

Flying in the Early Postoperative Period following Lower Limb Arthroplasty - Is it Safe?

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INTRODUCTION:

Lower limb arthroplasty and air travel are both regarded as risk factors for the development of venous thromboembolism (VTE). There is limited evidence to guide management of patients flying in the perioperative period, where prolonged immobilization coupled with relative hypoxia increases VTE risk. Our high volume arthroplasty center routinely flies patients on short haul flights to and from the hospital to allow their surgery to be undertaken. We sought to determine whether these patients were at increased risk of VTE compared with patients travelling to our facility by road.

METHODS:

A retrospective cohort study was conducted, examining outcomes for patients attending our institution who had flown in the perioperative period with those that had traveled to the hospital by road. Electronic patient records were perused to determine baseline demographics including age, sex, and BMI. Data regarding incidence of VTE was recorded from these records and corroborated through a national reporting system for complications following lower limb arthroplasty. Statistical analysis was conducted using Student's t-test for continuous variables and the Chi-squared test for proportions. The study was registered with the local Clinical Governance department and conducted according to our institutional guidelines.

RESULTS:

All procedures were conducted in the calendar years 2013-15. A total of 243 patients (119 total hip arthroplasty and 130 total knee arthroplasty) travelled by air an average 6 days following arthroplasty (range 1-24 days). The average flight time was 74 minutes (range 40 – 85 minutes). A total of 5,498 patients travelled to the hospital by road (2,739 total hip arthroplasty and 2,759 total knee arthroplasty). No significant difference was observed in baseline demographics between the groups. All patients received chemical and mechanical thromboprophylaxis postoperatively according to institutional guidelines. Four VTE events (1.65%) were recorded in the flight group, while 32 events (0.58%) were recorded in the control group. There was a statistically significant difference ($p < 0.05$) in the VTE rate between groups.

DISCUSSION AND CONCLUSION:

To our knowledge, this is the first study to highlight that short haul air travel in the perioperative period may increase the risk of VTE. Further investigation, in the form of prospective study of matched groups, may be required to quantify this risk. An expanding evidence base will allow development of robust guidelines to direct the management of such patients.