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ARCO-PALATO-UVULAR FLAP

New surgical technique that stabilizes uvulopalatinal segment in patients with loud snore

After numerous surgical operations on palate and uvula, with aim to avoid velofaringeal insufficiency and improve functional results of earlier techniques, arco-palato-uvular flap (APUF) is new technique that I have developed.

This kind of surgical intervention is improvement previously used uvulopalatinal flap. The method is less invasive and there is possibility for subsequent correction. Preliminary results of such surgical intervention have been reported at the symposium devoted to loud snore (Belgrade, 2004)



Dr. Vukoje exhibited his four results on innovative surgical anti-snore technique at The Seventeen International ORL Congress (Novi Sad, Vojvodina, October 2006)

At this meeting, the method was accepted as an exceptional innovation. This kind of surgical intervention, done in general anesthesia, is effective. Consolidation and stabilization of rear palate arch, free and lowered edge of soft palate and uvula, and, in the same time, enlarging of oropharyngeal air way represents the goal of such intervention.

Earlier, the method introduced by Dr. Vukoja was introduced on January 2000, and it was named the arco-palato-uvular flap (APUF – Dr. Vukoje). Final appearance of this intervention resembles to one by uvulopalatopharyngoplastics, except that uvula, palate arches and free palate edge are not excluded but incorporated in local region in shape of flap.

Indications for the arco-palato-uvular flap are:

- loud and abrupt snore, regardless of body position,
- resistance syndrome in upper air ways, and
- mild shape of OSA (RDI <15, SaO₂>90%).

Conditions for intervention:

- tonsillectomy performed earlier (in childhood),
- wide and loosed soft palate,
- anatomical characteristics of uvula are non-important,
- exposed, hypertrophy and rugged rear palate arches
predisposition to collapse during sleep,
- retropalatal obstruction (Type I according to Fujiti),
and
- normal body weight.



Local finding in the throat that represents optimal conditions for arco-palato-uvular flap application. Rear palate arches are wide, rugged and hypertrophed, palate thinned, downcast, uvula short, tonsils earlier excluded.

Reasons for arco-palato-uvular flap application

APUF is introduced to avoid complications that are consequences of earlier surgical techniques on velopharyngeal ring, to widen oropharyngeal airway, stabilize free edge of palate and arches and improve functional results.

Previously described anatomic-clinical surgical methods done at the uvulopalatal segment show that success rate of surgical therapy, up to now, has been achieved in less than 60 per

cent of cases, Also, during several years the success rapidly diminishes. Because of regional muscle stratum insufficiency, the stiffening method and palate sclerosation is, in such surgery, contraindicated. Insertion method of palatine implants could not be applied; it requires strict indications for application. First of all, hypertrophy of soft palate and short uvula, that in those cases did not exist.

Scratches that lifts velum and blocks its vibrations can be of help, but are unpleasant for use. Sprays that are used to stiffen palato-uvular complex and eliminate snore are not reliable, and their effectiveness is limited only to relatively short period. If tolerated by patients, CPAP attains excellent results, but its effect is symptomatic. When used, success is obvious, as soon as it is out of work, the snore returns to be the same problem as before the treatment.

Criteria for surgical treatment (Dr. Vukoje Metod):

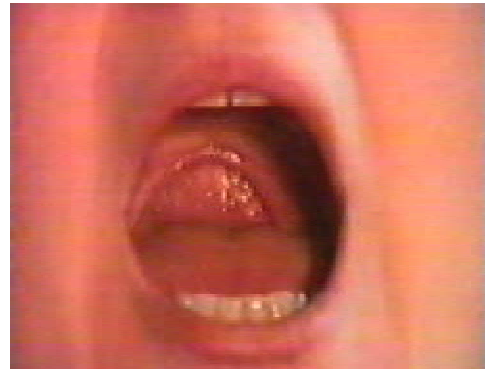
- age less than 70 years,
- RDI<15,SaO₂>90%,
- body weight index less than 32kg/m²,
- loud and abrupt snore, and
 - velopfaringeal obstruction.

INTERVENTION TECHNIQUE

- Mucous membrane of rear palate arches free edge, uvula and places planned for append
- Tissue of rear palate arches, long cca 0,5 cm is being cut by horizontal incision on one or two levels (above tongue basis and on traverse between palate and arches
- Uvula's length is reduces in width and thickness, and shaped according to the need that is requested by flap
- Arco-palato-uvular flap is being formed and bended lateral and towards hard palate, and fixed by stitch



Surgery done with the radio waves Ellman Surgitron 4.0 Dual



Arco-palato-uvular flap. Local findings in the faringeal space before intervention (left). Final look two months after operation (right) by Dr. Vukoje.

Clearly visible enforced and fatten free edge of palate and arches. Uvula is incorporated in the flap. Oropharyngeal air way is enlarged. Long term stable results and higher percentage of success are achieved comparing to other surgical interventions on that segment. Method does not need to compromise CPAP usage and maximum pressure that patient can tolerate. While what may frequently happen by the method of nasopharyngeal stenosis as one of the UPPP complication.

The difference in final outlook between UPPP and APUF surgical method that solves uvulo-palatinal segment's obstruction is visible. Free palate edge, by UPPP, with years to come, due to slow atrophy gets thinner and loosed, much inclines to the low frequency vibrations and collaps during the sleep. UPPP is much risky, post-operative process harder, apnea and ronchopathy recidives much more frequent. Advantage of UPPP is in wider indicative region than by the APUF. Both of interventions widen air way and both needs total anesthesia.

Comparing scope of work between UPP and APUF it can be said that UPP does not depend on anatomical structure of rear palate arches, it reduces free palate edge and uvula. However, if tonsillar arches are too emphatic, during sleep they can flicker by themselves and cause loud sleep. UPP does not need precious tonsilectomy. Arco-palato-uvular flap is effective method. To be applied, it requests strict indications and, if appreciated, success is the one to be expected.

Results recieved upon anamnestic and heteroanamnestic data, as well as upon Epfort's test and VAS (to years after operation), show that snore has been stopped in 73 per cent of cases and in 19 per cent narrowed to acceptable level.

Conclusions

- Method requests precise identification of occlusion spot and proper selection of patients
- Method represents ideal surgical option in palatinal snore treatment and mild shape of obstructive apnea
- Method has possibility to be repeated.
- Final results of appearance are the same as by the UPPP, therewith-free palate edge and arches are enforced. If VFI appear, possibility of revision always exists: flap is to be loosened and once more saturated on the proper level
- Complications are practically unknown

From above mentioned reasons, this new surgical procedure, should be verified, and become standard superior method for eradication of snore.



To acknowledgement for innovative surgical antisnore technique at the Eleven Moscow International Salon of Industrial Property"ARCHIMEDES" april 2008.