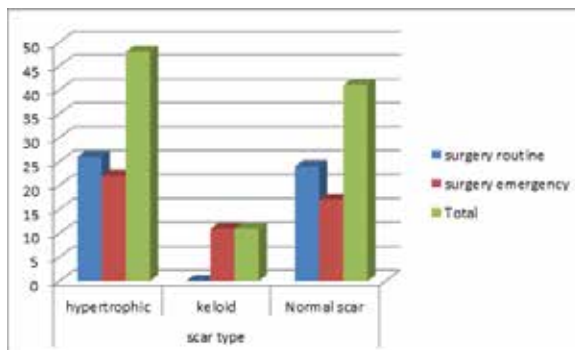
### OBSERVATION-

This is a prospective analysis of the clinical records of 100 Patients underwent surgical procedure in department of burn and plastic surgery, department of general surgery, cardiothoracic-vascular surgery and paediatrics surgery from October 2012 -December 2013 at Hamidia Hospital, Bhopal. Patients were analyzed on basis of routine and emergency surgery and pus culture report of wound.

The tables below depict the observations and result obtained in this study-

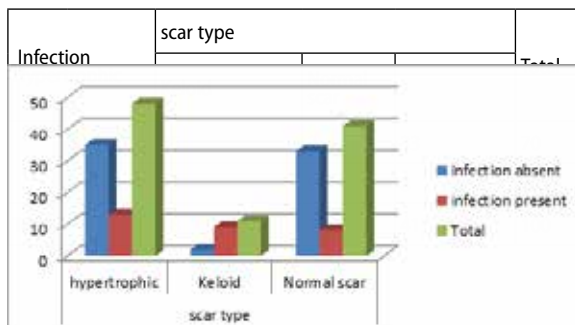
**TABLE NO 1- SHOWING INCIDENCE OF SCARS IN EMERGENCY AND ROUTINE SURGERIES**

|         |           | scar type    |        |             | Total |
|---------|-----------|--------------|--------|-------------|-------|
|         |           | Hypertrophic | Keloid | Normal scar |       |
| surgery | routine   | 26           | 0      | 24          | 50    |
|         | emergency | 22           | 11     | 17          | 50    |
| Total   |           | 48           | 11     | 41          | 100   |



Out of 100 patients in group 59 developed abnormal scar out of which 25 (42.3%) was operated in emergency hours and in 11 (44%) patients abnormal scar is developed.

**TABLE NO 2- SHOWING HISTORY OF INFECTION IN ABNORMAL SCARS**



In group of 100 patients 59 patients developed abnormal scar out of which 22 had history of infection (37.2%).

### DISCUSSION-

This series includes 55 females 45 male patients reporting 38 females and 21 male patients having abnormal scars. Total number of hypertrophic scar reported are 48 and keloid are 11.

Out of 100 patients in group 59 developed abnormal scar in which 25 (42.3%) was operated in emergency hours and in 11 (44%) patients abnormal scar is developed, this correlate with study of **Espana et al (2001)**<sup>3</sup> who in their series reported in 40% cases keloid were following surgery while 25% of cases no definite history could be elicited.

Stegman et al (1990)<sup>4</sup> and Stucker et al (1992)<sup>5</sup> describes that skin or wound tension has also been implicated as a critical factor in hypertrophic scars and keloid, as have been incisions beyond the relaxed skin tension lines.

Abnormal scars tend to occur more in patients who developed wound infection during healing phase leads to wound healing by secondary intention, especially if healing time is greater than 3 weeks. Wheeland RG et al. (1996)<sup>6</sup> reported that hypertrophic scarring usually occur following wound infection.

Tension suturing or secondary suturing may play role in abnormal scars development as pathological scars are commonly noticed in patients underwent tension or secondary suturing and this correlate with study of Wheeland RG et al. (1996)<sup>6</sup> who reported that hypertrophic scarring usually occur following wound closure with excess tension.

Carney et al (1994)<sup>6</sup>, Eisenbeiss et al (1998)<sup>7</sup> Shakespeare et al (1993)<sup>8</sup> also reported in their studies that hypertrophic scars tend to originate from surgery

#### CONCLUSION-

In 59 patients who developed abnormal scar 25 (42.3%) were operated in emergency hours out of which 11 (44%) patients develop abnormal scarring and in 22 (37.2%) patients infection is reported.

In our study group, we have concluded that patients undergoing emergency surgeries are more prone for development of abnormal scar. This observation can be supported by fact that abnormal scarring is more common in infected wounds undergoing tension suturing as supported by other studies.

Therefore many surgeons stress the importance of minimizing tension across a wound which can lead to pathological scar formation.

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