Bleeding after tonsillectomy was associated to hypertension and dissection with diathermy, but not surgical experience

Karl Knoph[1,2], Max Eriksson[1,2] and Lovisa Farnebo[1,2]
1. Department of Otorhinolaryngology-Head and Neck Surgery, Linköping University Hospital, Sweden
2. Department of Biomedical and Clinical Sciences, Linköping University, Sweden

Objective

The objective was to analyze risk factors for postoperative bleeding after tonsillectomy (TE), and differences in bleeding frequency between 2017 and 2018, at the Department of Otorhinolaryngology – Head and Neck Surgery, region of Östergötland, Sweden

Methods

The study was designed as a retrospective cohort study, including all 402 consecutive cases of TE in the region of Östergötland, Sweden 2017-2018. Patients were followed for at least 30 days after surgery. Demographics, comorbidity, surgical experience, potential risk factors and postoperative complications were registered. The primary endpoint was postoperative bleeding.

Results

- 24/402 (6%) of patients had postoperative bleeding (Table 2).
- Hypertension and bipolar diathermy were independent risk factors for postoperative bleeding (Table 1).
- Surgical indication or surgical experience were not correlated to bleeding frequency (Table 3)
- 23 patients (5.7%) required readmissions, resulting in 27 extra days in hospital in total.
- In 2017, 9.6% suffered postoperative bleeding. In 2018, 3.1% did. There were more hypertensive patients in 2017.

Conclusion

Hypertension and dissection with bipolar diathermy are independent risk factors for postoperative bleeding following tonsillectomy, but surgical experience is not.

Table 1.

	Odds ratio (95% CI)	p
Hypertension	7.07 (2.39;20.91)	0.000
Dissection with diathermy	9.55 (1.32;68.92)	0.025

Multivariate analysis of risk factors for postoperative bleeding. The significant factors in a multivariate logistic regression analysis with backwards stepwise regression. The following factors were included: Hypertension, Dissection with diathermy, Smoking.

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Table 2.

	Reference group n=378	Post-op bleeding n=24	p
Baseline characteristics			
Age	23 (15;40)	26.5 (19;52)	.068
Age ≥ 18 years	255 (67.5%)	22 (91.7%)	.013
Female	201 (53.2%)	9 (37.5%)	.136
Coagulopathy	1 (0.3%)	1 (4.2%)	.116
Hypertension	16 (4.2%)	6 (25.0%)	**.001**
Diabetes	8 (2.1%)	1 (4.2%)	.429
ADHD	5 (1.3%)	1 (4.2%)	.311
Smoking	31 (8.2%)	5 (20.8%)	.056
Overweight (all)	171 (45.2%)	15 (62.5%)	.124
Oral anticoagulants	12 (3.2%)	2 (8.3%)	.201
Postoperative infection	13 (3.4%)	3 (12.5%)	.057
Surgical method			
Cold steel	353 (93.4%)	22 (91.7%)	.670
Coblation w RF	12 (3.2%)	0 (0.0%)	1.000
Dissection with diathermy	3 (0.8%)	2 (8.3%)	**.031**
Method of hemostasis			
Compression	310 (82.0%)	20 (83.3%)	.767
Bipolar diathermy	334 (88.4%)	24 (100%)	.241
Ligature	23 (6.1%)	5 (20.8%)	**.022**
Local anesthetic w adrenaline	284 (75.1%)	16 (66.7%)	.443
Tranexamic acid	27 (7.1%)	3 (12.5%)	.155
Miscellaneous			
TE à chaud	43 (11.4%)	2 (8.3%)	1.000
University hospital	111 (29.4%)	8 (33.3%)	.680
Operating time only TE	36 (28;46)	34 (31;50)	.932

Univariate analysis comparing patients with and without postoperative bleeding. Age presented as the median (lower and upper quartile). Other variables presented as numbers (percentages).

Table 3.

Surgeon	Reference group, n=378, (%)	Bleeding, n=24, (%)	p (2x2 Chi-2)	p (3x2 Chi-2)
Junior resident	94 (93.1%)	7 (6.9%)	0.638	0.315
Senior resident	100 (97.1%)	3 (2.9%)	0.129	
Specialist/ consultant	184 (92.9%)	14 (7.1%)	0.359	

Univariate analysis comparing patients with and without postoperative bleeding

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