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THE IMPACT OF POST-THYROIDECTOMY NECK EXERCISES AND WOUND MASSAGE ON NECK DISCOMFORT, NECK PAIN AND FLAP EDEMA IN THE POST OPERATIVE PERIOD: A QUASI EXPERIMENTAL STUDY

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INTRODUCTION

- Patients who undergo thyroid surgery frequently suffer from unpleasant symptoms such as neck pain, neck discomfort, hypoesthesia of the neck and flap oedema. Only a few studies have been reported in literature looking into the effect of neck stretching exercises and wound massage in post-op symptom relief.

AIM

- To evaluate the efficacy of neck exercises and wound massage in the post thyroidectomy period, in reducing neck discomfort, neck pain and flap oedema.

MATERIALS & METHODS

- The study was conducted in the Department of Endocrine surgery at Rajiv Gandhi Government General Hospital and Madras Medical college, Chennai from December 2022 to September 2023.

Inclusion criteria :

- All Total/Hemi thyroidectomy patients
- Age > 18 years

Exclusion criteria:

- Previous neck/thyroid surgery
- History of head and neck malignancy/ Radiotherapy to neck
- Cervical Radiculopathy

- All patients who met the inclusion criteria were allotted into intervention group and control group. A total of 72 patients were included in the study,36 allotted to each group. Patients operated in 1st and 3rd week were allotted to **intervention group** and patients operated in 2nd and 4th week were allotted to **control group**.
- **Neck exercises** with 8 steps were taught to the patient in the Intervention group and advised to start from POD 1 onwards. Patients were asked to perform 5 replicates of each neck exercise, 3 times per day for a period of 4 weeks.
- **Wound massage** was also taught to the patient in the intervention group at the time of discharge and was started from 3rd week onwards.3 sessions were done per day for a period of 4 weeks.
- Neck pain was assessed using Numeric Pain Rating Scale (**NPRS**). Maximum score:10
- Neck discomfort was assessed using Copenhagen neck functional disability scale (**CNFDS**). Maximum score:30
- Flap edema was assessed clinically and radiologically by measuring the flap thickness at three areas. All the above three parameters were assessed preoperatively and on post operative day 5, day 14,30 and 60.
- Statistical Analysis was done using SPSS version 23.

RESULTS

Baseline characteristics of patients

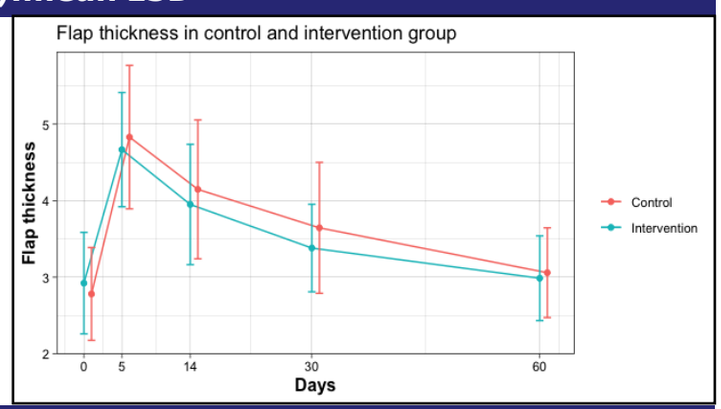
Table 1. Baseline characteristics of patients

	Control (n=36)	Intervention (n=36)	p-value
Age(years)	43.3 ± 11.3	38.0±12.0	0.058
Gender (M: F)	2:34	6:30	0.261
Diagnosis			0.510
Graves' disease	7 (19.4%)	6 (16.7%)	
MNG	16 (44.4%)	10 (27.8%)	
MNG with RSE	0 (0%)	1 (2.8%)	
STN	11 (30.6%)	15 (41.7%)	
Thyroiditis	0 (0%)	1 (2.8%)	
Toxic MNG	2 (5.6%)	2 (8.3%)	
Thyroid function status			0.568
Euthyroid	27 (75.0%)	25 (69.4%)	
Hyperthyroid	9 (25.0%)	10 (27.8%)	
Hypothyroid	0(0%)	1(2.8%)	
Duration of surgery, hrs	2.1 ± 0.5	2.2 ±0.5	0.185
Gland volume, cm^3	36.7 ±29.9	32.4 ±26.8	0.515

- Both NPRS and CNFDS scores were significantly lower in the intervention group compared to the control group in the first post operative month. No significant difference was seen one month after surgery.
- There was no significant difference between the flap thickness of two groups in the post op period

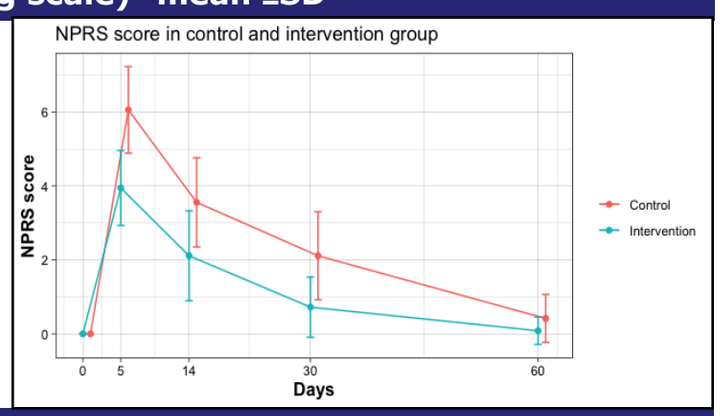
Flap thickness(mm):mean ±SD

Post op day(POD)	Intervention group (n=36)	Control group (n=36)	p-Value*
Baseline-preop	2.92 ± 0.66	2.78 ± 0.61	0.347
POD 5	4.67 ± 0.75	4.83 ± 0.94	0.415
POD 14	3.95 ± 0.79	4.15 ± 0.91	0.328
POD 30	3.38 ± 0.57	3.64 ± 0.86	0.129
POD 60	2.99 ± 0.55	3.06 ± 0.59	0.592
*student t-test			



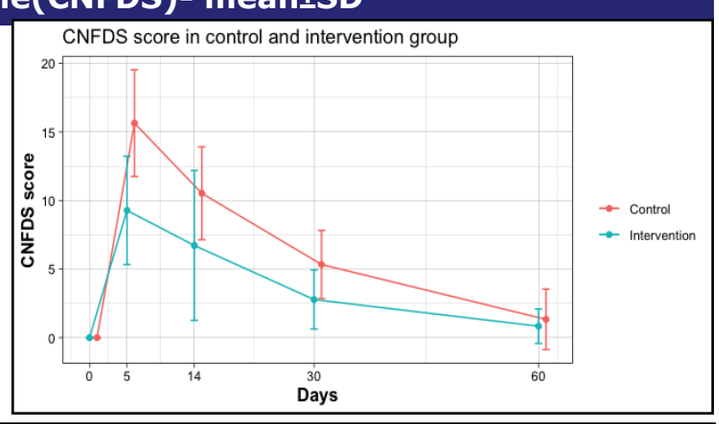
NPRS(Numerical pain rating scale)- mean ±SD

Post op day(POD)	Intervention group (n=36)	Control group (n=36)	p-Value*
Baseline-preop	0.0 ± 0.0	0.0± 0.0	NA
POD 5	3.9 ±1.0	6.1 ± 1.2	<0.001
POD 14	2.1 ± 1.2	3.6 ± 1.2	<0.001
POD 30	0.7 ± 0.8	2.1 ± 1.2	<0.001
POD 60	0.1 ± 0.4	0.4 ± 0.6	0.009
*student t-test			



Neck functional disability Scale(CNFDS)- mean±SD

Post op day(POD)	Intervention group (n=36)	Control group (n=36)	p-Value*
Baseline-preop	0.0 ± 0.0	0.0± 0.0	NA
POD 5	9.3 ± 3.9	15.6 ± 3.9	<0.001
POD 14	6.7 ± 5.5	10.5 ± 3.4	<0.001
POD 30	2.8 ± 2.2	5.3 ± 2.5	<0.001
POD 60	0.8 ± 1.3	1.3 ± 2.2	0.241
*student t-test			



LITERATURE REVIEW

	Present study	Takamura et al[1]	Rikke Taudal et al[2]
	-	World Journal of Surgery	World Journal of surgery
Year	2023	2005	2022
Study place	MMC, Chennai	Kuma hospital, Japan	Odense University Hospital, Denmark
Study type	Quasi experimental study	RCT	RCT
Sample size	n =72	n=409	n=89
Groups	2 groups	2 groups	2 groups
Factors assessed	Neck pain, Neck discomfort, Flap edema	Neck pain, Wound healing, scar	Neck discomfort, Pressure symptoms, Voice, QoL
Follow up	Minimum 2 months	6 months	3 months
Results	Symptoms-Significantly low in intervention group(1st post op month)except flap edema	Symptoms-Significantly low in exercise group(6 months) No difference in healing/scar	No significant difference in the symptoms

CONCLUSION

- This study confirms that post operative neck exercise and wound massage helps in reducing the neck pain and discomfort in the first post operative month.
- Planned and regular neck stretching exercises started immediately after a thyroidectomy significantly reduce short-term neck pain and disability symptoms.

REFERENCES

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