

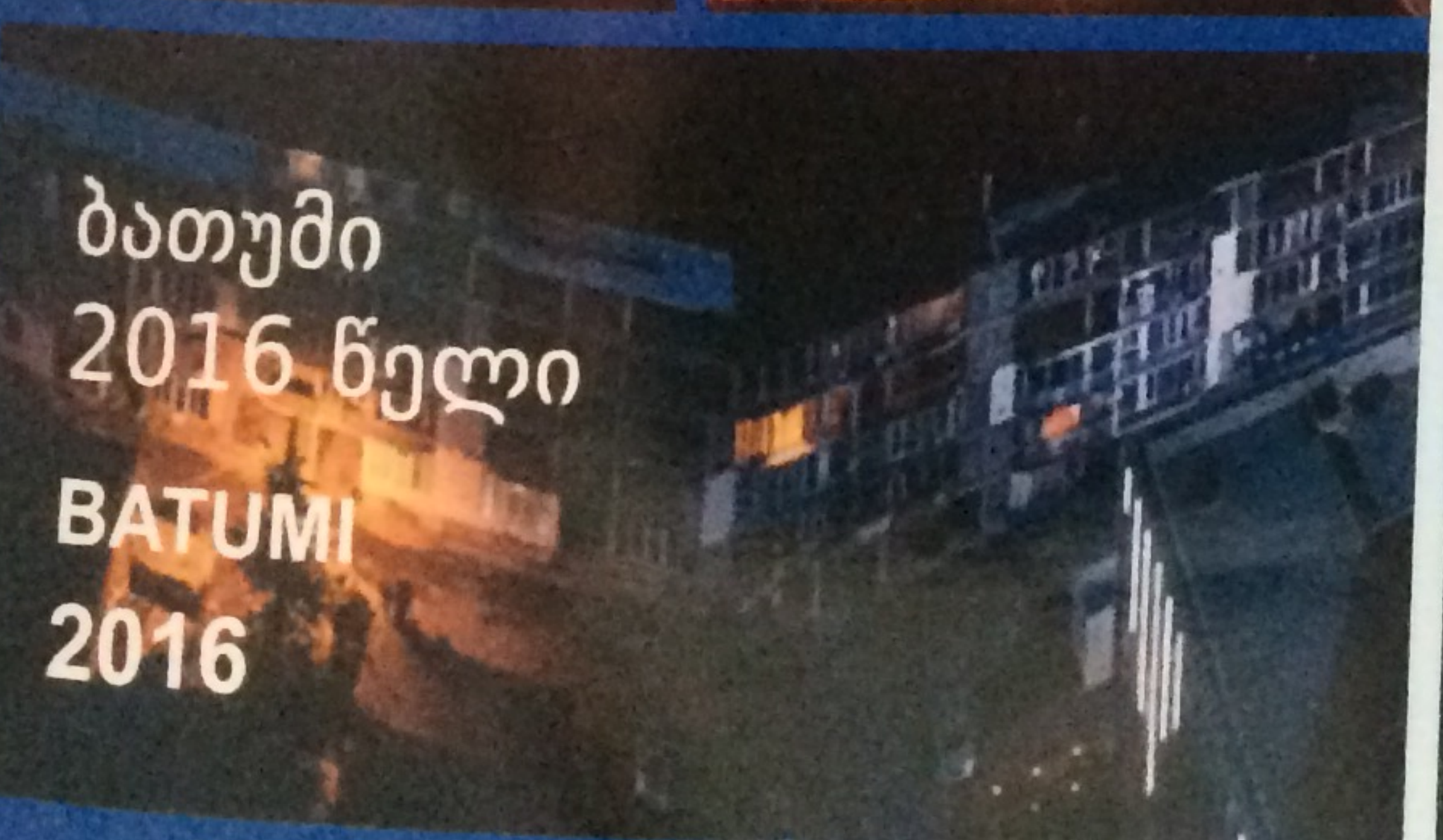
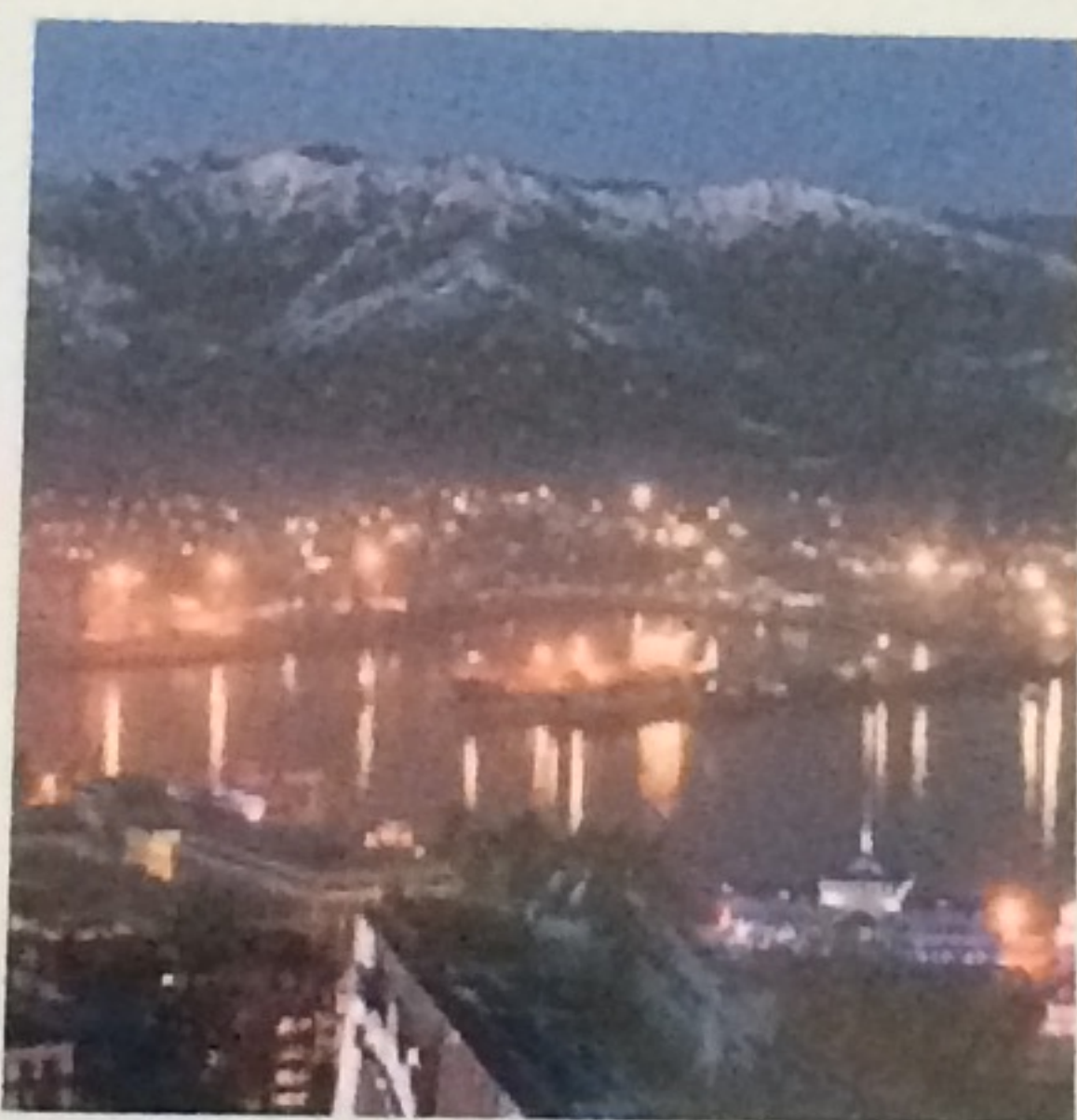
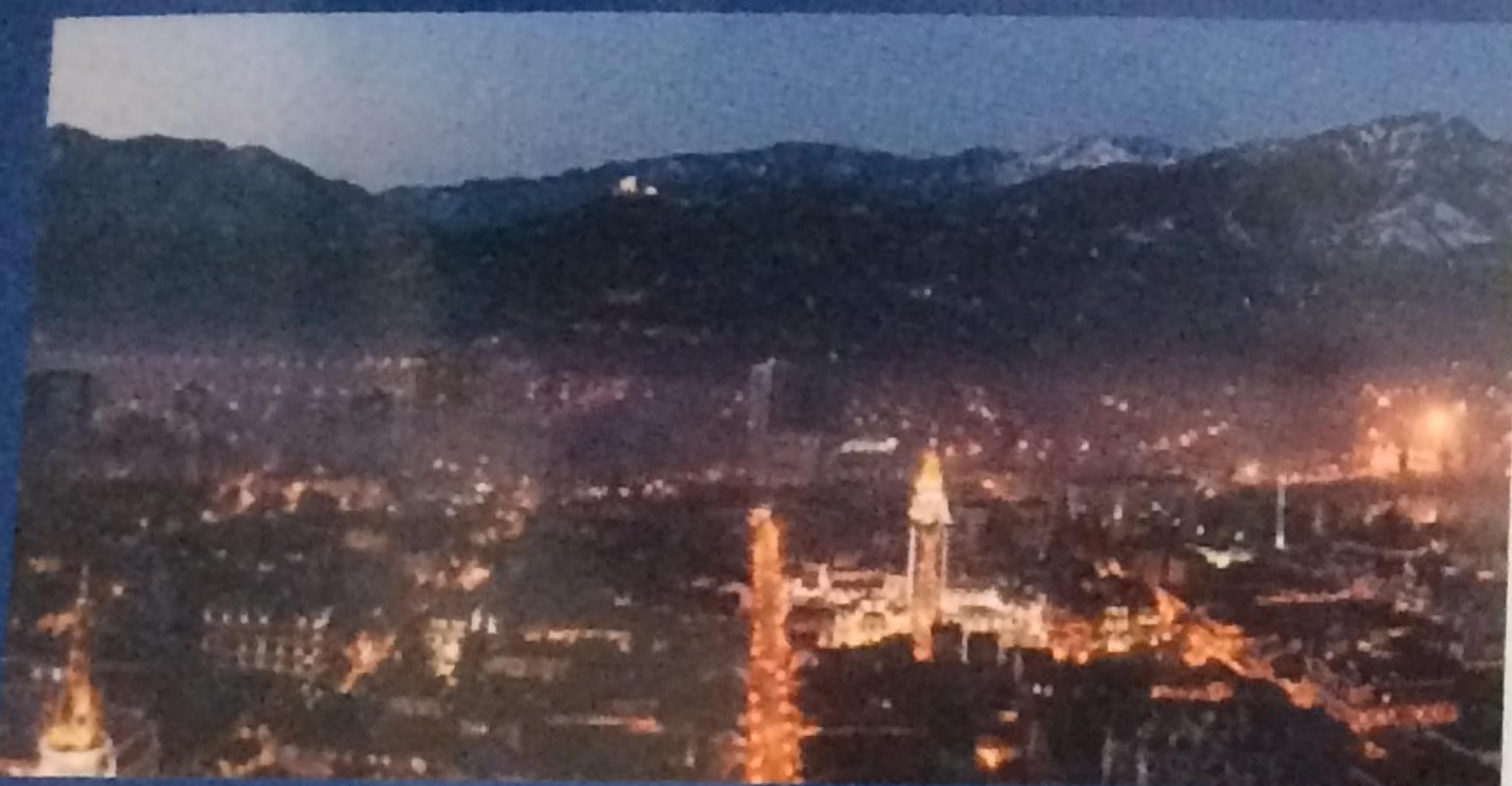


# საქართველოს რესპირატორული ჟურნალი

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# Surgical interventions on lymphadenoid pharyngeal ring in children using electric thermal adhesion

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**Aim.** Improvement of the efficiency of treatment of chronic tonsillitis, hypertrophy of palatine tonsils, adenoids.

**Methods.** There are suggested methods of tonsillectomy, tonsillotomy, tonsilloplasty, adenotomy with the use of bipolar electric tools of domestic construction. In case of tonsilloplasty there was removed hypertrophied part of tonsil and wound edges were apposed with the help of 3-4 nodular vicryl sutures, which were stitched with sewing of capsule of the tonsil. It kept intact the part of lacunae of tonsil and its function. 69 patients with diseases of lymphadenoid pharyngeal ring aged 1-17 were under observation in clinic.

**Results.** The use of electric thermal adhesion in case of the suggested surgical interventions with the use of developed bipolar electric tools helped to reduce bleeding in case of adenotomy by 4.5 times, in case of tonsillectomy – by 5.3 times and to reduce the duration of adenotomy and tonsillectomy by more than 2 times, and tonsillotomy – by 1.6. Tonsilloplasty was accompanied by significantly lower intraoperative bleeding and the absence of bleeding in the postoperative period. Postoperative wound healing was characterized by primary intention in a shorter time compared to tonsillotomy.

**Conclusion.** The advantage of the suggested surgical interventions with using electric thermal adhesion is the improvement of their quality and reduction of the duration of surgery. Tonsilloplasty is accompanied by significantly lower intraoperative bleeding and the absence of bleeding in the postoperative period and postoperative wound healing is characterized by primary intention in a shorter time compared to tonsillotomy.

# Fractal mathematics as control methods to estimate efficacy of the adenoiditis treatment and determine indication to surgical treatment of adenoids

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As control estimation of the treatment efficacy patient with adenoiditis which were treated by SilAtro-5-90, as discussion about indication to surgical treatment of adenoids, which depend on stage of nasopharyngeal tonsil hypertrophy, can be verified by endovideoscopy. For mathematical identification relation between nasopharyngeal tonsill and choanae square or was proposed sequence of the geometrical and mathematical procedures. This sequence was enable to effort an opportunity to calculate relation contoured square free and occluded by nasopharyngeal tonsill parts of the choanae. 11 children with adenoiditis and 23 with nasopharyngeal tonsil hypertrophy were clinical and videoendoscopic investigated. Created avi-videofilm were converted into endoscopic jpeg-frames. Endoscopic pictures were contoured by system 3D modeling. Contoured free and occluded by nasopharyngeal tonsil parts of the choanae were taken with precision of 0,1 mm by methods of the fractal analysis with estimation of the Hausdorff dimensionality (Mannelquist A. et al., 1988; Van Put A. et al., 1994; Zahn W. et al., 1997, 1999).

Sequence of the mathematical and geometrical procedures which was created to enable to effort an opportunity calculate with precision of 0.1 mm efficacy of the treatment adenoiditis by SilAtro-5-90 and determine indication to surgical treatment of adenoids.