Rhinitis represents the inflammation of the mucous membrane inside the nasal cavity. The main causes of the inflammation are viruses, bacteria or allergens. The treatment of this pathology has two stages. The first option is the conservative treatment followed by surgical treatment if the patient does not respond well to medication. In this paper, we will present coblation turbinate reduction method and its benefits.

Keywords: rhinitis, turbinate reduction, coblation

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Experimental part

Coblation decreases the molecular bonds of tissue through a non-heat process that leads to the decrease in volume of the tissue. The main advantage of this technology is that surrounding tissue is not heated because the plasma layer takes up most of the heat [8].

Coblation turbinate reduction is a minimally invasive procedure that uses bipolar energy to reduce the size of nasal turbinate. The components of the coblator system are the controller, to which the foot pedal and the wand cable connect. According to the type of wand connected to the controller, default settings for that wand appear on display. The coblation mode can increase from one to nine to adjust the surgeon’s needs. Three types of wands are available for coblation turbinate reduction: ReFlex Ultra PTR, ReFlex Ultra 45 and Turbinator. We used the Turbinator Wand. In contrast to the other two types of wands, the Turbinator generates a plasma field through a 2.9 mm shaft, placed at the tip of the wand. Also, on the reverse side of the tip, there are ports for suction and saline irrigation. On the device shaft, there are three depth markers that help the surgeon determine the depth of insertion [9, 10].

Before surgery, the setup of the device is important to avoid intraoperative problems. The saline line needs to be connected to the irrigation pump, the suction tubing to an active suction device and the cable to the controller. The wand has two settings; it can ablate but also coagulate. Before the surgery, patient preparation is necessary. Coblation can be performed under local or general anaesthesia. The turbinate tissue needs to be infiltrated with a mixture of lidocaine and adrenaline solution [11].

Afterwards, an incision in the anterior part of the inferior turbinate needs to be done, and with the use of a freer elevator, a mucosal pocket is made. The tip of the wand is inserted inside the incision, and then the wand is advanced into the mucosal tracking along the surface of the turbinate bone (fig. 1).

An important fact is that the wand should not be activated during insertion. Once the wand placed at the

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increases the surgeon’s comfort. The Turbinator W and is slowly retracted through the tissue until the distal depth marker is visible at the surface. After surgery, the recovery is very fast and nasal packing is not needed (fig. 2).

Postoperatively, patients may experience nasal congestion and drainage during the first seven days following the procedure [12-14].

In our clinic, we have used coblation successfully for turbinate reduction for a wide number of patients. This technology proved to be useful, safe and with good outcomes. In comparison with the classic approach performed with cold instruments, using coblation surgical time decreased due to less bleeding, there were no postoperative complications, the patient’s recovery was faster with less pain, no scars and less hospital stay.

Results and discussions
Chronic rhinitis is a very common health problem with symptoms that can affect the patient’s quality of life. Turbinectomy is a procedure that reduces the size of the turbinate and relieves nasal obstruction and congestion. Nowadays due to technological advances, new medical devices were created to improve the surgeon’s performance and the outcome of the surgery [15-16].

Coblation is a method that uses radiofrequency in a bipolar mode with a conductive solution and energises the ions to form a localised plasma. The effect results in a reduction of the tissue volume. This technology is not a heat-driven process, so it does not burn healthy tissue like other electro and LASER surgery technologies [17]. The radiofrequency does not pass directly through the tissue instead, the ions are generated, most of the heat being consumed in the surrounding tissue. Surgical time is short; it can be performed under both local and general anaesthesia depending on the surgeon and the patient’s preferences [18, 19].

Postoperatively there is minimal to none haemorrhage so nasal packing is not necessary. This leads to a bigger comfort for the patient and less hospital stay.

In the early postoperative period, patients accuse significantly less pain compared to the other surgical techniques. The benefits of the surgery are beginning to be perceived by the patients usually after one week when congestion starts to fade [20].

Coblation turbinate reduction is a minimally invasive, safe, reliable method with less pain for the patient, no downtime, no recovery period, better-wound healing, less scarring. This technology increases the comfort for both patients and surgeons. The fact that it can be done under local anaesthesis is very important for the patients with high risks associated that cannot undergo general anaesthesis.

Conclusions
Coblation turbinate reduction is a minimally invasive, safe, reliable method with less pain for the patient, no downtime, no recovery period, better-wound healing, less scarring. This technology increases the comfort for both patients and surgeons. The fact that it can be done under local anaesthesis is very important for the patients with high risks associated that cannot undergo general anaesthesis.

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Fig. 1. Chemical ablation of inferior turbinate with minimal thermal damage

The downside of the coblation technology are the high costs of the single-use wands and the fact that some patients may need to repeat the procedure, especially in patients with allergic rhinitis.