■ EDITORIAL

Incisions great and small

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The concept of minimally invasive surgery is perhaps the most important revolution in surgical technique in recent times and is now applied to most surgical specialties. In general surgery, for example, laparoscopic cholecystectomy was the first procedure to be widely adopted. Its importance was more the cultural change it engendered than the success of the operation. Other laparoscopic procedures such as appendectomy, adrenalectomy or splenectomy are now well documented, while others are still being assessed.¹⁻⁶ Mini-incision cardiovascular surgery forms an increasing percentage of valvular or vascular procedures in appropriately selected patients.⁷⁻¹⁰ In orthopaedic surgery arthroscopy is now firmly established, mini-incision knee replacement widely publicised¹¹ and now minimal incision total hip replacement has joined the field. Its development may be driven by a desire to reduce costs and morbidity^{12,13} and influenced by a news-hungry media, but does it truly advance patient care?¹⁴⁻¹⁷

Minimal access orthopaedic surgery can be subdivided into endoscopic (arthroscopic) or minimal incision surgery. Arthroscopic surgery has evolved significantly during the last two decades and can now be applied to almost every synovial joint of the body with proven success.¹⁸ Some procedures have become the standard means of diagnosis and treatment,¹⁹⁻²¹ while others have only recently been introduced.²² The definition of minimally invasive hip surgery is still uncertain although it is clearly distinct from arthroscopic surgery of the hip. Some publications refer to total hip replacement with the use of navigation through a 10 to 15 cm incision as minimally invasive,²³ while others suggest that a 5 cm incision is appropriate.²⁴ A single-incision posterior approach,²³⁻²⁶ a mini-anterior²⁷ or a two-incision, fluoroscopically-controlled approach²⁸ have also been proposed. None of these procedures reduces the amount of surgical trauma to bone but are associated with less handling of soft tissue. Specialised instrumentation may be

required for which a steep learning curve is a feature.^{23-25,27,28}

The main advantages to be expected from these minimally invasive techniques are less pain, earlier mobility, a reduced requirement for transfusion and a shorter length of stay in hospital.^{26,29,30} Unfortunately, existing publications refer to either very small series or have too short periods of follow-up. Chimento and Sculco,³¹ Waldman^{25,26} and Sherry et al²⁴ have each published their initial experiences in groups of non-obese patients but without control groups. Wenz et al,²⁹ in a retrospective, non-randomised study, compared the mini-posterior with a conventional lateral approach. They reported significant earlier mobility, decreased transfusion requirements, less transfer assistance and a more favourable condition of the patient on discharge. There was no difference in the length of stay in hospital. DiGioia et al²³ reported significantly better scores for pain and function in the first six months after operation in patients with a BMI<30 with their computer-assisted technique. No difference was found after one year or in the length of stay in hospital. Similarly, Chimento et al³⁰ described a decrease in blood loss and a quicker return to normal gait in patients with a BMI<30. No increase in the rate of complications was found two years after surgery.

Currently, the literature lacks precise data on the duration of the operations for a minimally invasive total hip replacement or information about the learning curve, cost effectiveness, patient satisfaction or the long-term results. Hearsay suggests that minimally invasive techniques may take considerably longer to perform than the more traditional procedures and that the rate of intra-operative or long-term complications may be higher. Comparative, prospective, blinded studies do not yet exist. Orthopaedic surgeons worldwide appear to be embracing this new technique, but it is still unproven and has recognised problems such as malpositioning of the cup.

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However, it is becoming widely used and tightly bound with new protocols for anaesthesia, post-operative analgesia and rehabilitation.³² Despite this, concern has already been expressed about the method by Sculco,³³ one of its pioneers, who has stated that "It must be emphasized that a prosthetic arthroplasty is not a minimally invasive procedure, regardless of the approach....Cosmesis should never be substituted for an excellent arthroplasty outcome".

The publicity given by the media, combined with a public that is eager for novelty, appear to make a great impact on a surgeon's choice. Surely this is questionable? Peer-reviewed data should be the criteria before changing a method of treatment, with the focus of attention being to maximise the benefit to a patient rather than to display virtuosity. A rational approach is needed when dealing with new procedures, so that both surgeons and patients benefit. Many surgical innovations have been introduced in the past and accepted widely initially only to disappear ignominiously some years later. Let us hope, for the sake of our patients, that minimal incision total hip replacement is an exception.

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