

Digital R/F

Experience of Using FLEXAVISION X-Ray TV System in Medical Examinations



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1. Introduction

Our clinic (Fig. 1) is an occupational health preventative examination center that was established in June 1990 in Horie, which is located in the Nishi ward of Osaka City, as a corporate medical examination department of the Jurakukai Medical Corporation Group, which is centered on Ohno Memorial Hospital. In accordance with article 43 of Japan's Ordinance on Industrial Safety and Health and other applicable regulations, we conduct periodic medical examinations and medical examinations focusing on lifestyle diseases for corporations. The letters "m.o." stand for the Spanish words "medico" (medicine) and "ocupacion" (occupation). The function of our clinic is to perform various medical examinations geared towards the workplace, protect the health of working people, and to improve health maintenance.

The periodic medical examinations conducted by corporations can be classified in terms of systems in the following way:

- (1) Examinations that employers are legally compelled to carry out (statutory medical examinations)
- (2) Examinations that the Ministry of Health, Labour and Welfare advises or encourages employers to carry out (medical examinations based on administrative guidance)
- (3) Examinations carried out at the discretion of corporations (medical examinations based on internal corporate systems)

At our clinic, we perform medical examinations in accordance with the above systems on a total of approximately 80,000 people every year.

Regarding medical examinations focusing on lifestyle diseases, influenced by westernization of the living environment, the average Japanese diet

has become a little unbalanced in recent years, incorporating a greater amount of meat, and alongside stomach X-ray examinations, we conduct various examinations targeted at the diagnosis of "metabolic syndrome", a condition that we hear about so often these days. At our clinic, we conduct approximately 32,000 stomach examinations every year.



Fig. 1

2. Reasons for Introduction and Features

At our clinic, we used to use film-type X-ray TV systems. However, because of the frequent occurrence of problems such as film jamming and equipment errors, we decided to purchase a new X-ray TV system and, as a result of comparing and considering different manufacturers' products, we decided to introduce FLEXAVISION (Fig. 2) for the reasons given below.

- (1) It has an extremely compact design. (Bulky equipment is unsuitable for restricted spaces.)
- (2) The system hard disk has a large capacity.
- (3) Images are clear.
- (4) The operation console is small and input operations are simple (Fig. 3).

The compact design of the R/F table and operation console makes it possible to install FLEXAVISION in relatively small spaces. The bedside controller, which enables rapid positioning, and the simple, easy-to-use examination console, which incorporates all operations into a single unit, ensure that examinations can be conducted smoothly. We judged that the hard disk has a sufficient capacity to facilitate examination work without any problems, and that, as a whole, FLEXAVISION has all the functions required to ensure that examination work is conducted smoothly. By introducing this system, we have been able to realize the full digitization of stomach X-ray examinations. Table 1 shows our clinic's system specifications.



Fig. 2



Fig. 3

	FLEXAVISION FD Package
X-Ray Generator	50 kW
X-Ray Tube	400 kHU
Image Intensifier	12-inch dual (12/9)
TV Camera	1-megapixel CCD
Monitor	17-inch LCD
Hard Disk Capacity	80 GB/15,000 frames

Table 1

3. Data Handling

Fig. 4 shows the overall flow of the image data obtained in stomach fluoroscopy and radiography at our clinic.

Although between 3 and 4 months' worth of image data obtained with FLEXAVISION can be stored in the digital system's hard disk (HD), we send data to a DICOM viewer system (SimRAD ViewForce) online every day. At our clinic, in addition to FLEXAVISION, we operate SHIMAVISION MXi for outpatient examinations and the bus-mounted AO-30 for on-site examinations conducted with the mobile medical unit. (They are both Shimadzu products). SHIMAVISION MXi image data and AO-30 image data are read to the DICOM viewer online and offline (CD-R) respectively. We store approximately 3 months' worth of data in the DICOM viewer's HD and every day we back up the data, separated into outpatient examination data and on-site examination data, to DVD-RAMs.

The digitization of outpatient and on-site examinations has made it possible to store several years' worth of DVDs in a small space, and data management is much easier than it was with film. Regarding the lending of film, the required data can be printed out onto film with the DICOM viewer, and so the effort involved in searching for films by storage location and handling returned films has been greatly reduced.

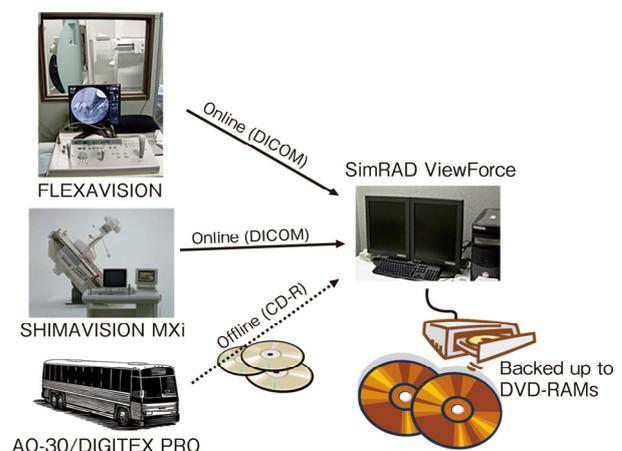


Fig. 4

4. Summary

In this article, I have described our experience of using FLEXAVISION in the medical examination work performed at our clinic, focusing in particular on the handling of data. The introduction of FLEXAVISION has enabled the full digitization of stomach X-ray examinations, and has greatly increased the efficiency with which outpatient examinations are conducted. In the future, we will continue to use FLEXAVISION to ensure faster and more comfortable examinations and to increase work efficiency.