

GIBANJE DANKE MED NEOADJUVANTNIM OBSEVANJEM PRI BOLNIKI Z RAKOM DANKE

MOTION OF THE RECTUM DURING NEOADJUVANT IRRADIATION AT THE PATIENTS WITH RECTAL CANCER

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IZVLEČEK

Uvod / namen: Danka in mezorektum sta gibljivi strukturi zaradi peristaltike ali različne napolnjenosti sečnega mehurja, kar je treba obvezno upoštevati kot gibanje organov. Hiter in učinkovit razvoj slikovne tehnologije je omogočil vstop v svet adaptivne radioterapije (ART), ki nam omogoča prilagajanje spremembam položaja tarčnih volumnov. Namen raziskave je bil pridobiti celovit vpogled v gibanje danke v zgornji, srednji in spodnji tretjini in preučiti potrebo po vzpostavitvi ART.

Metode: V raziskavo smo vključili 50 predoperativno obsevanih bolnikov. Izvedbo raziskave smo razdelili na štiri dele: pregled baze podatkov, vrisovanje anatomskih struktur, zbiranje podatkov odstopanj in izpis podatkov, kjer smo ločeno izvajali poravnavo na kostne strukture – križnico in poravnavo na zadnjo steno danke.

Rezultati: Največje odstopanje je bilo izraženo v zgornji, sledila je srednja in nato spodnja tretjina danke. Analiza je pokazala, da so pri poravnavi na kostne strukture – križnico statistično značilne razlike v vertikalni in lateralni smeri, medtem ko so pri poravnavi na zadnjo steno danke statistično značilne razlike v lateralni smeri.

Razprava in zaključek: Položaj danke v zgornji, srednji in spodnji tretjini se vsakodnevno spreminja pri poravnavi na kostne strukture – križnico, kot tudi pri poravnavi na zadnjo steno danke. S pridobljenimi rezultati smo prikazali, da je danka organ, ki zaradi gibanja potrebuje uporabo ART, saj na njeno napolnjenost nimamo vpliva. Z zagonom ART v Sloveniji bi zdravljenje onkoloških bolnikov s karcinomom danke dvignili na višjo raven in zagotovili boljše in natančnejše zdravljenje.

Glavne besede: rak danke, gibanje danke, neoadjuvantna radioterapija, adaptivna radioterapija

ABSTRACT

Introduction and purpose: Rectum and mesorectum are dynamic structures affected by peristalsis or varying bladder filling, and these factors must be considered as organ motion. The rapid development of imaging guided technology has facilitated the emergence of adaptive radiotherapy (ART), allowing adaptation to change in the position to target volumes. The aim of this research was to obtain comprehensive insight into the motion of the rectum in the upper, middle, and lower third, and assess the need for the implementation of ART.

Methods: Fifty preoperatively irradiated patients were included in the study. The research was divided into four main parts: database review, the drawing of anatomical structures, data collection of deviations and data output, where alignment to bone structures – the sacrum and alignment to the posterior rectal wall – were performed separately.

Results: The greatest deviation was expressed in the upper, followed by the middle and then the lower third of the rectum. The analysis revealed that there are statistically significant differences in vertical and lateral direction when aligning to bone structures – sacrum, while when aligning to the posterior rectal wall, there are statistically significant differences in the lateral direction.

Discussion and conclusion: The position of the rectum in the upper, middle, and lower thirds changes daily in alignment with bone structures – sacrum, and in alignment with the posterior rectal wall. The obtained results demonstrate that the rectum requires ART as a highly movable organ with no control over its filling. Implementing ART in Slovenia would elevate the treatment of rectal cancer patients to a higher standard, ensuring better and more precise treatment.

Keywords: rectal cancer, rectal motion, neoadjuvant radiotherapy, adaptive radiotherapy

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