

Presentation by President

PRESENT AND FUTURE OF IMAGE PROCESSING COMPUTER SYSTEM IN NUCLEAR MEDICINE. H.Akagi. Department of Radiology, Osaka Medical College. Takatsukishi, Osaka, Japan.

The history and evaluation of image processing computer system in the field of nuclear medicine were reported in this presentation, mainly on the basis of enquête survey to users which was performed by Committee of Standardization of Image Processing Computer System, (chairman Prof. Hiroaki Akagi), in Japanese Society of Nuclear Medicine(JSNM).

After the results of enquête survey, an experimental system, which would be expected in next generation, was discussed and demonstrated.

1. History of the system

According to the reports by makers, sales of image processing computer system started at 1968, and now in 1983, total number installed in Japan, came up to 571, where there were only 114 in 1977, and three quarters of the market share in Japan were by 3 Japanese makers, such as, Shimadzu, Toshiba and Hitachi.

2. Results of enquête survey

The enquête survey by Committee of Standardization on Image Processing Computer System in JSNM showed strong demands for the improvement of conventional system as well as the standardization for the compatibility among the systems of each makers. The institutes satisfied with current systems were not more than 20 out of 168(11.9 %), and request to standardization was in

119(70.8%).

1) Additional results

The use of current systems in daily examinations was carried out by radiological technicians(71.1%), both in static and dynamic images.

Target organs were mainly heart (4.79 hours a week) and liver (3.81 hr/wk), and the data storage was by MT and hardcopies were mainly on black and white X-ray film or colour Polaroid.

System faults were reported as 3 times of 15 hours a year on average, which devices were mainly magnetic disks and MT.

2) Future system

Future systems expected in the enquête were computers with 32 bits CPU, optical disks for mass memory, automatic multi-film imager, input of Japanese characters and by voice, and report-writing in Japanese. And data exchange between the system and host of hospital computer should be on consideration.

3. Experimental system

Upon the wishes an experimental system was designed and arranged in our laboratory using Eclipse MV/6000, in co-operation with Shimadzu and Nippon Data General. Some results were demonstrated but it was still on progress of the software, and inter-connection with the hospital computer system was under planning step.

4. Summary

Nuclear Medicine had much shorter history compared to that of ordinary roentgenology, but the application of image processing method was earlier, especially

in the field of usage of computer system. But there occurred some problems in compatibility of the system caused by rapid development of computers.

In this presentation, some suggestion would be found for future computer system in data processing in Nuclear Medicine.