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Biography

Aini Nasar, is a dental student, currently undertaking fourth year of her undergraduate studies in the University of Glasgow.

Ultrasonography in Dentistry: An Explorational Study of the Submandibular Region

Abstract:

Ultrasonography is a non-invasive, real-time imaging technique increasingly recognized for its clinical utility in dentistry. This project evaluated the educational and diagnostic value of chairside ultrasound in enhancing the understanding of complex submandibular anatomy and its relevance to pathological conditions. Following an informed consent process, volunteers were recruited for scanning with a focus on mastering probe orientation and identifying anatomical landmarks. B-mode, Colour Doppler, and Pulse Wave Doppler techniques were utilized to visualize structures including the submandibular gland, mylohyoid muscle, facial artery, and facial vein. Complementary literature reviews were conducted to correlate these normal findings with the characteristic appearances of Sjögren's syndrome and sialolithiasis. Healthy submandibular glands demonstrated a fine-grained, homogeneous hyperechoic structure. Vascular structures were confirmed through Doppler imaging, displaying pulsatile arterial flow and venous flow patterns. Comparative analysis highlighted key diagnostic features of pathology, such as parenchymal heterogeneity in Sjögren's syndrome and the presence of hyperechoic calculi with acoustic shadowing in sialolithiasis. This study highlights the potential of ultrasonography to bridge the gap between theoretical anatomical knowledge and clinical practice. By facilitating the earlier detection of conditions like Sjögren's syndrome, chairside ultrasound can significantly improve patient management and long-term outcomes. The insights gained from this project have contributed to the development of clinical training modules on TurasLearn to support future dental education.