The future of shoulder and elbow surgery

Deborah Higgs

Deborah Higgs is a Consultant Shoulder and Elbow Surgeon at the Royal National Orthopaedic Hospital, Stanmore, and has a special interest in complex surgery of the Shoulder and Elbow with a tertiary referral practice that reflects this. She lectures on the Elbow and Shoulder nationally and Internationally.

A previous member of the BESS Education Committee, she is the current BESS Instructional Course Sub-Committee Elbow Surgeon Member and was appointed the NCIP (National Consultant Information Programme) Clinical Lead for Orthopaedics in 2022.

I still remember my first mobile phone, a NOKIA that simply allowed me to ring someone and send a text, with emojis limited to colons, semi-colons and brackets. The year was 1998. Whilst I now have a smart phone, that allows me to be connected 24/7, it is an iPhone 7, which tells you everything you need to know about technology and me. Having said this, I recognise the transformative role that technology is playing in the evolving world of shoulder and elbow surgery, with artificial intelligence and machine learning having the potential to enhance diagnostic accuracy, optimise surgical planning, enable robotic-assisted interventions, and personalise post-operative care. In my own practice, I have already embraced technology in my surgical planning. I was therefore delighted to be asked to guest edit this specialist section on shoulder and elbow surgery where we have two articles that explore this further.

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In Catherine Simister's article on Large Language Models (LLMs), she writes about the role they may play in education, academia and clinical efficiency, writing how LLMs are capable of passing the Member of the Royal College of Surgeons (MRCS) exam, scoring more than 85%. She highlights that as the potential of LLMs are realised that regulation must ensure data quality, and a 'clear definition of the scope of LLMs within medical practice'.

In the second article 'A tipping point for technology in shoulder surgery?', Simon Hurst writes about technology's second coming and explores the role of robotics and mixed reality in shoulder surgery. He describes how industry is investing in technologies that support existing implant systems with refinement in planning, navigation and robotic platforms, and how this time around they may become more embedded in our everyday practice.

Both articles describe the role technology can play in the future but emphasise that with these new technologies comes responsibility to ensure that they are regulated and deliver genuine improvement in care. This aligns with NICE's position statement from August 2024, "When AI methods are used, the transparency, rigour and trust in our guidance production is maintained. Therefore, any use of AI should be done judiciously, leveraging the strengths of AI to support and enhance decision making only when it is suitable and when it adds value".

The final article written by the current president and immediate past president of the British Elbow and Shoulder Society (BESS) discusses Hub and Spoke Models of care in the delivery of low volume/high complexity orthopaedic surgery. They discuss the rationale and challenges in centralising care concluding that "changes in the provision of services based on guidelines alone seem to be ineffective until coupled with new NHS network funding models".

These are interesting times in shoulder and elbow surgery, and all three articles provide food for thought, with a common theme of improving patient outcomes. I hope you enjoy reading them. ■