

# VLOGA RADIOLOŠKEGA INŽENIRJA V FORENZIČNI RADIOGRAFIJI – PREDSTAVITEV PRIMEROV

## THE ROLE OF THE RADIOGRAPHER IN FORENSIC RADIOGRAPHY – CASE PRESENTATION

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### IZVLEČEK

**Uvod in namen:** Forenzična radiologija je specializirano področje medicinskega slikanja z uporabo radioloških tehnik za pomoč patologom in antropologom pri ugotavljanju vzroka smrti ali identifikaciji posmrtnih ostankov. Radiološki inženirji imajo ključno vlogo pri radioloških forenzičnih preiskavah. Rentgenske slike so primerne za oceno zlomov kosti, zbiranja plinov ter identifikacijo in lokalizacijo radiopačnih tujkov. Predstaviti želim izkušnje radioloških inženirjev pri slikanju pokojnikov na Oddelku za patologijo v UKC Maribor.

**Metode:** Retrospektivno sem primerjala preiskave šestih pokojnikov v obdobju od junija 2021 do februarja 2022. Pri dveh pokojnikih smo opravili slikanje glave, pri eni pokojnici smo slikali celo telo, pri eni pokojnici smo iskali poškodbe skeleta, trupli dveh pokojnikov sta bili v tako slabem stanju, da smo slikali celo telo. Radiološke preiskave smo opravili z digitalnim mobilnim aparatom Canon Mobirex v prostorih Oddelka za patologijo. Uporabili smo velik detektor 35x43 cm, brez rešetke. V vseh primerih sta slikanje opravljala dva radiološka inženirja; eden je upravljal z aparatom, drugi pa je s pomočjo obdukcijskega pomočnika premeščal detektor pod pokojnikom ter po potrebi prilagajal položaj trupel.

**Rezultati in razprava:** Kakovost radiogramov zaradi pogojev slikanja ni primerljiva z radiogrami, ki jih pridobimo pri našem standardnem delu na skeletnih diagnostikah. Na kakovost radiogramov vplivajo teža pokojnika, ohranjenost in položaj trupel ter prisotnost medicinskih kovinskih vsadkov. Pravilno premeščanje detektorja pod pokojniki je predstavljalo izziv zaradi teže trupel, kovinskih vozičkov ter zatikanja vreče z detektorjem v vrečo s pokojnikom. Izvidi radiologov niso bili potrebni.

**Zaključek:** Klasično rentgensko slikanje skeleta patologom olajša delo pri oceni zlomov kosti, zbiranja plinov ter identifikacijo in lokalizacijo radiopačnih tujkov. Radiološke preiskave pokojnikov predstavljajo strokovni izziv za vsakega radiološkega inženirja, saj mora za pridobitev optimalnih radiogramov pozabiti na predsodke, predvsem pa uporabiti vse svoje pridobljeno znanje, izkušnje, spretnosti, iznajdljivost ter sposobnost improvizacije.

**Ključne besede:** radiološki inženir, forenzika, radiografija

### ABSTRACT

**Introduction and purpose:** Forensic radiology is a specialised field of medical imaging using radiological techniques to assist pathologists and anthropologists in determining the cause of death or identifying remains. Radiographers play a key role in radiological forensic examinations. X-ray images are suitable for the assessment of bone fractures, gas collection and the identification and localisation of radiopaque foreign bodies. I would like to present the experience of radiographers in imaging the deceased at the Department of Pathology, UMC Maribor.

**Methods:** I retrospectively compared the investigations of six deceased patients in the period from June 2021 to February 2022. Two deceased had head imaging, one deceased had full body imaging, one deceased was searched for skeletal injuries, the bodies of two of the deceased were in such a bad condition that we took pictures of the whole body. Radiological examinations were performed using a Canon Mobirex digital mobile machine in the Department of Pathology. We used a large 35x43 cm detector, without a grid. In all cases, two radiographers performed the imaging; one operated the machine, while the other radiographer, with the help of a post-mortem assistant, moved the detector under the deceased and adjusted the position of the bodies as needed.

**Results and discussion:** The quality of the radiographs is not comparable to the radiographs obtained in our standard skeletal diagnostic work-up due to the imaging conditions. The quality of the radiographs is influenced by the weight of the deceased, the preservation and position of the corpse, and the presence of medical metal implants. Moving the detector correctly under the deceased posed a challenge due to the weight of the bodies, the metal trolleys and the detector bag getting stuck in the deceased's bag. No radiology reports were required.

**Conclusion:** Conventional skeletal X-ray imaging facilitates the work of pathologists in the assessment of bone fractures, gas collection and the identification and localisation of radiopaque foreign bodies. Radiological examinations of the deceased represent a professional challenge for every radiographer, who must ignore prejudices and, above all, use all their knowledge, experience, skills, ingenuity and improvisation to obtain optimal radiographs.

**Keywords:** radiographer, forensics, radiography

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