

Comparison between Total Thyroidectomy and Sub-Total Thyroidectomy in Terms of Post-Operative Asymptomatic Hypocalcaemia

ZULFIQAR ALI SHAHID, ARIFA AKHTAR*, WASIM SAFDAR**

ABSTRACT

Aim: To compare the post-operative asymptomatic hypocalcaemia in patients with multinodular goiter undergoing total versus subtotal thyroidectomy.

Methodology: This randomized controlled trial consisted of 200 patients. Patients who underwent total or subtotal thyroidectomy either male or female and having age from 18 to 50 years presenting at department of Surgery, Nishtar Hospital, Multan from December 2014 to June 2015 were enrolled.

Results: Asymptomatic hypocalcaemia was found in 38(38%) patients of group A and in 16 (16%) patients of group B. Statistically Significant ($P < 0.001$) difference between the frequency of asymptomatic hypocalcaemia was seen in patients underwent total or sub-total thyroidectomy. Significant difference for asymptomatic hypocalcaemia between the male and female patients of both groups was detected.

Conclusion: Frequency of asymptomatic hypocalcaemia was significantly higher after total thyroidectomy as compared to sub-total thyroidectomy. Male or female can be equally affected by asymptomatic hypocalcaemia after total or subtotal thyroidectomy. There is an equal chance of development of asymptomatic hypocalcaemia in younger and older age groups after total or subtotal thyroidectomy.

Keywords: Thyrotoxicosis, subtotal thyroidectomy, total thyroidectomy

INTRODUCTION

In thyroidectomy, frequent complication is post-operative hypocalcaemia which occurs in about 0.33% to 65% patients¹. Hypocalcaemia is evident in both total and subtotal thyroidectomy. In the literature, the incidence of temporary hypocalcaemia after thyroid surgery ranges from 1.6% to 50%, and permanent hypocalcaemia occurs in 1.5% to 4% of surgeries². Early detection of low calcium level even at asymptomatic stage may reduce unnecessary stay. The symptoms of hypocalcaemia become evident when serum level drops below 8 mg/dl (normal range 8.5-10.5 mg/dl)³. Immediate fall in serum calcium level after surgery is a sensitive predictor for later clinically symptomatic hypocalcaemia⁴.

METHODOLOGY

200 patients were selected. Patients who underwent total or subtotal thyroidectomy either male or female and having age from 18 to 50 years presenting at Department of Surgery, Nishtar Hospital Multan from December 2014 to June 2015 were enrolled in this

study. Patients who have hypocalcaemia due to renal disease, lactating mother either pre or post operatively and symptomatic post-operative hypocalcaemia following total or subtotal thyroidectomy were excluded from the study. In group A, total thyroidectomy was performed and in group B, sub-total thyroidectomy was performed. Serum calcium level $< 2 \text{ mmol/l}$ (8mg/dl) not showing clinical signs and symptoms of hypocalcaemia after 24 hours of surgery were labelled as asymptomatic hypocalcaemia. After 24 hours of thyroidectomy (total or sub-total thyroidectomy), 5ml blood sample was taken for serum calcium.

RESULTS

The detail of results is given in tables 1, 2 and 3

Table 1: Asymptomatic Hypocalcaemia between groups A&B

Groups	Asymptomatic Hypocalcaemia	
	Yes	No
A (Total thyroidectomy)	38(38%)	62(62%)
B (Sub-total thyroidectomy)	16(16%)	84(84%)

P value 0.001

*Assoc Prof. Anatomy, Multan Medical & Dental College, Multan.

**Chief Consultant, DHQ Teaching Hospital, Sahiwal

Correspondence to: Dr. Zulfiqar Ali Shahid, Assistant Professor Surgery, Nishtar Medical College/Hospital Multan.
drzulfiqarali56@gmail.com

Table 2: Asymptomatic hypocalcaemia for males and females

Groups	Asymptomatic Hypocalcaemia		Total I	P. Value
	Yes	No		
Male patients of both groups				
A	15(46.88%)	17(53.13%)	32	0.006
B	5(14.29%)	30(85.71%)	35	
Female patients of both groups				
A	23(33.82%)	45(66.18%)	68	0.029
B	11(16.92%)	54(83.08%)	65	

Table 3: Asymptomatic hypocalcaemia for different ages

Group	Asymptomatic Hypocalcaemia		Total	P. Value
	Yes	No		
Age (18-32 yrs)				
A	23(38.33%)	37(61.67%)	60	0.044
B	12(20.7%)	46(79.3%)	58	
Age (33-50 yrs)				
A	14(35%)	26(65%)	40	0.039
B	6(14.29%)	36(85.71%)	42	

DISCUSSION

In our study, frequency of asymptomatic hypocalcaemia was significantly higher in patients undergoing total thyroidectomy as compare to patients undergoing sub-total thyroidectomy (38% vs 16%). In one study by Islam et al⁵, the incidence of asymptomatic hypocalcaemia was 88%. Results of this study are in contrast with our results. Iqbal J et al⁶ reported asymptomatic hypocalcaemia in 18.8% patient in his study after total thyroidectomy. In another study by Vikas M et al⁷ asymptomatic hypocalcaemia was found in 24.14% patients. All the patients underwent total thyroidectomy. Findings of this study are comparable with our study. In one study of Erbil et al⁸, total thyroidectomy was performed in 130 patients with multinodular goiter and asymptomatic hypocalcaemia was found in 31.2% patients.

CONCLUSION

Frequency of asymptomatic hypocalcaemia was significantly higher after total thyroidectomy as compared to sub-total thyroidectomy. Male or female can be equally victim of asymptomatic hypocalcaemia after total or subtotal thyroidectomy. There is an equal chance of development of asymptomatic hypocalcaemia in younger and older age groups after total or subtotal thyroidectomy.

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