



## Knee arthroscopy and driving. Results of a prospective questionnaire survey and review of the literature

Charlie LEWIS, Cyril MAUFFREY, Peter HULL, Stuart BROOKS

*From Birmingham Heartlands Hospital, England*

**Orthopaedic surgeons routinely advise patients when to drive after surgical procedures. There are however very few guidelines concerning the return to driving after an orthopaedic operation.**

**We performed a literature search and found very limited studies or research regarding this topic and in particular following arthroscopic surgery. We subsequently conducted a prospective questionnaire survey from one hundred knee arthroscopy patients attending outpatient follow-up clinics. Results showed the advice given to patients was delivered by doctors of differing levels of experience, but interestingly the majority of patients did not know the grade of doctor they were being consented by. Our study has highlighted that the advice given to patients was inconsistent. Patients returned to driving over a variety of time frames from one day to greater than three weeks. No adverse events were reported but 14% chose not to answer this question. We have illustrated the need for thorough consenting, further research in this area, and the development of universal guidelines surrounding the return to driving after surgery.**

**Keywords :** driving ; knee arthroscopy ; knee surgery.

### INTRODUCTION

The UK Driving and Vehicle Licensing Agency (DVLA) have issued in February 2008 guidelines concerning driving after surgical procedures (2). This document clearly states that any decision regarding returning to driving must take into account several issues. These include recovery from

the surgical procedure, recovery from anaesthesia, the distracting effect of pain, impairment due to analgesia (sedation and cognitive impairment), as well as any physical restrictions due to the surgery, underlying condition, or other co-morbid conditions.

The DVLA also stated that it is the responsibility of the driver to ensure that he/she is in control of the vehicle at all times and to be able to demonstrate that is so, if stopped by the police (2).

Drivers should check their insurance policy before returning to drive after surgery (3).

Patients will often ask for guidance regarding return to driving after their surgical procedure and so it is the responsibility of the orthopaedic surgeons to give sensible, safe and if possible evidence based advice to their patients.

There is very little in the literature concerning advice as to when to start driving after knee

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■ Charlie Lewis, MD, Specialist Registrar in Trauma and Orthopaedics.

■ Cyril Mauffrey, MD, Specialist Registrar in Trauma and Orthopaedics.

■ Peter Hull, MD, Specialist Registrar in Trauma and Orthopaedics.

■ Stuart Brooks, MD, Consultant in Trauma and Orthopaedics.

Correspondence : Cyril Mauffrey, 456 Warwick road, B911AG, Solihull, England. E-mail : cmauffrey@yahoo.com

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arthroscopy. Driving reaction times of patients following total knee arthroplasty have been measured, as has the driving reaction time before and after anterior cruciate ligament reconstruction. There is one study that evaluated patients' reaction times under simulated driving conditions before and after right knee arthroscopy. They concluded it was appropriate for patients to delay their return to driving for at least one week.

### MATERIAL AND METHODS

Every patient undergoing elective knee arthroscopy as a day case procedure at our centre within a three month period was asked to participate in the survey.

One hundred patients were recruited. At the two week follow-up appointment all patients were handed and asked to complete a two page anonymous questionnaire comprising of 12 questions. Questions included aspects of the consent, when the patient started driving and whether they experienced any adverse events. The completed questionnaires were collected and the results compiled and analysed.

### RESULTS

The types of arthroscopic surgery performed included partial meniscectomies, chondroplasties, microfracture, diagnostic arthroscopies and "others" which included lateral release and synovectomy (Anterior cruciate ligament reconstruction was excluded). All procedures were carried out by a consultant surgeon (SB) or specialist registrar under direct consultant supervision. Of the 100 patients recruited, 85 underwent a partial meniscectomy, 10 underwent microfractures and 5 synovectomies. The post operative protocol used in all these cases, including following microfractures, included weight bearing as pain allows. Of the 100 patients recruited to the study 90% were drivers of motor vehicles, of which 42% were drivers of automatic motor vehicles. The distribution of surgical site was 13 patients with bilateral procedures, 47 patients undergoing a left knee arthroscopy and 40 patients a right knee arthroscopy.

The consent was carried out by senior house officers (18%), specialist registrars (15%) and consultants (20%). The remainder (47%) of patients did

not know the grade of doctor carrying out the consent.

At the time of the initial outpatient appointment and subsequent listing of the patient for surgery, 65% of patients stated that the issue of post operative driving was addressed. The advice given regarding cessation of driving ranged between two days to four weeks.

On the day of surgery 62% of patients again asked about rules and regulations of driving post procedure.

When patients were asked about whether they had experienced any adverse events after commencement of driving 86% stated no whilst 14% left the form blank.

When patients started driving they were asked whether their first journey was less than 30 minutes, between 30 and 60 minutes or greater than 60 minutes. Eighty six percent started with a short journey, 9 with a journey between 30 and 60 minutes, and three commenced with a trip greater than one hour.

### DISCUSSION

From our results it can be seen that we have gathered the results from patients with a variety of knee pathologies but in all cases surgery was short and under general anaesthesia and as a day case procedure. The majority of patients as would be expected were drivers and almost half of the patients were drivers of automatic vehicles.

During the consent process it has become apparent that the patients largely do not know who was giving the advice and the experience of that person.

Many of the patients raised the questions surrounding driving at the outpatient department prior to being added to the waiting list (65%).

Again 62% asked on the day of surgery about driving post procedure. This is clearly an important issue of safety to these patients. No patient stated that there were any adverse events after they had commenced driving. Fourteen percent however left this question blank. Can we infer from this that perhaps some experienced an adverse event but did not wish to report it ?

In the case of drivers wishing to drive after surgery, they must decide after discussion with their doctors when it is safe for them to resume driving. It is also recommended by the DVLA that the driver should check with his/her insurer before commencing driving. Our study has highlighted that the advice given by orthopaedic surgeons regarding post operative driving after knee arthroscopies is inconsistent.

When assessing the ability of a patient to return back to driving much of the assessment lies with the driver being able to perform an emergency stop or his/her driving reaction time. When literature searches are performed there is a paucity of research concerning driving after surgical procedures. Two studies by Colin *et al* (1) and Wright *et al* (9) looked at driving after inguinal hernia repair. Colin *et al* (1) advised patients should refrain from driving for 10 days post surgery. Wright *et al* compared the driving reaction time after open and endoscopic hernia repairs. They found that patients could return to driving safely at one week (9).

One of the weaknesses of our study is in relation to the lack of stratification by procedure performed. In our institution, patients who undergo microfractures are not kept strictly non weight bearing for 6 weeks and therefore we did not feel the need to restrict this group of patients more than the meniscectomy group. We do acknowledge though that this information might have changed the results of the study.

Spalding *et al* (8) measured the driver reaction times of forty patients before total knee replacement and at 4,6,8, and 10 weeks after the operation. They concluded that patients should not drive for at least eight weeks after a right total knee replacement. Similar findings were reported for total hip replacements investigated using a simulated driving control system (6).

A study by Nguyen *et al* (7) assessed driving reaction time before and after anterior cruciate ligament reconstruction. They recruited seventy three patients and assessed reaction times using a computer linked automobile simulator. There was a

group of surgical patients and a control group. Results showed it took six weeks for the driving reaction time of the right ACL group to be equivalent to that of the control group. It took two weeks for the left ACL group.

Hau *et al* 2000 (4) assessed thirty right knee arthroscopies again using a computer linked car simulator. They concluded that it is appropriate for patients to return to driving after one week.

We have identified serious deficiencies in the advice given to patients. Further research should be dedicated to ascertain the optimum time to drive after not just orthopaedic but other surgeries. This will facilitate the transition of important, uniformly agreed information from doctors, nurses and physiotherapists to the patients and ultimately improve the safety of not only the patient but also the general public.

## REFERENCES

1. Colin JF. Driving after hernia surgery *BMJ* 2001 ; 322 (7288) ; 735-736.
2. Drivers Medical Group DVLA. Guide to the current standards of the fitness to drive. Swansea : Driver and vehicle Licensing agency, Feb 2008. <http://dvla.gov.uk>
3. Giddins GE, Hammerton A. "Doctor when can I drive ?" a medical and legal view of the implications of advice on driving after injury or operation. *Injury* 1996 ; 27 : 4957.
4. Hau R, Csongvay S, Bartlett J. Driving reaction time after right knee arthroscopy *Knee Surg Sports Traumatol, Arthrosc* 2000 ; 8 : 89-92.
5. Ismail W, Taylor SJ, Beddow E. Advice on driving after groin hernia surgery in the United Kingdom : questionnaire survey. *BMJ* 2000 ; 321 : 1056.
6. MacDonald W, Owen JW. The effect of total hip replacement on driving reactions. *J Bone Joint Surg* 1988 ; 70-B : 202-205.
7. Nguyen T, Hau R, Bartlett J. Driving reaction time before and after anterior cruciate ligament reconstruction. *Knee Surg Sports Traumatol, Arthrosc* 2000 ; 8 : 226-230.
8. Spalding T, Kiss T, Kyberd P, Turner-Smith A, Simpson AHRW. Driver reaction times after total knee replacement. *J Bone Joint Surg* 1994 ; 76-B : 754-756.
9. Wright DM, Hall MG, Paterson CR, O'Dwyer PJ. A randomised comparison of driver reaction time after open and endoscopic tension free inguinal hernia repair. *Surg Endosc* 1999 ; 13 : 332-334.