3 - Clinical Anatomy

PO-067 - (23738) - TRIGEMINAL INJECTION PROCEDURE USING STEREOSCOPIC 3D MODEL VISUALIZATION AS GUIDE FOR CLINICAL TRAINING

D. Cui (United States of America)[1]; J. Chen (United States of America)[2]; G. Yang (United States of America)[1]

1 - University of Mississippi Medical Center, Jackson; 2 - University of South Carolina, Lexington Medical Center

Dongmei Cui
Jackson

Jian Chen
West Columbia

Gongchao Yang
Jackson

None

Visualization of stereoscopic 3D models has been used in anatomical education and clinical training in recent years. Trigeminal ganglion injection is one of the most common procedures for facial pain and trigeminal neuralgia. The foramen ovale is typically targeted under 2D fluorescent guidance to locate the mandibular branch of the nerve, which exits the skull after coming from the deeply nested ganglion.

A 3D reconstruction program, Amira software, deidentified computed tomography angiography (CTA) images were used to create 3D anatomical structures involved in the pathway of trigeminal ganglion injection.

3D models of anatomical structures, including the trigeminal ganglion, its branches, associated blood vessels, muscles, glands, the skull, and skin, were created. These 3D structures can be visualized using a stereoscopic projector system and integrated with CTA images in coronal and sagittal orientations and allow internal visual exploration of the pathway from the foramen ovale, where the trigeminal ganglion lies, and the nerve passes through internal structures and out to external anatomic landmarks.

The 3D stereoscopic models provide a new approach to better understand the anatomical structures that are associated with the injection procedure, and allow multiple explorations and visualization of the pathway, help to avoid unnecessary damages to the important internal structures, therefore reduce potential risks and help prevent post-operative complications. Medical education and clinical training could benefit from the stereoscopic 3D model with pathway visualization.

Palavras-chave : Trigeminal injection, Stereoscopic visualization, 3D model