■ INFOGRAPHIC

Infographic: Time to reconsider the routine use of tourniquets in total knee arthroplasty surgery

AN ABRIDGED VERSION OF A COCHRANE SYSTEMATIC REVIEW AND META-ANALYSIS

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Many surgeons choose to perform knee arthroplasty surgery with the aid of a tourniquet.[1,2] A tourniquet is a device that fits around the leg and restricts blood flow to the limb. Until recently, the use of tourniquets has largely focused on the potential benefits, with little thought of the possible harms. We present an abridged version of a Cochrane systematic review, exploring the benefits and harms of tourniquet use in knee arthroplasty surgery.[3] We included 41 randomized controlled trials with 2,819 participants.

Serious adverse events were significantly more common in the tourniquet group; 53/901 in the tourniquet group versus 26/898 no tourniquet groups (risk ratio 1.73; 95% confidence interval (CI) 1.10 to 2.73). The mean pain score on the first postoperative day was 1.25 points higher (95% CI 0.32 to 2.19) in the tourniquet group. Overall blood loss did not differ between groups (mean difference 8.61ml; 95% CI -83.76 to 100.97). The mean length of hospital stay was 0.34 days longer in the group that had surgery with a tourniquet (95% CI 0.03 to 0.64) and the mean duration of surgery was 3.7 minutes shorter (95% CI -5.53 to -1.87).

The results demonstrate that the use of a tourniquet in knee arthroplasty surgery is associated an increased risk of serious adverse events and higher levels of postoperative pain. Our estimates suggest that a change in practice among surgeons to not using a tourniquet could potentially prevent around 2,000 serious adverse events per year in the UK alone.

Further research is required for outcomes such as function, implant survival, and quality of life. However, there is currently no evidence to suggest any major advantage to the patient with the use of a tourniquet. These results make it difficult to justify the continued use of a tourniquet in knee arthroplasty surgery.

References

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doi:10.1302/0301-620X.103B5.BJJ-2021-0545 $2.00

Bone Joint J
2021;103-B(5):828-829.

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Funding statement:
No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

Acknowledgements:
We would like to acknowledge the following members of the Safety and Feasibility Evaluation of Knee Replacement Surgery (SAFE-TKR) Study Group: Ms Bushra Rahman, Ms Jaclyn Brown, Mr James Smith, Mrs Christine Goulden, Mrs Jan Dixon, Dr Nele Demeyere and Professor JM Wilkinson.
We would like to thank the Cochrane Musculoskeletal grou,p who provided continuous advice and guidance to ensure the work was carried out the highest of standards. The Musculoskeletal group provided guidance throughout all stages of this review from conception through to completion of the full Cochrane review.
We would also like to acknowledge the contribution of Andrew Sprowson, who died unexpectedly on 13 March 2015. Andrew was one of the main collaborators on this project and had made a significant contribution to the study design and in securing research funding. Andrew was an academic orthopaedic surgeon who was dedicated to improving evidence-based care in his field. He was an exceptionally enthusiastic researcher and surgeon and is greatly missed by his academic and clinical colleagues.

The Bone & Joint Journal
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Time to reconsider the routine use of tourniquets in total knee arthroplasty surgery

Ahmed et al. Bone Joint Journal, May 2021

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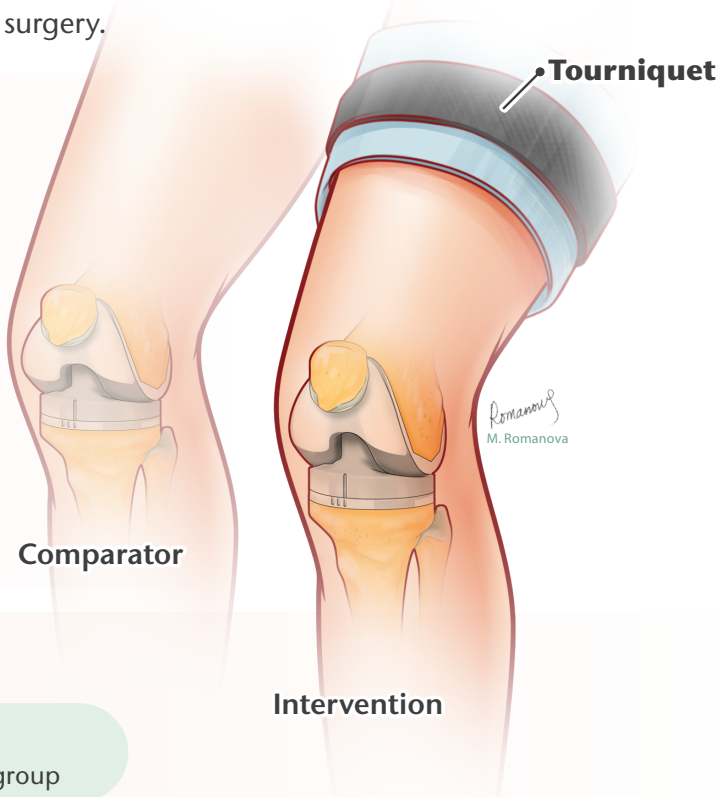
This Cochrane systematic review and meta-analysis investigates the risks and benefits of tourniquet use in total knee arthroplasty (TKA) surgery.

SCREENING

798 studies

41 randomized controlled trials
2,819 participants



META-ANALYSIS

Favours no tourniquet

Serious adverse events:
1.73x increased risk in tourniquet group

- Deep vein thrombosis
- Pulmonary embolus
- Infection
- Nerve damage
- Reoperation
- Mortality

Pain scores:
Mean 1.25 higher in tourniquet group on a 0 to ten-point scale

Length of hospital stay:
Mean 0.34 days longer in tourniquet group

Favours tourniquet

Duration of surgery:
Mean 3.7 minutes faster

No difference

Blood loss:
Mean difference 8.61 ml

TKA surgery with a tourniquet is associated with increased risks of serious adverse events, higher levels of postoperative pain, and a marginally longer duration of stay. These results make it difficult to justify the routine use of a tourniquet in TKA surgery.