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Exactech Unveils Pioneering AI and Radiomics Research for Shoulder Arthroplasty, Highlights Advances in Knee and Ankle Technologies

GAINESVILLE, Fla. (Sept. 9, 2024) – Exactech, a global medical technology leader, presented new research showcasing the potential of artificial intelligence and radiomic analyses in shoulder arthroplasty, as well as advances around its Active Intelligence® (AI) ecosystem of smart technologies, at the 35th Congress of International Society for Technology in Arthroplasty (ISTA) in Nashville, Tenn.

"Exactech's presentation of its latest AI-driven research exemplifies our commitment to advancing orthopedic science and clinical knowledge through novel technology and patient-focused analytic techniques," said Chris Roche, Exactech Senior Vice President, Extremities. "Exactech has an amazing team of data scientists and research engineers focused on quantitatively analyzing clinical data such as our ExactechGPS® CT images, alongside our multi-center clinical research data. The application of this research will facilitate development of new clinical decision support tools that will profoundly change how surgeons treat their patients."

The new research demonstrated how machine learning techniques, such as clustering, can aggregate CT image derived radiomic data with patient demographic data to identify clinically relevant muscle classifications that are predictive of clinical outcomes after shoulder arthroplasty. In the first study, deltoid radiomics from CT scans of 1,382 patients were analyzed to identify five distinct deltoid clusters that were associated with both high levels and low levels of motion, before and after shoulder arthroplasty. This technique can be performed on other muscles, as well as bone, to synthesize complex image data in a manner that can be readily interpreted by clinicians through preoperative planning software.

Two other radiomic studies quantified the 3D deltoid morphology and correlated that radiomic data to clinically relevant thresholds for clinical improvement, identifying the specific radiomic measures that are statistically associated with improved outcomes after shoulder arthroplasty. This unique information is useful for the development of future clinical decision support tools.

Additionally, the company highlighted significant developments in knee and ankle surgery technologies, including the easy adoption of the Newton® knee balancing technology and the accuracy of GPS for total ankle arthroplasty.[1] These innovations, powered by Exactech AI, empower surgeons with data-rich, low-cost solutions that are designed to improve patient outcomes.

For more information about our AI technologies, visit www.ExactechAI.com.

About Exactech
Exactech is a global medical technology leader that empowers orthopaedic surgeons with innovative implants, surgical instruments and the Active Intelligence® (AI) ecosystem of smart technologies to

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give patients EXACTLY what they need to regain mobility. Visit www.exac.com for more information and connect with us on LinkedIn, Vumedi, YouTube, Instagram and X.

References

1. **Haupt E et al.** Accuracy and Precision Evaluation of Image-based Computer Assisted Surgical System for Total Ankle Arthroplasty. Presented at CAOS 2024.

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