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"Comparative Study of SubcuticularStitches Vs Steristrip in Thyroid Surgery"

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Abstract
Aims and objectives:
The study compared subcuticular suture and steristrips for woundclosure after thyroid surgery based on

- *Post operative Pain assessment*
- *Post operative Neck mobility*
- *Post operative Scar appearance*

Materials, methods and observation:
A prospective, open label, randomized, comparative study isplanned on patients attending General Surgery OPD ,fulfilling the inclusion and exclusion criteria over a period of 10 months after obtaining a written informed consent using a purposive sampling technique.
Conclusion:
Steristripes are tapes which have a great potential in the near future for closure of surgical wounds. This study shows the importance of alternative methods of wound closure and its positive potential in the future of management of surgical wound.

Keywords: *subcuticular sutures, Steristripes*

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I. Introduction

One of the most important outcomes of wound repair is long term aesthetic or cosmetic appearance of the scar. It has a particular relevance in neck surgeries where the scar is placed a very easily seen area. The goal of surgery is to achieve such healing with minimal odema, no discharge or infection and minimal scarring

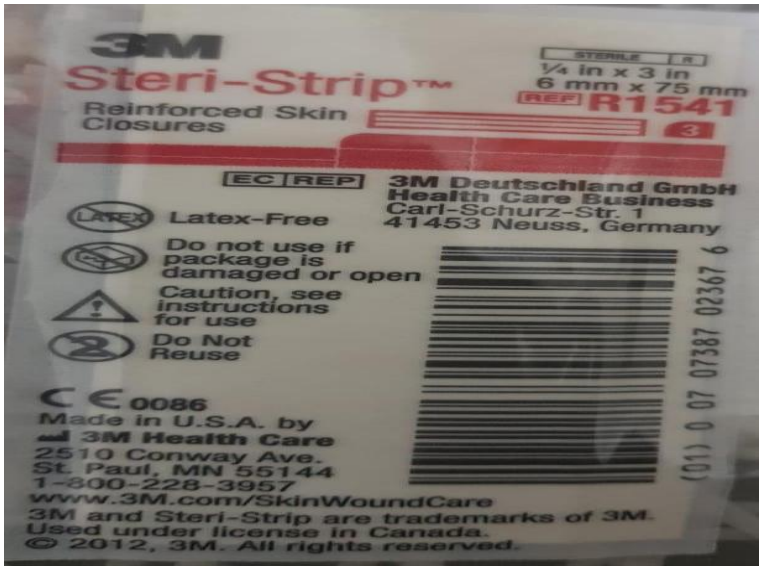
Suture techniques that avoid suture marks such as ''railroad tracks,'' especially in skin exposed in normal clothing, are generally more aesthetically pleasing to the patient. In the selection of a suture, a patient's health status, age, weight and comfort, and the presence or absence of infection are as important as the biomechanical properties of the suture, individual wound characteristics,[1] anatomic location, and a surgeon's personal preference and experience in handling a suture material. There is often more than one appropriate method of closure.

In the present day scenario, people are aware of the various diseases and the modalities of treatment available from the advances in communication services; people avail treatment at a very early stage in disease and expect the best outcome in terms of disease treatment and cosmetic appearance. In the Indian set up next to lymphnode excision thyroid surgery is the most commonly performed surgery by general surgeons in the neck. Thyroid disorders are most commonly seen in females mostly women and young adults who are very cautious of their beauty and appearance.

Thyroid is a very vascular structure which its needs general anesthesia for removal. Skin closure is the last step of any surgery where much time should not be spent so as to avoid unnecessary exposure of anesthetic risks to the patient. The ultimate responsibility for the choice of the best material lies with the surgeon. Cosmetic acceptability of scar and neck mobility are important outcomes after collar line incision for neck surgery. In view of the above said facts we decide to study Steristrip and subcuticular suturing closure technique in thyroid surgery, with the aim to study which type of wound closure is simple, fast, tension free with no subsequent adverse reactions, creation of protective barrier to pathogens has a simple post operative management, simple for suture removal and optimalcosmetic appearance of scar.

Needles present in sutures makes the surgeon and assistant susceptible to needle stick injuries. The

use of sutures leaves suture marks perpendicular to the line of incision. These disadvantages lead to the quest for alternative method of wound closure.



II. Aims And Objectives

The study compared subcuticular suture and steristrips for woundclosure after thyroid surgery based on

- Post operative Pain assessment
  Post operative Neck mobility
- Post operative Scar appearance

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III. Materials And Methods

A prospective, open label, randomized, comparative study is planned on patients attending General Surgery OPD ,fulfilling the inclusion and exclusion criteria over a period of 10 months after obtaining a written informed consent using a purposive sampling technique.

Patients undergoing thyroidectomy were randomized to had their wounds closed by subcuticular sutures or steristrips based on simple randomization table.

Postoperative pain is assessed by verbal response and visual analogue scale for 3 consecutive postoperative days, neck mobility is assessed at 48 hours and one week after surgery using verbal and visual analogue scale and assessment of cosmetic appearance will be done by usingModified Hollander scale on POD 1, POD 2,POD 3,POD 30 and POD 90.

Subjects of either sex undergoing thyroidectomy over a period of 10 months were included in the study. Patients with history of previous neck irradiations, secondary neck surgeries, and patients with poor compliance are excluded from the study. Descriptive statistics, unpaired t- test and chi-square test were used to analyse the results

IIIA: ELIGIBILITY CRITERIA:

A.INCLUSION CRITERIA:

- Age >18 yrs , <65yrs
- Patients consented to the study according to designated proforma
- Both sexes
- Benign lesions

B.EXCLUSION CRITERIA:

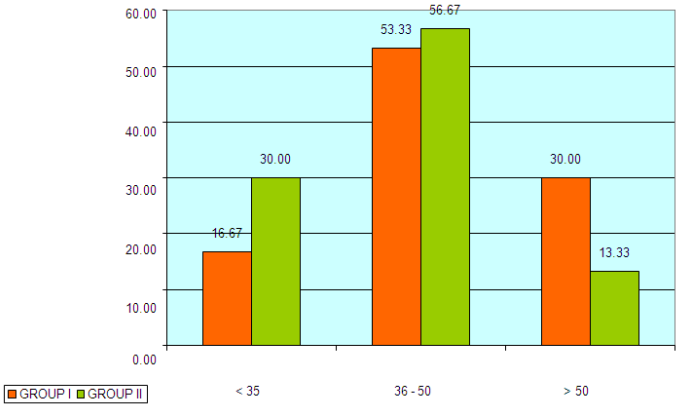
- Age <18yrs , >65yrs
- Immunocompromised states
- Patients not consented to the study according todesignated proforma
- Malignant conditions
- Previous neck irradiations

- Secondary neck surgeries
- Patients with poor compliance

IV. Observation And Results

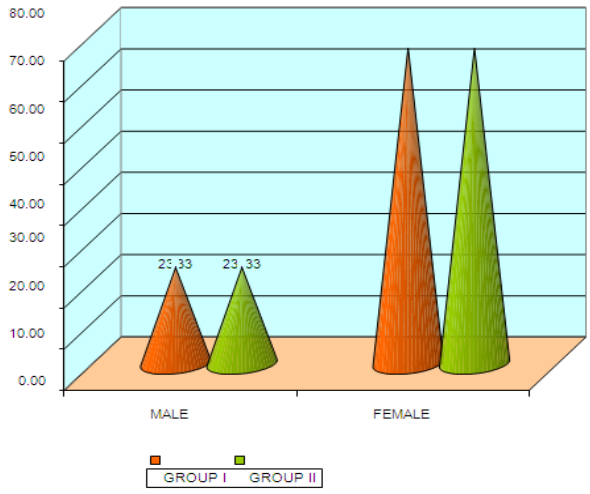
1. COMPARISON OF AGE

Age 1	GROUP I	%	GROUP II	%
< 35	5	16.67	9	30.00
36 - 50	16	53.33	17	56.67
> 50	9	30.00	4	13.33
TOTAL	30	100.00	30	100.00
Mean	45.567		42.767	
SD	9.254		8.947	
P'value	0.238 Not Significant			



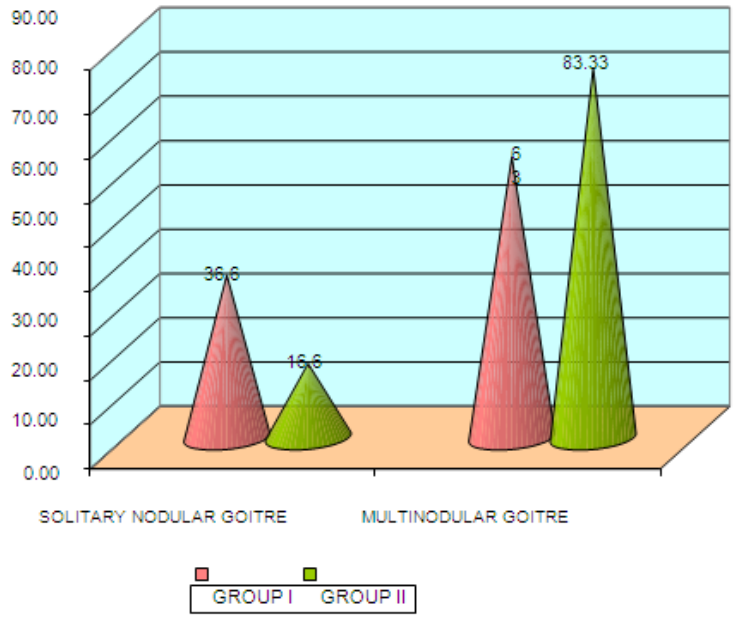
2. COMPARISON OF SEX

Sex 2	GROUP I	%	GROUP II	%
MALE	7	23.33	7	23.33
FEMALE	23	76.67	23	76.67
TOTAL	30	100.00	30	100.00
P'value	1.000 Not Significant			



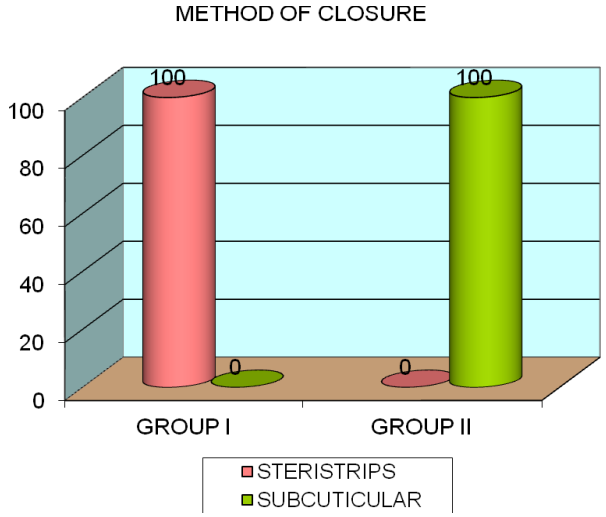
3. INDICATION FOR SURGERY

INDICATION FOR SURGERY	GROUPI	%	GROUP II	%
SOLITARY NODULARGOITRE	11	36.67	5	16.67
MULTINODULARGOITRE	19	63.33	25	83.33
TOTAL	30	100.00	30	100.00
P'value	0.144 Not Significant			



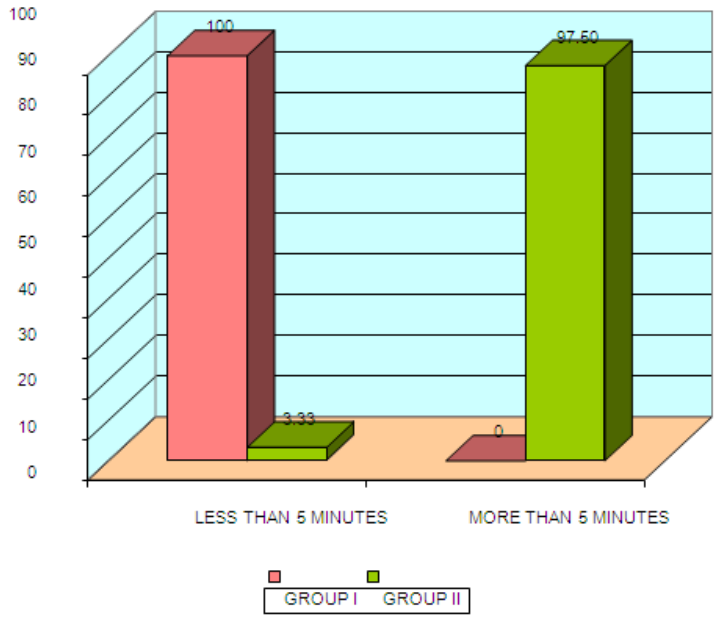
4. METHOD OF CLOSURE

METHOD OF CLOSURE	GROUPI	%	GROUP II	%
4 STERISTRIPS	40	100.00	0	0.00
SUBCUTICULAR	0	0.00	40	100.00
TOTAL	40	100.00	40	100.00
P'value	<0.001 Significant			



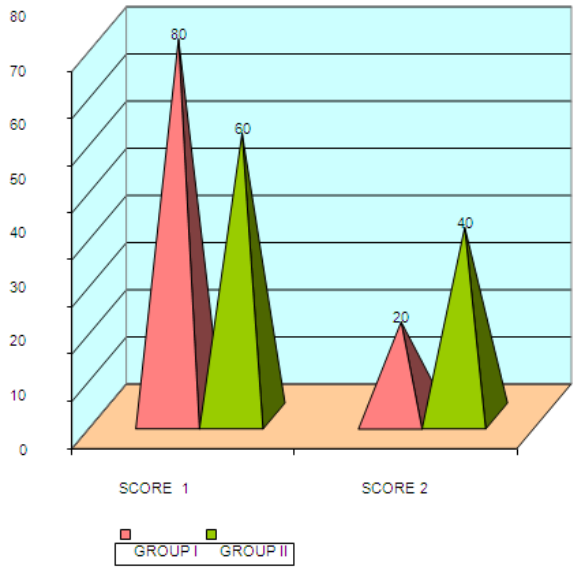
5. DURATION OF CLOSURE

DURATION OF CLOSURE	GROUPI	%	GROUP II	%
LESS THAN 5 MINUTES	40	100.00	1	3.33
MORE THAN 5 MINUTES	0	0.00	39	97.50
TOTAL	40	100.00	40	133.33
P'value	<0.001 Significant			



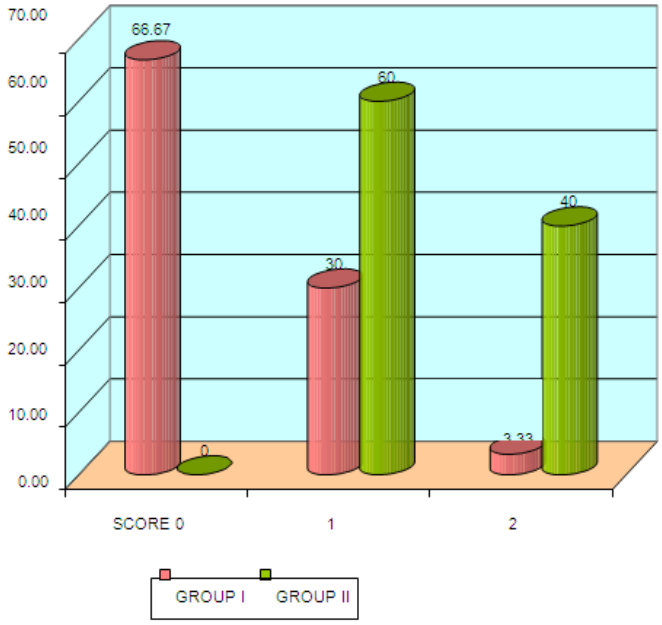
6. PAIN VISUAL @ DAY 1

PAIN VISUAL AS @ DAY1	GROUPI	%	GROUP II	%
1	24	80.00	18	60.00
2	6	20.00	12	40.00
TOTAL	30	100.00	30	100.00
P'value	0.159 Not Significant			



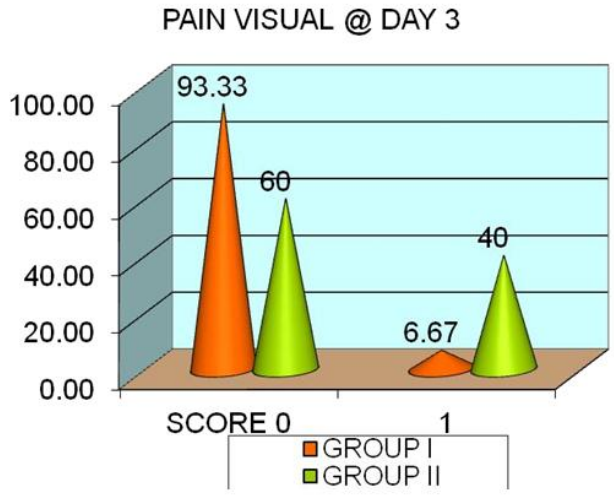
7. PAIN VISUAL @ DAY 2

PAIN VISUAL AS @DAY2	GROUPI	%	GROUP II	%
0	20	66.67	0	0.00
1	9	30.00	18	60.00
2	1	3.33	12	40.00
TOTAL	30	100.00	30	100.00
P'value	<0.001 Significant			



8. PAIN VISUAL AS @DAY3

PAIN VISUAL AS @DAY3	GROUPI	%	GROUP II	%
0	28	93.33	18	60.00
1	2	6.67	12	40.00
TOTAL	30	100.00	30	100.00
P'value	0.006 Significant			

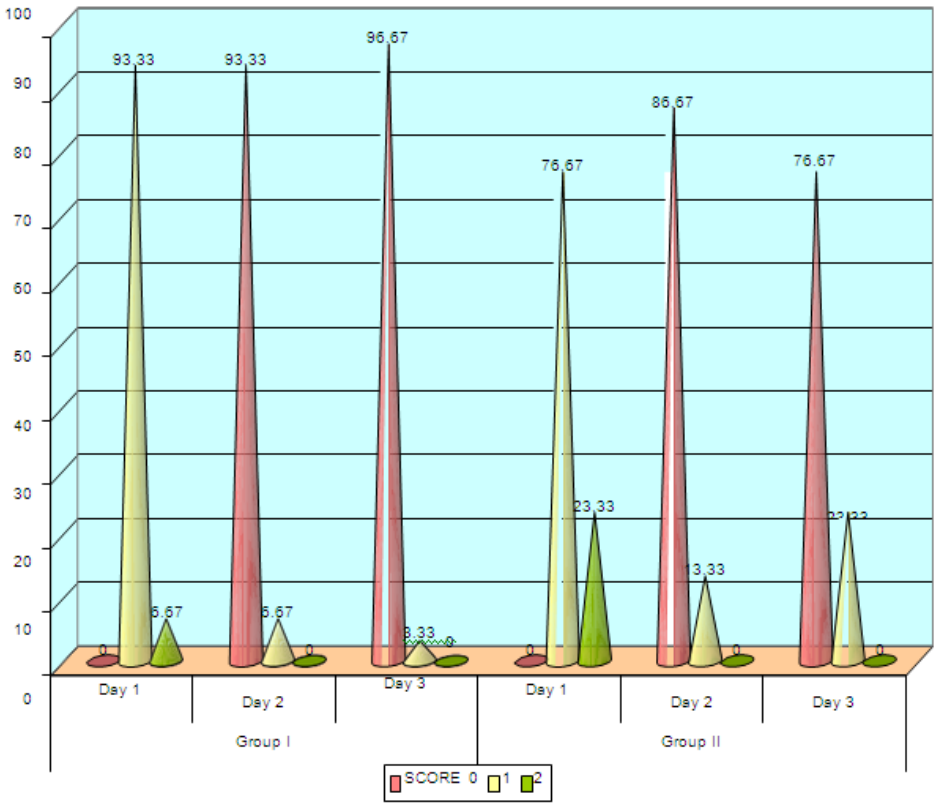


9. PAIN VERBAL COMPARISON

PAIN VERBAL AS @DAY1	GROUP I	%	GROUPII	%
1	28	93.33	23	76.67
2	2	6.67	7	23.33
TOTAL	30	100.00	30	100.00
P'value	0.148 Not Significant			

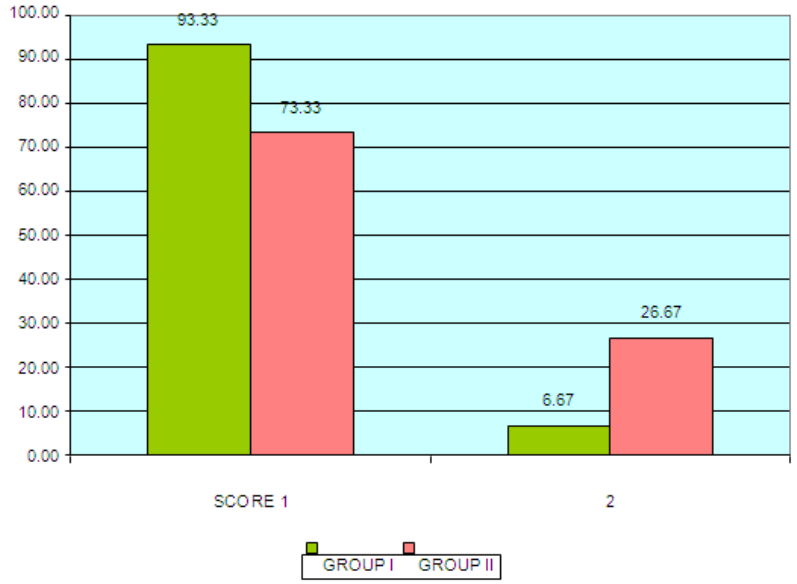
PAIN VERBALAS @ DAY 2	GROUP I	%	GROUP II	%
0	28	93.33	26	86.67
1	2	6.67	4	13.33
TOTAL	30	100.00	30	100.00
P'value	0.667 Not Significant			

PAIN VERBALAS@ DAY3	GROUPI	%	GROUP II	%
0	29	96.67	23	76.67
1	1	3.33	7	23.33
TOTAL	30	100.00	30	100.00
P'value	0.058 Not Significant			



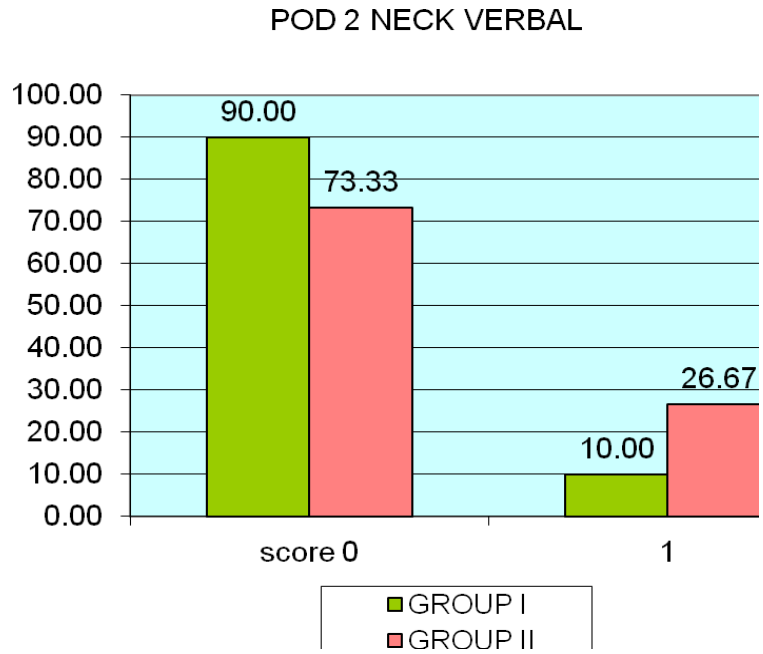
10. POD 2 NECK VISUAL

POD 2 NECK VISUAL AS	GROUPI	%	GROUP II	%
1	28	93.33	22	73.33
2	2	6.67	8	26.67
TOTAL	30	100.00	30	100.00
P'value	0.083 Not Significant			



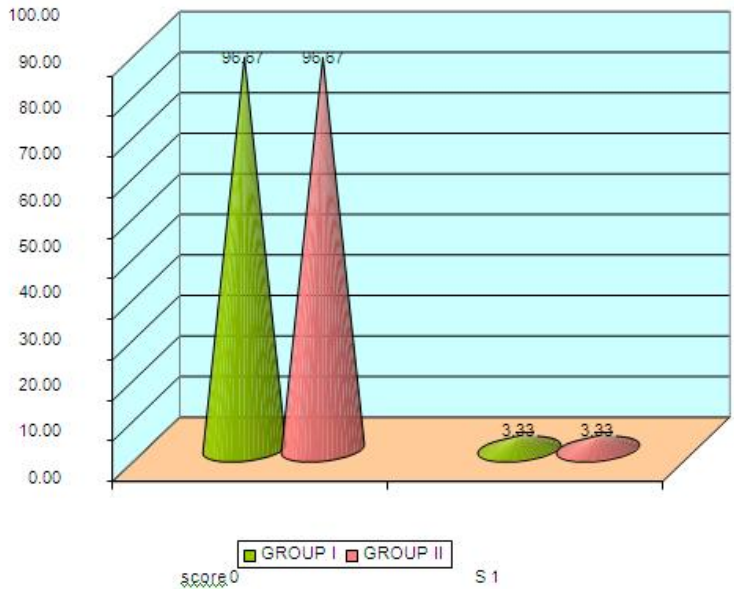
11. POD 2 NECK VERBAL

POD 2 NECK VERBAL AS	GROUPI	%	GROUP II	%
0	27	90.00	22	73.33
1	3	10.00	8	26.67
TOTAL	30	100.00	30	100.00
P'value	0.182 Not Significant			



12. POD 7 NECK VISUAL

POD 7 NECK VISUAL AS	GROUP I	%	GROUP II	%
0	29	96.67	29	96.67
1	1	3.33	1	3.33
TOTAL	30	100.00	30	100.00
P'value	0.472 Not Significant			

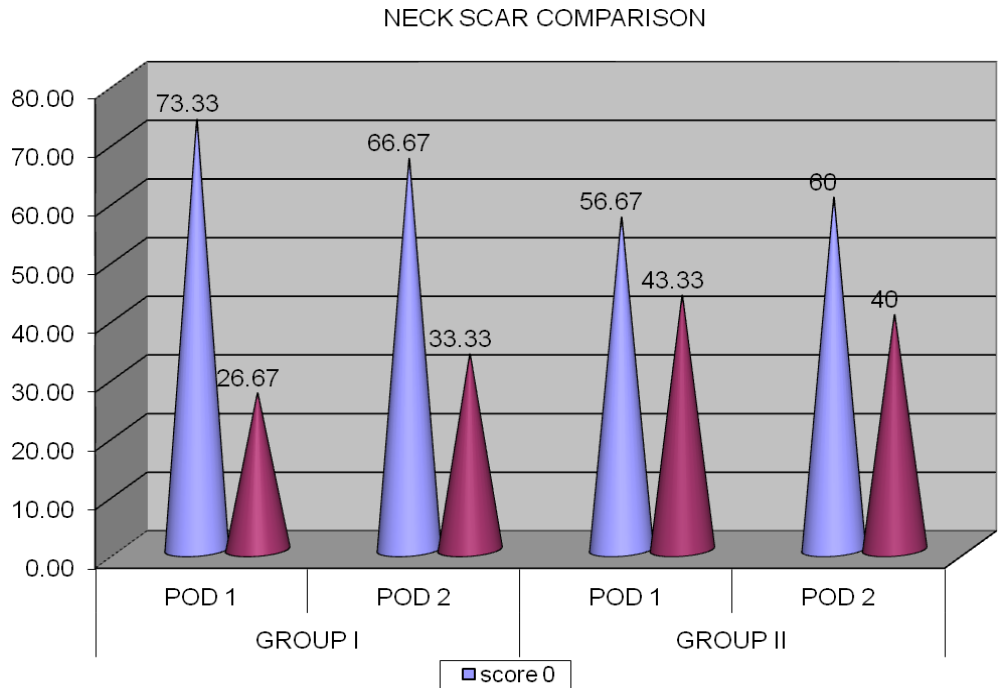


13. NECK SCAR COMPARISON

POD 7 NECK VERBAL AS	GROUPI	%	GROUP II	%
0	29	96.67	29	96.67
1	1	3.33	1	3.33
TOTAL	30	100.00	30	100.00
P'value	0.472 Not Significant			

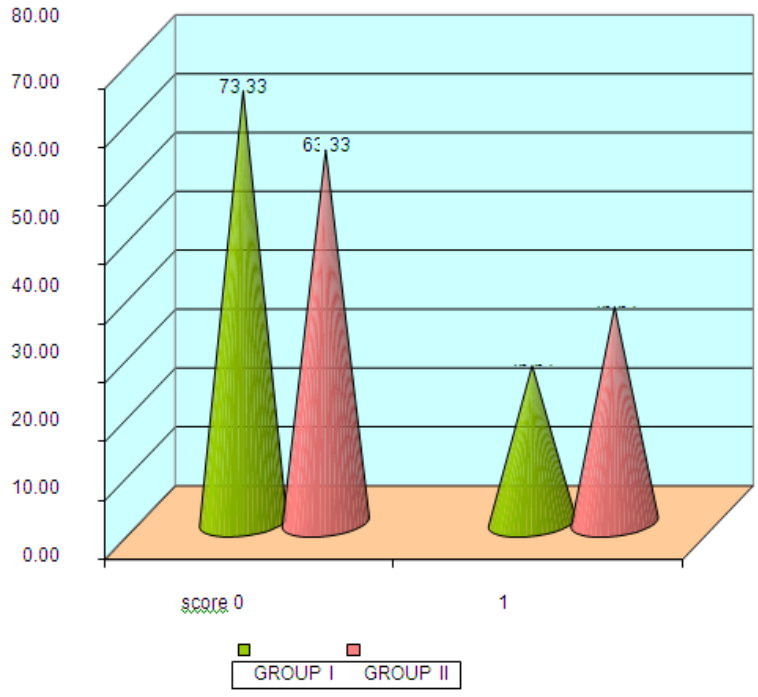
POD 1 NECK SCAR	GROUPI	%	GROUP II	%
0	22	73.33	17	56.67
1	8	26.67	13	43.33
TOTAL	30	100.00	30	100.00
P'value	0.279 Not Significant			

POD 2 NECK SCAR	GROUPI	%	GROUPII	%
0	20	66.67	18	60.00
1	10	33.33	12	40.00
TOTAL	30	100.00	30	100.00
P'value	0.789 Not Significant			



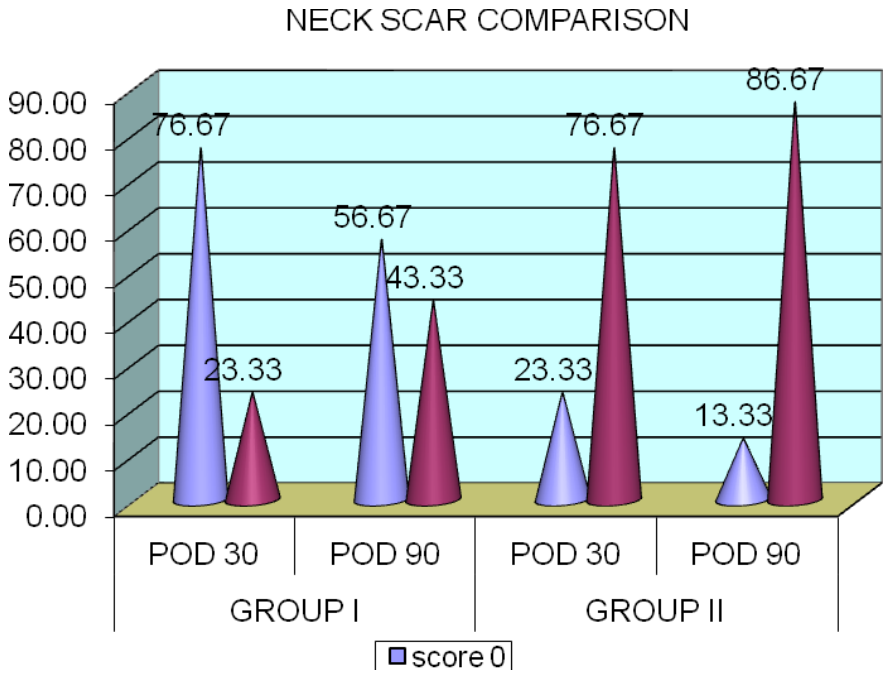
14. NECK SCAR - POD 3

18POD 3 NECK SCAR	GROUPI	%	GROUPII	%
0	22	73.33	19	63.33
1	8	26.67	11	36.67
TOTAL	30	100.00	30	100.00
P'value	0.579 Not Significant			



15. NECK SCAR COMPARIOSN POD 30

POD 30 NECK SCAR	GROUPI	%	GROUP II	%
0	23	76.67	7	23.33
1	7	23.33	23	76.67
TOTAL	30	100.00	30	100.00
P'value	<0.001 Significant			



V. Discussion

The aim of any skin closure technique is to precisely appose the skin edges without tension for sufficient time to allow healing to take place**.** The factors which have to be considered in making a comparison of different types of wound closure are the complication rate, the ease and speed with which the skin closure is completed, the level of patient discomfort and the final cosmetic result.

Many of these factors became especially significant when considering cervical collar incision. Min our experience, patients are more worried about having incision made in the neck than they would be for almost any other region of the body.

The final cosmetic appearance of a neck wound is also of great importance to patients as the wound is likely to be permanent on view. On benefit of neck incision is that the blood supplyis so good, they heal very quickly. The placement of subcuticular sutures probably requires more technical expertise.

Time is an important factor in the operating room. New innovations in surgery have made the operating procedure efficient by decreasing the time required. For example, the advent of gut staplers has significantly reduced the time required for bowel anastomosis when compared to conventional sutures. Similar advances havebeen made in the wound closure technique.

The scar is the absence of scar itself. The surgical site scar is

something that remains in the patient for the rest of their life following the operation. Hence, medical researches are continuously striving for a scarlesswound closure technique.

Though sutures have been in use for centuries from now, there is only a little improvement in the postoperative suture mark.

Surgical scar is one of the key factors that make many people unwilling for surgery and seek non surgical alternatives. Hence patient satisfaction is an important aspect.

Every surgeon would prefer a wound closure technique that is simple to use, efficient and without any risk of any needle stick injury. Steristrip scores over sutures in all these points.

VI. Conclusion

Steristripes are tapes which have a great potential in the near future for closure of surgical wounds. This study shows the importance of alternative methods of wound closure and its positive potential in the future of management of surgical wound.

In the final analysis, the choice of wound closure materials willdepend on the surgeon's preference. There was no considerable difference in postop neck mobility on comparing subcuticular and steristripes. However this study thus show that steristripes can be removed more quickly and cause less discomfort than removal of sutures.

Steristripes had excellent neck pain, scar appearance on comparing with subcuticular sutures.

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FIGURES:

POD 7 STERISTRIP WOUND CLOSURE

POD 7 SUBCUTICULAR SUTURING

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