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EXPERIMENTAL SUBSTANTIATION OF THE METHOD OF IDENTIFICATION INTRAOSSEOUS DENTAL IMPLANTS BY RADIOGRAPHIC SIGNS

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Background: At the present stage of development of the forensic medical examination and dental identification system has a number of unresolved problems. One of these is the identity through identification implantology systems, which are used in the treatment of tooth defects series. According to V.O. Malanchuk (2006), with more than 300 existing in the world dental implantation systems now in Ukraine are represented 20, and more than 10 are in the registration process. Among them registered three implant systems of Ukrainian production (Los V.V. 1994; Prytula O.M. Uhryn M.M., 1999; Moseyko O.O. 2001), but adjusted production and widespread have system of "U-impl" and "Vitaplant".

The aim of our work is the creation of a universal algorithm to identify intraosseous dental implants by radiographic signs of the method of "contrast Trace Contour dental procedures."

Materials and methods: The study was conducted at the University Dental Clinic of UzhNU for two years and continuing now. The experimental group consisted of 198 patients aged from 32 to 63 years who underwent implant treatment, of whom 102 (51.5%) patients was women and 96 (48.5%) men. We received 594 digital X-ray images (Panoramic x-rays), three each patient (one at the planning stage of treatment, the second immediately after installing the implant and the third later osseointegration and install non-removable prosthetic restoration) identified 346 intraosseous dental implants: 205 (59.2%) units were in the mandible and 141 (40.8%) on the upper jaw and by the criterion of placement in the dental formula: in the lateral section was located 211 units (60.9%), and in front - 135 units (39.1%). We proposed an algorithm is as follows - using, for the classification of intraosseous dental implants according to their structural features in the X-ray (Kostenko Ye.Ya, Beley O.L. 2012), and X-ray data, we gradually define structural elements that equip the implant only for a limited number of systems.

Results and discussion: Following the gradual of identification with using digital Panoramic x-rays and the program "identity iatrogenic interventions" were identified: 162 units of implants, which probably belong to the AB Dental Devices, Blu Sky Bio, ADIN Dental Implants System and Alpha Bio Tec. implantology systems. Conventionally labelled as C1. Of those amounts were identified: 49

units (30.2%) - 3.75x10 mm, 36 units (22.2%) - 4.2x10 mm, 31 units (19.1%) - 4.2x8 mm, 29 units (17.9%) - 3.75x8 mm and 17 units (10.5%) - 3.3x8 mm. 95 units of implants that are probably belong to k3pro konus dental implants, Southern implant and IDI System implantology systems. Conventionally labelled C2. Of those amounts were identified: 31 units (32.6%) - 4.0x9 mm, 26 units (27.4%) - 4.0x7.5 mm, 23 units (24.2%) - 4.5x7.5 mm and 15 units (15.8%) - 3.0x9 mm. And on the criterion placement in dental arch 53 units (55.8%) were in the lateral area and 42 units (44.2%) in the front. 89 units of implants that are probably belong to Astra Tech AB, ARDS implants, Champions Implants GmbH and Ossetem Implant Co, Ltd. (Hiossen) implantology systems. Conventionally labelled C3. Of those amounts identified: 45 units (50.6%) - 3.75x10 mm, 24 units (27%) - 3.75x8 mm and 20 units (22.4%) - 4.2x8 mm. The data obtained we compared with records of operational log between 5.10. 2010 to 10.12 2012 According to the records for this period was found: 163 units of implants system Alpha Bio Tec., 95 units of k3pro konus dental implants, and 88 units of ARDS implants.

Conclusions: *According to the data, the proposed method showed a high degree of efficiency. With proper design and implemented it in a system forensics, methods greatly facilitate the identification of affected individuals. Whereas identification of the dental status of individuals post mortem without anamnestic data and the available medical documentation is quite complicated. This technique, will enable professionals to forensic and judicial odontologist determine probable implant system, narrow the search for missing persons by providing forensic investigative authorities information of medical and biological character and rationalize expenditure of time for personal identification.*

KEYWORDS: Forensic Odontology, Dental radiology, Implantology.