

## The Utility of Computed Tomography as a Screening tool for the Evaluation of the Effectiveness of Hydrogel Depot-Materials in Treating Suppurative Maxillary Sinusitis

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### Abstract

The article evaluates the effectiveness of intraoperative application of the hydrogel film «Coletex» (ε-aminocaproic acid and dioxidine) in treating suppurative maxillary sinusitis. A group of 54 patients with suppurative maxillary sinusitis underwent maxillary sinusotomy which involved placing a trephine opening in the frontal part of the maxillary sinus. In the course of the surgery the maxillary sinus was subjected to cleansing, drainage and the application of the hydrogel pellicle «Coletex» with dioxidine. To achieve homeostasis, prior to the schneiderian membrane closure, the trephine opening was coated with the hydrogel pellicle with ε-aminocaproic acid. As from the first day after it the patients underwent immediate postoperative physiotherapy. Computed tomography screening was performed throughout the initial evaluation of sinus-related pathologies, the pre-surgical planning and the follow-up control of the maxillary sinusitis treatment. The data obtained shows that CT was very instrumental in acquiring high resolution images of bone and soft-tissue structures, avoiding the summational effect. It also gives the precise descriptive evaluation of sinus-related pathologies.

**Key words:** Computed Tomography, Management of Suppurative Processes, Otorhinolaryngology, the Hydrogels «Coletex», Physiotherapy.

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### References

1. Gerasimenko M. Yu., Khrykova A. G., Oltarzhevskaya N. D., Skovorodko S. N. Laser phoresis with «Coletex» as part of comprehensive treatment of children with maxillary sinusitis. Moscow, 2009. 15 p. (in Russian).
2. Korytova L. I., Sokurenko V. P., Oltarzhevskaja N. D., Korovina M. A. The utility of hydrogel materials «Colegel» as supportive therapy for patients with oropharyngeal cancer. Palliative medicine and rehabilitation. 2010. N. 2. P. 51–55. (in Russian).
3. Pal'chun V. T. Otorhinolaryngology. National manual. Moscow, 2009. P. 308–309. (in Russian).
4. Pal'chun V. T., Luchihin L. A., Magomedov M. M., Zelikovich E. I. Evaluation of otorhinolaryngological patients. Moscow, 2009. 73 p. (in Russian).
5. Ponomorenko G. N., Ulashhik V. S. General physiotherapy. Saint-Petersburg, 2011. 288 p. (in Russian).

6. *Sipkin A. M.* Evaluation, treatment and rehabilitation of patients with complicated cases of maxillary sinusitis: the utility of minimally invasive surgery. Abstracts of MD dissertation. Moscow, 2013. 48 p. (in Russian).
  7. *Ternovoj S. K., Arablinskiy A. V., Arcybasheva M. V.* The utility of Computed Tomography and Magnetic Resonance Imaging in the evaluation of paranasal and maxillary sinus conditions. Radiology – practice. 2007. N. 4. P. 4–12. (in Russian).
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