



# Synergizing ChatGPT and general AI for enhanced medical diagnostic processes in head and neck imaging

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To the Editor,

The advent of ChatGPT within the landscape of medical diagnostics, particularly in the specialized area of head and neck disorders, exemplifies the confluence of artificial intelligence (AI) with medical imaging, propelling us toward a transformative improvement in patient care [1]. This synergy is particularly pertinent given the complexity of head and neck anatomy and the pivotal functions it encompasses. ChatGPT, as a model of advanced AI, is not an isolated phenomenon but part of a broader spectrum of AI technologies, including deep learning and machine learning, each playing a distinct role in enhancing diagnostic precision and treatment personalization [2, 3]. Traditional imaging methods, while indispensable, have their limitations. Deep learning algorithms, a subset of machine learning, are increasingly used to refine image resolution and specificity and to reduce the rate of human error [4]. These algorithms excel in identifying intricate patterns within imaging data, providing a robust support system for radiologists. Meanwhile, machine learning models can be trained on vast datasets to recognize subtle anomalies in images that might elude the human eye, thereby providing an invaluable second opinion [5]. ChatGPT, specifically, with its natural language processing capabilities, offers a complementary layer of intelligence to

these technologies. It aids in interpreting complex reports, synthesizing patient data, and suggesting differential diagnoses, thus serving as a cognitive assistant to healthcare practitioners [6]. Its conversational interface also simplifies interactions between clinicians and the AI analytics of medical imaging, streamlining workflows for enhanced efficiency. In clinical settings, the integration of AI extends beyond image analysis. Machine learning models, for instance, can predict patient outcomes by analyzing historical data, while ChatGPT can elucidate the implications of these predictions to patients, aiding in their understanding and engagement with their own health management [7, 8]. The role of AI becomes even more crucial in telemedicine, where ongoing patient monitoring is essential, especially in the field of head and neck oncology [9]. As we navigate this digital transformation, it is essential to recognize that ChatGPT and various other AI technologies serve as ancillary tools. They are powerful assistants in the diagnostic process, illustrated in Fig. 1, which demonstrates their potential benefits in medical imaging for head and neck disorders (Fig. 1). These technologies facilitate the organization and analysis of patient data, enhancing the radiologist's ability to generate accurate and comprehensive reports [10]. ChatGPT, in particular, can draft structured narratives based on dictated findings, reducing the administrative load on radiologists. Furthermore, the

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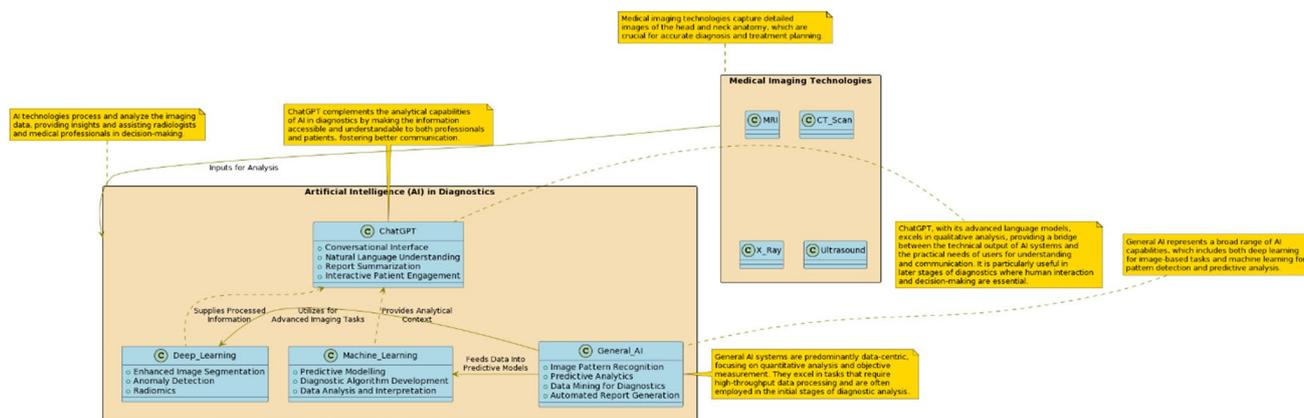
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**Fig. 1** Potential benefits of using ChatGPT vs. other AI technologies in medical imaging for head and neck disorders

ability of AI to stay abreast of the latest medical literature ensures that practitioners are informed about the latest imaging techniques and diagnostic criteria.

While AI, including deep learning and machine learning, can reveal patterns and propose diagnoses, the responsibility for the final interpretation and clinical decision-making rests with the trained radiologist. The technology's role is to support—not to supplant—the expertise of medical professionals, thereby augmenting the precision and efficiency of their critical work.

**Data availability** Data are not associated with a repository and are not available.

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