

คำสำคัญ (Key words)

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- คำที่บ่งบอกเนื้อหาของงานวิจัย
- คำที่ช่วยในการสืบค้น
- เพื่อเข้าถึงงานวิจัยเรื่องนั้นๆ
- ต้องเป็นคำที่ปรากฏอยู่ในชื่อเรื่อง



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คำสั่งค้น ช่วยค้นหาแบบรูปภาพ

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CAT Scan CT - eMedicineHealth

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CT scan - Mayo Clinic

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A computerized tomography (CT) **scan** combines a series of X-ray images taken from different angles and uses computer processing to create cross-sectional images, or slices, of the bones, blood vessels and soft tissues inside your body.



ct scan radiation dose

ct scan radiation dose **equivalent**ct scan radiation dose **chart**ct scan radiation dose **calculator**ct scan radiation dose **msv**ct scan radiation dose **comparison**ct scan radiation dose **versus x ray**ct scan radiation dose **compared to chest x-ray**

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Patient Safety - Radiation Dose in X-Ray and CT Exams

www.radiologyinfo.org/en/safety/?pg=sfty_xray ▾

Patient safety information about **radiation dose** from X-ray examinations and **CT scans** (CAT scans)

What are the Radiation Risks from CT? - Food and Drug ...

www.fda.gov/Radiation.../RadiationEmittingProductsandProcedures/...Ra... ▾

Feb 10, 2015 - Because of the rapidly growing use of pediatric CT and the potential for increased **radiation exposure** to children undergoing these **scans**, ...

How Much Do CT Scans Increase the Risk of Cancer ...

www.scientificamerican.com > ... > The Science of Health ▾

Jun 18, 2013 - Researchers reevaluate the safety of **radiation** used in medical imaging. ... In fact, most estimates of the excess cancer **risk** from **CT scans** over ...

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Radiation Fact Sheet, April 2000 ... **risk** of cancer from **radiation** ... Calculate your **dose** and estimate cancer **risk** from studies including **CT scans**, x-rays, nuclear ...

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Chest x-ray (2 views) · Abdomen x-rays ... Extremity x-rays (Hands, Feet, etc) ... DEXA Scan (Bone Density) **Dose** is based on multiple views. **CT Scans**. Brain CT ...

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1. Baker MJ, Trevisan J, Bassan P, Bhargava R, Butler HJ, Dorling KM, et al. Using Fourier transform IR spectroscopy to analyze biological materials. Nat Protoc 2014 Aug;9(8):1771-91.

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Freeman	2008	The current and continuing important role of ventilation-perfusion scintigra...	Semin
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MRI and ^1H MRS evaluation for the serial bile duct changes in hamsters after infection with *Opisthorchis viverrini*

Petcharakorn Hanpanich ^{a,d}, Somchai Pinlaor ^{b,d}, Lakhanawan Charoensuk ^{b,d}, Puangrat Yongvanit ^{c,d}, Chunpen Thomas ^e, Suchart Kothan ^f, Eimorn Mairiang ^{a,d,*}

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ตัวอย่าง

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ABSTRACT

A 3 T MR scanner was used to investigate the relationship between the alteration of bile duct lesions and the hepatic metabolic changes in hamsters infected with *Opisthorchis viverrini* by using 3 T MRI and ^1H MR spectroscopy. Animals were divided into control and infected groups. Five normal hamsters were used as control; fifty-five hamsters were infected with *O. viverrini* to induce bile duct lesions and hepatic metabolic changes. T2-weighted image sequence in the orthogonal planes were conducted by MRI scans. Single-voxel ^1H MRS was performed to obtain the relative choline-to-lipid ratios. The livers and bile ducts were excised for the histologic examination. The progression of bile duct changes by histology and metabolic changes in *O. viverrini* infected hamsters were co-investigated. In the *O. viverrini*-infected group, the T2-weighted images revealed the time-dependent intra- and extra-hepatic duct dilatations in the liver. The mean (\pm SD) choline-to-lipid ratios were 0.11 ± 0.035 in the control group, whereas the ratio in the infected group increased significantly with the progression of time. Histologic grading of hepatic inflammation and fibrosis were correlated well with the MRI grading (Spearman rank correlation test; $r = 0.746$ and $p < 0.001$). The control group showed no dilatation of the bile ducts and showed normal liver patterns. Non-invasive technique, MRI and ^1H MRS can demonstrated and applied to evaluate not only the inflammation-related fibrosis in the small bile ducts but also the metabolic changes in the liver induced by *O. viverrini* infection. A significant increase in the choline-to-lipids ratios were observed in parallel with the time-course of infection. *O. viverrini* infected in human is detected by stool examination. Hepatobiliary morbidity is detected and followed up by ultrasonography. MRI and MRS can be used in conjunction with ultrasonography for evaluation of progression of the disease.



Survey of DLP (Dose-length product) from Computed Tomography Examination in Srinakarind Hospital

Wattana Wongsanon¹, Jiranthanin Phaorod¹, Petcharakorn Hanpanich^{1*}, Panatsada Awikunprasert²

Background and Objective: Computed tomography (CT) is an imaging procedure that uses a special x-ray equipment to create detailed pictures, or scans, of areas inside the body. Although CT is essentially useful in diagnosis, potential cancer risks exist from associated with ionizing radiation. The purpose of this study was to assess the radiation dose in the three most common examinations of diagnostic CT studies which were brain, chest and abdomen performed at Srinakarind hospital.

Method: This study was approved by the Human Ethics Committee of Khon Kaen University (HE571239). A retrospective cross-sectional study of radiation dose of 1,200 patients were collected between February to April 2014. The CTDI volume ($CTDI_{vol}$), dose length product (DLP), kV and mAs were recorded. The effective dose of each patient was calculated.

Results: These three study types were approximately 70% of the total CT examination. Radiation doses varied significantly between the different types of CT studies. The recorded mean and SD of DLP from head, chest and abdomen CT scans were 689.86 ± 246.57 , 440.97 ± 219.19 and 767.83 ± 253.46 . The calculated mean and SD of effective doses from head, chest and abdomen CT scan were 1.5 ± 0.9 , 7.5 ± 3.7 , and 11.5 ± 3.8 millisieverts (mSv).

Conclusion: Radiation dose from CT scans of the brain, chest, or abdomen were varied depending on an individual patient and the exposure technique. Both $CTDI_{vol}$ and DLP values were displayed after the scan simultaneously. While the effective dose of each organ is related to the amount of radiation received by the patient. Understanding exposures and radiation dose parameters from actual clinical studies is a crucial first step toward to develop reasonable strategies to minimize unnecessary radiation exposures.

Keyword: Computed tomography, dose length product (DLP), radiation dose

นำคำสำคัญ

มาร้อยเรียง

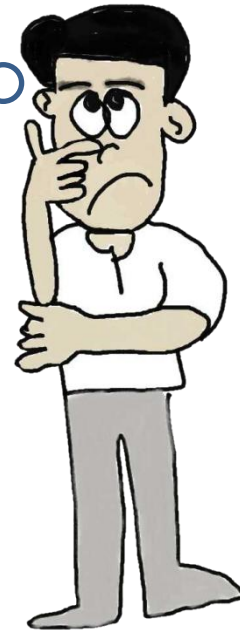
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CT Fluoroscopy-guided Interventional Procedures: Techniques and Radiation Dose to Radiologists

ทำไม?
คือ สำคัญ



CT Fluoroscopy-guided

Interventional Procedures:

Techniques and Radiation

Dose to Radiologists ← ?

Computed tomographic (CT) fluoroscopy is a technical advance resulting from slip-ring technology, x-ray tubes with improved heat capacity, high-speed array processors, and partial reconstruction algorithms (1,2). The images can be reconstructed at a rate of approximately 6 frames per second, allowing near real-time visualization similar to that of ultrasonography (US). A promise of this technology is to facilitate interventional procedure guidance by means of combining the localizing strengths of CT with the real-time advantages of US.

Findings of recent clinical studies (3–6) have shown that CT fluoroscopy is a safe and effective guidance tool for percutaneous interventional procedures in the chest, spine, abdomen, and pelvis. With this technology, procedures are performed more quickly than with traditional CT (7). CT fluoroscopy is particularly useful for procedures involving deep structures, such as retroperitoneal masses, or for procedures involving organs prone to physiologic motion, including the liver and lungs (3,6).

One of the concerns with the use of CT fluoroscopy is the high radiation exposure (4,5,8). In contrast with conventional fluoroscopy in which the patient dose is on the order of centigrays per minute of exposure, with CT fluoroscopy, patient doses may be on the order of centigrays per second. An additional concern is the scattered exposure to the hands and body of radiologists, since they may be close to the x-ray source during the manipulation of the needle (9).

may increase. Because a greater number of physicians use CT fluoroscopy, it is critical to determine the radiation dose to patients and radiologists and to explore methods to limit the dose. Our purpose was to determine the radiation dose to radiologists during CT fluoroscopic procedures by using a low-milliamperere technique and short CT fluoroscopic exposures.



MATERIALS AND METHODS

From May 1, 1999, to September 20, 1999, we prospectively monitored the radiation dose to radiologists performing interventional procedures with CT fluoroscopy. Our institutional review board deemed this project exempt from its review.

During the study period, 220 consecutive CT fluoroscopy-guided interventional procedures were performed in 189 patients. One hundred sixty patients underwent one procedure, 27 patients underwent two procedures, and two patients underwent three procedures. Interventional procedures included spinal, chest, and abdominal and pelvic procedures as follows: 40 lumbar, 13 sacroiliac, and four cervical injections for neurolysis; 17 biopsies of spinal lesions; 24 chest biopsies; 44 biopsies in the abdomen and pelvis; 20 fluid aspirations in the abdomen or pelvis; and 58 catheter drainages of fluid collections in the abdomen or pelvis. There were 98 women and 91 men. Their mean age was 58 years (age range, 24–80 years).



สรุป ... คำสำคัญ

- คำที่แสดงเนื้อหาของงานวิจัย
- คำที่ช่วยในการสืบค้น
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