

Radiation Therapy of Osteoarthritis Knee Joint. The Features of Topometry for Orthovoltage X-ray Therapy

M. V. Makarova¹, A. M. Shubin²

¹ Northern State Medical University, Arkhangelsk

² Arkhangelsk Regional Oncology Center

Abstract

Osteoarthritis is the most common disease among all rheumatic disease. Orthovoltage X-ray therapy (OXRT) is the alternative method of pain syndrome treatment for degenerative inflammatory joint diseases. The techniques of OXRT were developed in 1970 years. The study aims to offer a modern scientifically grounded methods of conducting pre-treatment CT topometry for OXRT of the knee joint in the treatment of gonarthrosis. From 2012 to 2015 topometry the pre-treatment carried out using specialized CT scanner in 102 patients. The article describes the methodology of the pre-treatment topometry. Using modern methods of diagnostics (MRI, ultrasound) there were able to determine the precise localization of the pathological process in the joint and calculate the optimal depth of dose delivery. So, the average value for tibiofemoral joint made up 5,7 (95 % CI: 5,0 to 6,5) cm, patellofemoral articulation in the medial along the passage of the joint space in the medial of 3,8 (95 % CI: 3,9 to 4,7) cm. These data differed from the accepted standards average depth of 3 cm. Irradiation of the knee joint must oriented to the individual dose estimation for reducing the impact on the surrounding unaffected tissue.

Key words: Orthovoltage X-ray therapy, Magnetic Resonance Imaging, Topometry.

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Authors

Makarova Mariya Vasil'evna, Ph. D. Med., Assistant of Department of Radiation Diagnosis, Radiation Therapy and Oncology, Northern State Medical University.
Address: 51, pr. Troitsky, 163000, Arkhangelsk, Russia.
Phone number: +7 (911) 557-46-49. E-mail: mtim10@gmail.com

Shubin Andrej Mikhailovich, Radiologist, Arkhangelsk Regional Oncology Center.
Address: 145-1, pr. Obvodnyj kanal, 163045, Arkhangelsk, Russia.
Phone number: +7 (921) 720-69-88. E-mail: ximatron@rambler.com