

# Car Accidents After Ambulatory Surgery in Patients Without an Escort

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Occasionally, ambulatory surgical patients present without an escort for their procedure. This creates a dilemma for caregivers, and allowing patients to drive may have an impact on their safety. The Canadian Medical Protective Association is a mutual defense organization for 95% of Canadian physicians. The national database is a unique and extensive repository of medico-legal data. We scanned this database for malpractice patients who were discharged after an ambulatory surgery procedure and allowed to drive home with a poor outcome. From this database, two malpractice cases of patients who were discharged without an escort after an ambulatory surgical procedure were reported. Both had a car accident and sustained serious injuries. Based on this we do not recommend discharge without an escort after general anesthesia, regional anesthesia, monitored anesthesia or sedation. Driving after ambulatory surgery cannot be considered safe and caregivers need to verify a safe ride home.

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**A**mbulatory surgery and anesthesia have a remarkable safety record. This success may be due to careful preoperative selection of appropriate patients and thorough evaluation of surgical procedures regarding their suitability as ambulatory surgical procedures.<sup>1,2</sup> Modern short-acting anesthetics with a rapid recovery have also contributed to this success. In many countries, anesthetic and surgical associations have developed clear guidelines aiding the selection of patients and procedures.<sup>3-5</sup> Appropriate postoperative care has also evolved to maintain this high standard of safety.<sup>6</sup> With supporting evidence from audits and research, the limits of what is considered possible and appropriate on an outpatient basis have been extended considerably over recent years.<sup>1,2,7</sup> Financial factors and expectations from patients and other doctors may put physicians under pressure to extend these boundaries further.

One study reported that 0.2% of ambulatory surgical patients do not have an escort.<sup>8</sup> Another survey indicated that 11% of anesthesiologists would be willing to anesthetize patients without an escort.<sup>9</sup> The Canadian Medical Protective Association (CMPA) is a

mutual defense organization for physicians who practice in Canada. It is funded and operated on a not-for-profit basis for physicians, by physicians, and its membership of more than 66,000 comprises about 95% of Canadian physicians. The CMPA is uniquely positioned to see practice pitfalls that can result in litigation. The national database is a unique and extensive repository of medico-legal data and information. In a 10-yr case review of litigations in ambulatory surgery, three malpractice cases of car accidents after ambulatory surgery were identified in patients without an escort. One is a case of intranasal midazolam for sedation. This case was settled out of court and did not go to trial. The actual arrangements are not within the public domain. From this national database, we report two malpractice cases of patients who were discharged without an escort after an ambulatory surgical procedure and both had car accidents.

## MALPRACTICE CASES

### First Malpractice Case

A 44-yr-old man sustained an injury to his right knee. He was a healthy ASA I patient with no medical history, no mental illness, no history of alcohol use or history of a motor vehicle accident. He did have a history of occasional use of marijuana. He was referred to an orthopedic surgeon who diagnosed a tear of the lateral meniscus and recommended an arthroscopy. During the initial consultation, the surgeon informed the patient that he would have to arrange transportation home on the day of the procedure, and that an adult would be required to accompany him home.

On the day of the procedure, the patient presented to the ambulatory surgery unit without an escort, claiming that a friend who had agreed to accompany him was now unavailable. The nursing staff reaffirmed the need for a safe means of transportation home but the patient was anxious to proceed with surgery. The orthopedic surgeon and the anesthesiologist were informed and both physicians decided

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that the procedure could be performed under local anesthesia. The patient received an injection of 20 mL lidocaine 1% and 20 mL bupivacaine 0.5% as a local anesthetic. Intraoperatively, he became agitated and required sedation. He was given midazolam 2 mg IV and fentanyl 50 µg IV as well as increments of propofol to a total dose of 50 mg IV. He remained conscious and alert at all times during the procedure.

In the postanesthesia care unit (PACU), he was able to eat and walk before he was allowed to leave. While driving himself home, the patient had an accident by driving off the road. This accident left him quadriplegic. In court, the patient stated that he stopped off the road to doze for a short period of time and resumed driving shortly before the accident. No other persons or vehicles were involved in the accident. No evidence of alcohol or drug use was noted by the police arriving at the scene. The anesthesiologist was found by the court to be negligent in allowing the patient to drive home after sedation and the orthopedic surgeon was not found guilty.

### Second Malpractice Case

A 35-yr-old woman was scheduled to undergo dilation and curettage for an early pregnancy under local anesthesia by a gynecologist. She was a healthy ASA 1 patient with no medical history, no mental illness, no history of alcohol use or history of a motor vehicle accident. On the day of surgery, the prearranged babysitter did not arrive to take care of the young children. As a result, the husband had to stay home to attend to the children. The patient arrived for her ambulatory surgery by herself. She was upset and crying. The gynecologist ordered oral lorazepam 1 mg as a premedication, which was given by the preoperative nurse.

The patient underwent a dilation and curettage under local anesthesia with no other medication. During her stay in the PACU, she was offered a ride home by the PACU nurse who happened to know her personally. The patient refused and drove home alone. Subsequently, she had a car accident with serious injury. She sued the gynecologist and the preoperative nurse who gave her the premedication, not the PACU nurse. Both the gynecologist and the preoperative nurse were found to be negligent for allowing the patient to drive herself home after sedation. A second car was involved in the accident and the injured parties in the second car also sued and were compensated.

## DISCUSSION

We describe two malpractice cases in which patients were discharged without an escort after an ambulatory surgical procedure and both had a car accident. The practice of discharging patients without an escort is rare in ambulatory surgery units but does have an impact on patient safety. A study in our institution showed that 0.2% of patients presented without an escort on the day of the procedure.<sup>8</sup> Two groups of patients were identified. The first group ( $n = 24$ ) was comprised of patients who had no escort. The second, a far larger group ( $n = 36$ ) was comprised of patients who claimed to have an escort and only after the procedure did it become clear that that was not the case.

In a survey of anesthesiologists in Canada, 11% were willing to anesthetize patients who did not have an escort.<sup>9</sup> The low rate of major complications after ambulatory procedures is likely to have influenced that decision, but the finding is nevertheless unexpected.

Discharge without an escort is contrary to guidelines issued by professional bodies like the American

Society for Anesthesiologists, the Canadian Anesthesiologists' Society, the Association of Anesthetists of Great Britain and the Australian Day Surgery Council.<sup>3-6</sup> These recommendations are supported by the evidence demonstrating that psychomotor impairment and cognitive deficits are common in the postoperative period.<sup>10-13</sup> Recovery from ambulatory anesthesia can be divided into three stages. Early recovery refers to the period of awakening and return of vital reflexes. Intermediate recovery refers to the time until home readiness. Criteria for discharge include stable vital signs and the ability to walk.<sup>14</sup> Late recovery occurs at home and entails full physiological and psychological recovery. In clinical studies, late phase recovery can be assessed with psychological or psychomotor tests.<sup>14</sup> This means that most patients are not fully recovered and back to their normal functional status by the time they meet discharge criteria, even after very short procedures.<sup>15-17</sup> Home readiness is not equivalent to street fitness. Furthermore, these national guidelines made no distinctions between sedation, regional anesthesia, and general anesthesia. Patients require escorts to go home regardless of the type of anesthesia.

### Driving After Ambulatory Surgery

A major concern for patients without escort is that they will drive home after ambulatory surgery. The Canadian Anesthesiologists' Society, the Association of Anesthetists of Great Britain, and the Australian Day Surgery Council recommend patients not drive for 24 h, while the American Society for Anesthesiologists guidelines do not comment on the issue of driving. These guidelines are mostly based on older studies investigating longer acting drugs that are no longer commonly used in ambulatory anesthesia.<sup>18,19</sup>

Several studies investigated the effects of modern, short-acting anesthetic.<sup>12,15,20</sup> Thapar et al.<sup>15</sup> found significant initial impairment of psychomotor function with various combinations of commonly used sedative drugs (propofol, midazolam, fentanyl). Combinations that included midazolam had the most long-lasting effects, but after 3 h none of the regimens showed any relevant effect.

Sinclair et al.<sup>13</sup> were unable to demonstrate significant effects of a balanced general anesthetic, propofol, fentanyl, desflurane, and nitrous oxide on performance in a driving simulator 2 to 24 h after anesthesia. The study was done in volunteers who did not have surgery and did not receive any analgesics or experience pain.

Chung et al.<sup>21</sup> compared the driving performance (in a simulator) in patients who had their surgery performed under general anesthesia with healthy, nonanesthetized controls. Under these more realistic circumstances, simulated driving in patients was impaired both pre- and postoperatively. Performance was worst 2 h postoperatively, a critical time, as many patients meet discharge criteria within 2 to 3 h. Within 24 h, driving simulation performance had returned to

normal.<sup>21</sup> It is important to note that patients were also impaired preoperatively versus control. This may mean that the stress of surgery or possible lack of sleep may have an influence on driving performance in addition to the effects of the anesthetic. The results of this trial support the current recommendations not to drive for 24 h after ambulatory surgery. The fact that performance levels were at their worst around the time of discharge supports the recommendation to send patients home accompanied by an escort who will drive for them.

Surgery may also impair the ability of the patient to drive. In a study of patients undergoing total knee arthroplasty for osteoarthritis, the brake response time returned to normal at 3 wk after surgery.<sup>22</sup> Most patients undergoing total knee arthroplasty are recommended to return to driving 6 wk after surgery. One of our patients had right knee arthroscopy. The surgery itself, even without the use of sedation, may have affected the patient's ability to properly use the brake pedal.<sup>22</sup> The degree of functional recovery in patients after surgery may be related to the specific type of surgery as well.<sup>23</sup> This may have a direct influence on the daily function and recovery of the patients in addition to the residual effects of anesthetics. Physical impairment due to pain or residual motor block after local or regional anesthesia will further aggravate this and may contribute to difficulties in performing activities of daily living. Therefore, patients are advised not to drive or operate machinery for a period of time after surgery.

### Patient Compliance with Postoperative Instructions

Two surveys assessed patient compliance with postoperative instructions.<sup>24,25</sup> Correa et al.<sup>24</sup> interviewed 750 patients via a telephone call 24 h after the operation. All had been advised not to drive for 24 h and to have a companion stay with them overnight. Four percent of patients did drive within the 24-h period and 4% of patients were alone overnight despite being escorted home. Cheng et al.<sup>25</sup> surveyed 240 ambulatory patients and found that 1.3% spent the night alone and 4.1% drove within 24 h. These two studies suggest that patient compliance has improved, as previous studies showed that up to 31% went home without an escort and up to 73% of patients drove within 24 h.<sup>26</sup> This encouraging result may reflect the success of improved verbal and written postoperative instructions. Nonetheless, significant numbers of patients still do not follow postoperative instructions. In both studies, 4% of patients drove within 24 h.

While ambulatory surgical units can verify the presence of an escort at discharge, it is impossible to ensure that someone will stay with the patient at home during the night or that recommendations regarding driving are adhered to. Hence, it is important that patients have a clear understanding what the potential hazards are and why they are asked to comply with the recommendations.

### Recommendations

These two malpractice cases from the CMPA national database illustrate the potential hazards associated with impaired mental, and possibly physical disability after surgery and anesthesia or sedation.

Many health care professionals may not have realized the potentially disastrous consequences of patients returning home unaccompanied after surgery. Anesthesiologists may wrongly believe that the short-acting anesthetics will have worn off by the time of the discharge or the amount of the sedation is too small to impact the psychomotor function of the patients. Education of surgeons, anesthesiologists and nurses regarding the importance of escorts is essential to the success of the discharge policy.

If no known escort is available before surgery, the elective procedure should be cancelled or patient should be admitted overnight. In the case of an escort not being available after anesthesia is given, elective hospital admission can be arranged. Alternately, volunteers or individuals paid to accompany these patients home or arranged cab rides can be made. It is the obligation of the caregiver not to allow these patients to drive home after anesthesia or sedation. These patients should be escorted to the cabs by a nurse to ensure that they do not drive home themselves. In addition to the cab ride, we recommend that patients sign a waiver of discharge against medical advice. This way, written information is given to the patient explaining why discharge is potentially hazardous and what consequences may arise from leaving without an escort. This is in addition to the written postoperative instructions specific to their procedure that patients receive upon discharge. These instructions should explain what symptoms can be expected after their particular procedure and how to respond should complications occur.

The discharge of patients without an escort after ambulatory surgery is an important issue. Complications can arise after surgery under general anesthesia, regional anesthesia, monitored anesthesia care, or sedation. Discharge without an escort after general anesthesia, regional anesthesia, monitored anesthesia, or sedation is not recommended. From the standpoint of anesthesia societies and the medico-legal system, patients should not receive any anesthesia or sedation and then be allowed to drive home. It is the obligation of the caregiver either to cancel the case, admit the patient to hospital or to arrange for a ride home. Driving after ambulatory surgery cannot be considered safe. As part of quality improvement measures, it is important for hospitals to implement policies that aim to avoid discharge with no escort. This serves to enhance patient safety and ensures that we can provide the best care possible.

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