Subject: A new therapeutic approach to brachycephalic airway syndrome with videoscopically applied endonasal surgery is described. We base on the assumption that the most important reason for the development of the brachycephalic syndrome is an abnormal high intranasal airway resistance.

Methods: In 40 brachycephalic dogs (mainly Pugh, French and English bulldog) the nasal cavity was examined with rigid anterograde and retrograde endoscopy. CT-Scans were performed preoperatively to analyse endonasal obstruction and as basis for planning the surgical pathway.

Videoscopically a Diode Laser fibre was used to remove obstructing parts of the conchae thus creating a new ventral nasal meatus. Postoperative controls followed with fiberoptic endoscopy and CT-Scans including virtual CT-Endoscopy.

In the course of the study we started to measure intranasal resistance, separate for each nasal cavity, excluding the influence of both nares and palatum molle.

Results: We succeeded in reconstructing a patient ventral meatus nasi in all dogs. This was proved with analogue and virtual endoscopy. Control examinations showed, that in some cases recurrent obstructions resulted from re-expanding parts of the preoperatively compressed choncha nasalis ventralis.

Owners assessed a striking improvement in all those cases with no or little evidence of laryngeal collapse. Animals that had developed pronounced laryngeal deformations improved also, but in a lesser degree.

In many dogs abnormal conchal growth of the endoturbinate II into a caudal direction, obstructing one or both choanae, was observed.

Conclusions: If narrow and obstructed endonasal airways are the major underlying causes of brachycephalic dyspnoea, endonasal laser surgery seems to be the key for a new successful therapeutic approach to this disease.