

The Clinic of Nuclear Medicine Prague Motol introduces itself

Petr Vlček

Clinic of Nuclear Medicine, 2nd Medical School, Charles University
 Prague, Czech Republic

History of the Clinic

The Department of Nuclear Medicine of the Motol City Hospital was founded by professor Karel Šilink in 1959 as part of the Institute of Endocrinology. The department, with 20 beds, was designed for diagnosis and ¹³¹I therapy of thyrotoxicosis and thyroid cancer. In 1965 professor Jaň Nemeč became the head of the department and the department was equipped with new scintigraphs by Siemens and Picker, which improved the diagnostic possibilities. The therapy was oriented to differentiated follicular and papillary thyroid cancer (these topics are the leading ones until today). The department covered the whole Czech Republic and a part of the Slovak Republic. In 1985 the city hospital be-

came the Faculty hospital of the 2nd Medical Faculty, Charles University, and the department of nuclear diagnostics joining together with the therapeutic part of the Endocrinological Institute built, the Clinic of Nuclear Medicine. In 1998 the Clinic moved to the new faculty building (Fig. 1) and the equipment was modernised, which meant the Clinic reached nation-wide status and acceptance.

The Clinic today

In 1999 dr Petr Vlček (Fig. 2) became the head of the Clinic and under his leadership the Clinic continues its diagnostic, therapeutic, scientific and pedagogic work. Since 2001 the Clinic has housed the Centre for thyroid oncology and endocrine orbitopathy of the 2nd Faculty of Medicine, Charles University, which covers the whole Czech Republic. All the equipment and procedures fulfill the conditions given by the International Atomic Energy Agency (IAEA) and by the State Office of Nuclear Safety of the Czech Republic. The Clinic has about 60 employees (14 of them medical doctors, 3 physicists, 2 radiochemists).

Therapy

The therapeutic part of the Clinic is oriented to differentiated follicular and papillary thyroid cancer. The database of the Clinic contains over 6,500 patients, and 900 patients per year are treated (more than 90% of them with thyroid cancer). The first therapies with ¹³¹I MIBG of medullary thyroid cancer were carried out in 1994, of neuroblastoma in 1997, in co-operation with the Clinic of Children's Oncology, and of carcinoid (1999) and malignant pheochromocytoma in 2001. The department is equipped with audio-visual monitoring, which enables to be in permanent but indirect contact with the patients treated with ¹³¹I.

Because the department has had a continuous tradition of ¹³¹I treatment for almost 50 years, there is a lot of data for research. In co-operation with medical physicists and radiation protection officers much research on the biokinetics of ¹³¹I has been carried out in order to optimise the dosage [1–3].



Figure 2. Petr Vlček, the Head of Clinic.



Figure 1. Clinic of Nuclear Medicine, 2nd Medical School, Charles University Prague in new teaching hospital, Prague Motol.

Correspondence to: Petr Vlček
 Clinic of Nuclear Medicine, 2nd Medical School
 Charles University Prague 2 FF, UK a FN Motol,
 V. Uvalu 84 15006 Praha 5, Czech Republic
 Tel: (+420 2) 2443 4601 Fax: (+420 2) 2443 4620
 e-mail: petr.vlcek@fnmotol.cz; petr.vlcek@lf2.cuni.cz

Diagnosics

The diagnostic department of the Clinic is equipped with 3 Sopha SPECT cameras and 1 planar camera. One of the SPECT cameras is located in the therapeutic part and serves only for ^{131}I investigations. The department plays an important role in the diagnostic complement of the hospital and there is tight co-operation with the departments of neurology, cardiology, oncology, etc. The group also takes part in clinical studies (DatScan at present) [4, 5]. About 6,000 patients are investigated per year.

The department is a reference place for Sopha in the Czech Republic, which means that the members of the department are teachers of the Sopha acquisition and processing software and users from other departments are coming for excursions. In co-operation with G&G Medical the camera consoles network was connected to a PC with Interview. This connection enables export of studies in Interfile data format to the PC for processing and archiving and saves the machine time of the consoles.

Research and teaching

Research plays an important role at the Clinic. Next to the already mentioned activities, there is strong co-operation in projects for optimisation of complex treatment in children's oncology or predictive molecular diagnostics of families with medullary thyroid cancer. In co-operation with the Institute of Information Theory and Automation of the Czech Academy of Sciences the mathematical methods for ^{131}I therapy optimisation are being developed and together with the Computer Graphics Group at the Faculty of Mathematics and Physics visualisation software for SPECT and planar studies is being developed [6, 7]. In the field of radiation protection, the Czech regulations are co-developed with the State Office for Nuclear Safety and a Radiation Protection and a Safety Centre is being established as a project of the IAEA.

As a part of the Faculty Hospital, the Clinic ensures lectures in the topics of nuclear medicine and endocrinology for medical stu-

dents, postgraduate students and in continuing medical education. The Clinic also accepts foreign guests and participates in the IAEA education programme.

Co-operation

The Clinic consists of two main parts, therapy and diagnosis, and also a physicist group. Diversity on the one hand, and perfect co-operation inside the Clinic and outside towards other departments and hospitals on the other hand, creates the conditions for multidisciplinary research and education. Active participation in and many contributions at national and international conferences are the proof of this. The openness for co-operation with other institutions [8] and departments and the high standard of the department help to fulfil the vision: to be and to be perceived as the leading department in the field of nuclear imaging methods and therapy.

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