HR orthopaedics

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Robotics, Orthopaedics and Outcomes

Robotically assisted joint replacement surgery is a rapidly developing field in orthopaedics. There is good evidence that robotic techniques result in significant improvements in surgical planning, accuracy of implant position and potentially can improve patient outcomes.

Background
Arthritis occurs when cartilage wears away at the end of the bones causing severe pain and stiffness. Joint replacement surgery is a widely practiced technique where the damaged bone and cartilage are removed and replaced with artificial components. Knee replacement may involve both sides of the joint (total knee replacement) or just the damaged part of the joint (partial or unicompartmental knee replacement). Total hip replacement involves replacement of the ball and socket of the joint.

Robotic Techniques
There are a number of different types of robotic surgery, some but not all of which require a computerized tomography (CT) scan prior to surgery. Gathering preoperative information serves to assist in planning exactly how much bone should be removed and optimises the accuracy of positioning and alignment of the implant.

The surgeon guided robotic system is well established, allowing specific planning in patients undergoing knee replacement. This technique assists the surgeon in achieving precise resection of bone. This in turn facilitates the surgeon in achieving the best position of the implant, whilst maintaining ligament balance. The use of the robot allows the surgeon to optimise the ligament balance and this is key to enhancing stability of the knee joint and mobility postoperatively.

Mr Hoad-Reddick has completed a number of procedures using the NAVIO Surgical System, which is a handheld Robotic system. The NAVIO robotics-assisted system creates a 3D representation of the unique shapes and profiles of the knee, without the need for a preoperative CT scan. This allows patients to receive the benefits of robotics-assistance without the extra steps, costs and significant radiation dose associated with additional preoperative imaging.

Conclusion
Robotically assisted orthopaedic surgery has the potential for improving surgical outcomes, but there is limited access to these techniques.

Mr Hoad-Reddick is delighted to be able to offer this service at BMI The Alexandra Hospital. Please call: HR Orthopaedics office on 0161 722 0007 for further information.

For further reading, please see:
https://www.boa.ac.uk/wp-content/uploads/2017/09/BOA-JTO-V05-I03-Subspecialty-2.pdf
http://www.smith-nephew.com/news-and-media/media-releases/news/smith--nephew-expands-navio-robotics-assisted-surgery-system-into-total-knee-replacements/
https://www.stryker.com/us/en/joint-replacement/systems/mako-robotic-arm-assisted-surgery

KEY POINTS

- **Rapidly developing field**
- **Improved implant position**
- **Better patient outcomes**
- **Available at**

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