

INTELLECTUAL PROPERTY APPLIED TO MEDICAL IMAGING SYSTEMS IN PRESENT CONTEXT

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Rezumat. *Lucrarea prezintă aduce în discuție tehnologiile imagistice folosite în trecut și prezent, cu utilitate în neurochirurgie. Reprezintă o trecere sumară în revistă a tehnologiilor convenționale (aparatura ce folosește radiațiile X) și neconvenționale (aparatură ce folosește radiațiile electromagnetice și ultrasunetele), utilizate în practica curentă. Radiologia ca specialitate de sine stătătoare a cunoscut o evoluție remarcabilă în ultimii ani, ajutând neurochirurgia ca specialitate să se dezvolte având dispozitivele necesare pentru o mai bună diagnosticare a leziunilor sistemului nervos central și periferic ajutând la un planning operator mai eficient și un tratament chirurgical adaptat. Atât tehnicile radiologice convenționale cat și cele neconvenționale reprezintă un pilon esențial în aplicarea tehnicilor chirurgicale de bază în neurochirurgie. Pe măsură ce tehnicile imagistice au cunoscut o dezvoltare exponențială la fel și aparatura utilizată a cunoscut o îmbunătățire. Totodată acumularea și stocarea datelor cu caracter medical, reprezintă o provocare din ce în ce mai mare în ultimii ani. O data cu evoluția tehnologică, proprietatea intelectuală aplicată bazelor de date ce conțin informațiile pacienților capătă un rol din ce în ce mai important. Necesitatea centralizării și menținerii securității unor astfel de informații reprezintă un domeniu de cercetat.*

Abstract. *The present work discusses the imaging technologies used in the past and present, with utility in neurosurgery. It represents a brief overview of conventional (equipment that use X-rays) and unconventional (equipment that used electromagnetic radiation and ultrasound) technologies, used in current practice. Radiology as a stand-alone specialty has undergone remarkable development in recent years, helping neurosurgery as a specialty to develop, having the devices necessary for a better diagnosis of lesions of the central and peripheral nervous system, helping to a more efficient surgical planning and an adapted surgical treatment. Both conventional and unconventional radiological techniques represent an essential pillar in the application of basic surgical techniques in neurosurgery. As imaging techniques have undergone exponential development, so has the equipment used undergone improvement and upgrading. At the same time, the accumulation and storage of medical data represents an increasingly greater challenge in recent years. With technological evolution, intellectual property applied to databases containing patient information is becoming increasingly important. The need for centralization and maintaining the security of such information is a field of research.*

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Keywords: intellectual property, medical imaging systems, neuroradiology, database, security

DOI <https://doi.org/10.56082/annalsarscieco.2023.2.22>

1. Introduction

Medical imaging systems have always been a key element in the development and provision of high-quality neurosurgical care. Radiology and medical imaging are a branch of medicine that deals with the evaluation of anatomical structures and their representation in the form of images. In neurosurgery, these images can be used to diagnose, treat, and monitor disease of the central and peripheral nervous systems.

Radiology and medical imaging are a branch of medicine that uses ionizing radiation, electronic waves, and ultrasound for the evaluation of the anatomical structures and present them in the form of images. Conventional radiology systems use ionizing radiation of the type X-rays. These images can be used to identify normal or pathological anatomical structures. [3]

Images taken with the help of radiology devices are currently stored on an electronic medium and, when accumulated, form a database. This represents an important element that can be used to store and manage medical information. In the case of radiology, the database can be used to store radiology images, as well as information about patients, such as medical history, test results and treatment.

Intellectual property rights over databases are important for several reasons. First, they protect the investment of time and resources required to collect, organize, and manage these databases. Second, they encourage the creation and development of new databases, which are essential for economic and social development. Third, they protect the rights of legitimate database users, who have the right to access and use the information contained in them for commercial, medical, or scientific research purpose. In the medical field, databases of medical images and patient data can be used to improve diagnosis and treatment. In the research world, databases of scientific data can be used to accelerate innovation. [21]

2. Medical imaging systems

2.2. Imaging Methods

Medical imaging systems can be represented by the sum of radiology devices and software used to obtain and display images of anatomical segments on a screen or printed. Radiology equipment can be divided into conventional and non-conventional equipment. [1, 2, 4]
