



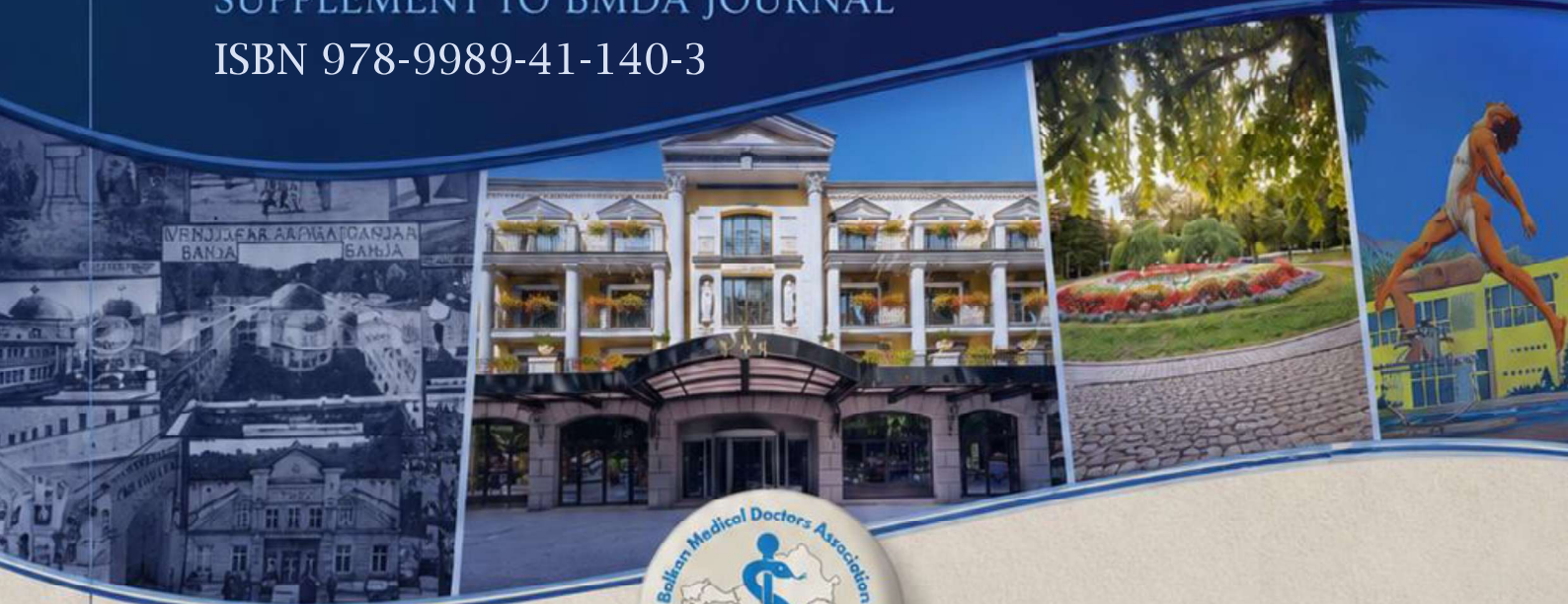
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PNEUMOTHORAX IN PREMATURE INFANT: A NEW PERSPECTIVE THROUGH LUNG X-RAY IMAGE SEGMENTATION

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The aim of the research is to analyze methods of visualizing pneumothorax in premature infants through segmentation of lung radiographic images. This study examines the radiograph of a premature infant at 29 weeks gestation diagnosed with pneumothorax. Pneumothorax visualization was performed through segmentation of the lung radiographic image using the MATLAB software environment. Prior to segmentation, the radiographic image was preprocessed, including noise removal and edge enhancement. The expanded portion of lung parenchyma was delineated using active contours, and the algorithm's reliability was assessed through confusion matrix analysis and Dice coefficient. The results demonstrated visualization of the unaffected lung area, with automatic recognition of that region. Performance evaluation parameters showed high accuracy above 0.87. Analysis of segmentation of radiographic images of premature infants with pneumothorax can improve the diagnosis of this urgent condition in neonatology and the evaluation of patients after thoracentesis.