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The Value of Segmentation in 2D and 3D Reconstruction from a Tumor Process of Hepatic Gland



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ABSTRACT

The development of transrational research at the anatomy lab in collaboration with gastroenterology services and hepatobiliary surgery by anatomical radiological interpretation based on segmentation in 2D and 3D reconstruction using serial sections of medical imaging (CT) for tumor process of hepatic gland, this approach performs a fundamental element in the diagnostic process and offers a range of tools adapted to the constraints of clinical practice and optimize the decision of surgery and restoration of function. The objective of this study is to highlight the anatomical relationship of tumor of the liver to improve care using data obtained by the 3D reconstruction of serial sections of CT. The three-dimensional modeling in volumetric mode of liver identifies the various normal and pathological anatomical relationships and helps to locate the tumor (micronodular appearance) in three-dimensional for a better surgical treatment of a patient aged 63 years admitted at the gastroenterology department of the UHE Oran. The next stages of our work could be enriched by a finer and further modeling analysis.

INTRODUCTION

The development of transrational research at the anatomy lab in collaboration with gastroenterology services and hepatobiliary surgery by anatomical radiological interpretation based on segmentation in 2D and 3D reconstruction using serial sections of medical imaging (CT) for tumor process of hepatic gland, this approach performs a fundamental element in the diagnostic process and offers a range of tools adapted to the constraints of clinical practice and optimize the decision of surgery and restoration of function. The objective of this study is to highlight the anatomical relationship of tumor of the liver to improve care using data obtained by the 3D reconstruction of serial sections of CT.

MATERIAL AND METHODS

Sections of CT of a patient aged of 63 years admitted to our clinic for an evolving process of the liver, reconstructed by surface mode and VR with OsiriX software, which can identify the local and regional extension of the tumor (micronodular appearance hepatic gland).

CONCLUSION

The three-dimensional modeling in volumetric mode of liver identifies the various normal and pathological anatomical relationships and helps to locate the tumor (micronodular appearance) in three-dimensional for a better surgical treatment of a patient aged 63 years admitted at the gastroenterology department of the UHE Oran. The next stages of our work could be enriched by a finer and further modeling analysis.

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FIGURES

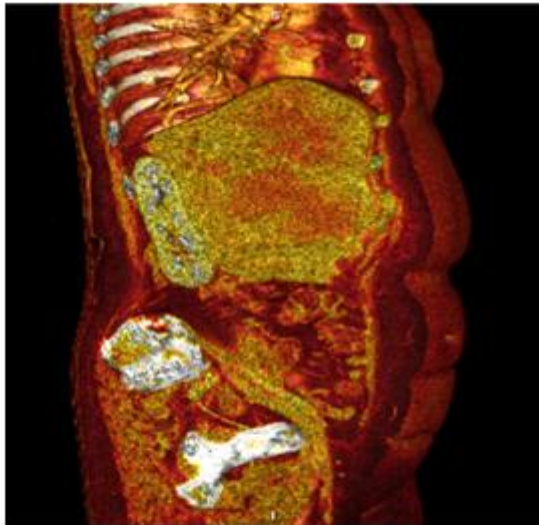


Figure 1: Modeling of Skeleton by VR treatment on OSIRIX

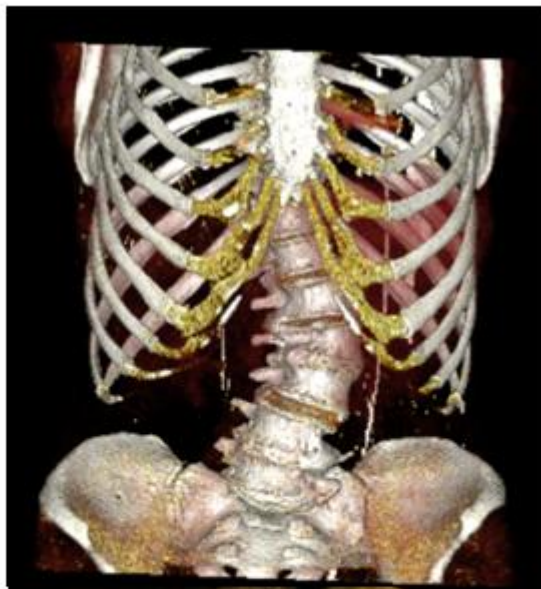


Figure 2: Modeling of Skeleton by VR treatment on OSIRIX

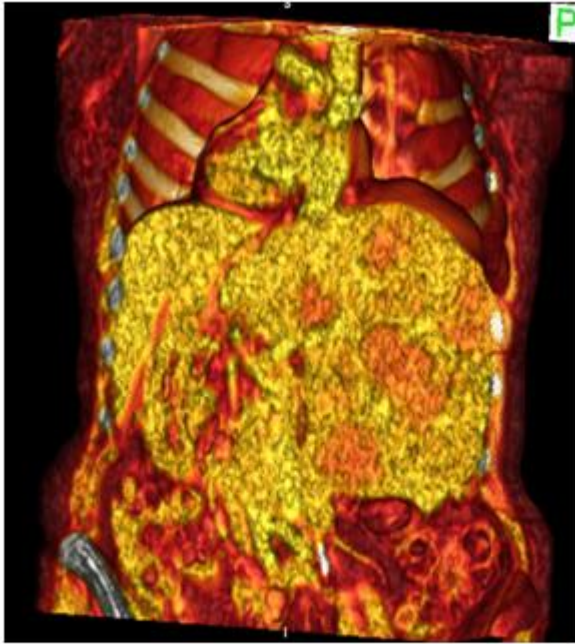


Figure 3: Modeling of Skeleton by VR treatment on OSIRIX

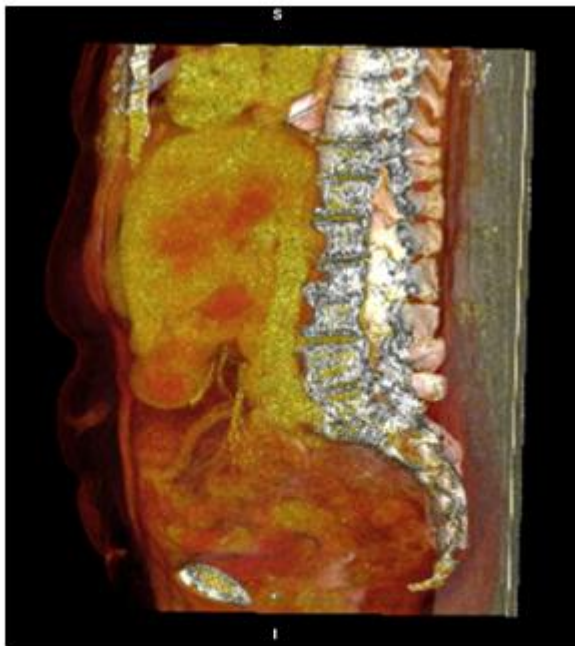


Figure 4: Modeling of Skeleton by VR treatment on OSIRIX



Figure 5: Modeling of Skeleton by VR treatment on OSIRIX



Figure 6: Modeling of Trunk by Surface treatment on OSIRIX