

We welcome letters to the Editor concerning articles which have recently been published. Such letters will be subject to the usual stages of selection and editing; where appropriate the authors of the original article will be offered the opportunity to reply.

Letters should normally be under 300 words in length, double-spaced throughout, signed by all authors and fully referenced. The edited version will be returned for approval before publication.

The tourniquet in total knee arthroplasty

Sir,

We read with interest the article by Wakankar et al¹ in the January 1999 issue entitled 'The tourniquet in total knee arthroplasty'.

There are several points which we wish to raise. It is unclear how many surgeons, and of what grade, operated and where the surgery was performed. It is not stated what problems were encountered with bleeding when a tourniquet was not used. Although they conclude that the tourniquet can be used satisfactorily, more wound problems were observed in this group, including one wound still leaking at six weeks.

Concern was expressed about haemostasis and the ability to create an appropriate bone surface for applying cement when a tourniquet was not used. A combination of regional anaesthesia, exposure of the joint with the knee flexed and the use of intraosseous suction applied within 1 cm of the cut bone surfaces with lavage, creates an ideal environment and considerably reduces airborne debris.

If a tourniquet is used the cuff pressure should be restricted to 100 mmHg above the systolic pressure.² Its use is strongly contraindicated in the presence of diabetes, peripheral vascular disease, rheumatoid disease, previous thromboembolism, active malignancy, multiply scarred legs, obese thighs and for revision surgery.

Since so many authors have attributed complications to the use of the tourniquet, such as nerve paralysis, vascular injury, circulatory changes on exsanguination with cardiac or respiratory problems, cardiac arrest, pulmonary oedema, increased rates of DVT and, recently, increased rates of embolism,³ does it not seem that the best practice is to avoid its use? We have shown that knee replacement surgery can now be performed with confidence without the use of the tourniquet and that many of the local and systemic complications of operating in a bloodless field can be avoided.⁴

K. S. EYRES, MD, FRCS Orth
I. SHARPE, FRCS
Princess Elizabeth Hospital
Exeter, UK.
A. ABDEL-SALAM, FRCS
Nuneaton, UK.

1. Wakankar HM, Nicholl JE, Koka R, D'Arcy JC. The tourniquet in total knee arthroplasty: a prospective, randomised study. *J Bone Joint Surg [Br]* 1999;81-B:30-3.
2. Worland RL, Arredondo J, Angles F, Lopez-Jimenez F, Jessup DE. Thigh pain following tourniquet application in simultaneous bilateral total knee replacement arthroplasty. *J Arthroplasty* 1997;12:848-52.
3. Parmet JL, Horrow JC, Berman AT, et al. The incidence of large venous emboli during total knee arthroplasty without pneumatic tourniquet use. *Anesth Analg* 1998;87:439-44.
4. Abdel-Salam A, Eyres KS. Effects of tourniquet during total knee arthroplasty: a prospective, randomised trial. *J Bone Joint Surg [Br]* 1995;77-B:250-3.

Authors' reply:

Sir,

We thank Messrs Eyres, Abdel-Salam and Sharpe for their letter and have noted their comments with interest.

Our study¹ had almost the same structure as that of Abdel-Salam and Eyres², but we used many strict exclusion criteria for the selection of patients such as rheumatoid arthritis, diabetes, etc, to reduce the confounding factors. Our results do not match those of Abdel-Salam and Eyres and the selection of patients may be one of the reasons. Both studies had small numbers of patients with the obvious limitations as a result.

All our patients were under the care of one consultant in one hospital and there were five surgeons (including two registrars and two associate specialists) following the predecided protocol. All trainee surgeons were supervised. When operating without a tourniquet surgeons considered bleeding to be a nuisance in seven knees and noted moderate to heavy bleeding in the form of constant oozing in six. In none of these cases did the tourniquet need to be applied and the surgery was completed satisfactorily.

All wounds had healed at the final review at four months. The patient with a small leaking wound had no evidence of deep infection and in our view this case does not raise concern regarding the use of a tourniquet especially since the wound had healed at four months. We would again draw attention to the fact that our patients had to satisfy exclusion criteria thereby reducing confounding factors. We entirely agree that surgery can be safely performed without a tourniquet especially in the presence of the many risk factors quoted; all patients with such problems were excluded from our study. In their absence, however, we have found it safe to use a tourniquet.

J. C. D'ARCY, FRCS
H. M. WAKANKAR, MCh Orth, FRCS Orth
Eastbourne District General Hospital
Eastbourne, UK.

1. Wakankar HM, Nicholl JE, Koka R, D'Arcy JC. The tourniquet in total knee arthroplasty: a prospective, randomised study. *J Bone Joint Surg [Br]* 1999;81-B:30-3.
2. Abdel-Salam A, Eyres KS. Effects of tourniquet during total knee arthroplasty: a prospective, randomised study. *J Bone Joint Surg [Br]* 1995;77-B:250-3.

Sir,

We read with interest the recent study by Wakankar et al¹ in the January 1999 issue entitled 'The tourniquet in total knee arthroplasty'. The very low incidence of deep-vein thrombosis (DVT) in this study (1/51; 1.96%) is quite remarkable when compared with the 50% to 84% reported in other series.²⁻⁴ Patients undergoing