

## **Anesthesia for Hepatobiliary and Transplant Surgery**

Institution: McGill University Health Center  
Department: Department of Anesthesia  
Main location: Royal Victoria Hospital  
Type of fellowship: Clinical and clinical research  
Program director: Thomas Schrickler MD PhD

### 1. Fellowship Information

Number of Positions: one

Duration of fellowship: one or two years

Note: only one fellow will be accepted for any given year, i. e.  
If a fellow commits to a two-year-term, no second fellow will be accepted for the second year.

### 2. Site Description

The Royal Victoria Hospital (RVH) is a tertiary care hospital affiliated with McGill University. It is home to a busy hepatobiliary surgical program with seven active surgeons. Procedures include major liver resections (~100/a), Whipple procedures (~40/a) and complex reconstructive bile duct surgery. The solid organ transplantation program serves patients undergoing liver (~50/a), cadaver kidney (~100/a), living related kidney (~30/a) and combined kidney-pancreas transplants (~5/a). State of the art anesthesia care and innovative research is being carried out by a group of 21 staff anesthesiologists, all fellowship trained members of the McGill Faculty of Medicine.

### 3. Fellowship Description

The hepatobiliary anesthesia fellowship is primarily intended for anesthesiologists who wish to master the anesthetic management of patients requiring complex hepatobiliary procedures and solid organ transplantation. Hence fellows will be responsible for providing anesthetic care in this patient population and be on call for emergency transplantations.

In addition, fellows are expected to engage in ongoing clinical research in this field. Fellows committed to a two-year term will have the opportunity to conduct their own projects under supervision by a senior investigator.

The fellows are also expected to participate in the CME program and the teaching activities offered by the McGill Department of Anesthesia and the Faculty of Medicine.

#### 3.1. One-Year-Fellowship

During the 12 months the fellow will acquire the following skills:

##### 3.1.1. Medical Expert

The fellow will acquire the technical skills and knowledge required for the highly sophisticated perioperative management of patients undergoing complex hepatobiliary and transplant procedures at the RVH.

In addition to basic skills related to airway management and establishing intravenous access, technical skills include:

- insertion and management of invasive arterial monitors
- insertion and management of central lines
- insertion and management of pulmonary artery catheters

- insertion and management of non-invasive cardiac output monitors
- insertion and management of thoracic epidural catheters for perioperative anesthesia and analgesia

In regards to the acquisition of medical knowledge the fellow will gain a thorough understanding of the pathophysiology and anesthetic management of:

- hepatic failure
- renal failure
- arterial and venous clamping and unclamping during liver transplantation
- hepatic malignancy
- postoperative pain
- immunosuppression
- perioperative fluid management
- recognition and management of acute hemorrhage
- pharmacological management of hypotension

### 3.1.2. Communication and Collaboration

The fellow will be expected to integrate within a multidisciplinary team dedicated to the perioperative management of transplant and hepatobiliary surgical patients. This will include the ability to communicate and delegate effectively with anesthesia technicians, residents and nurses in the operating room, in the post anesthesia care unit (PACU) and the intensive care unit (ICU).

### 3.1.3. Manager

The fellow will be expected to manage their time effectively and to responsibly participate in the daily operating room activity and in on call transplant activity at the RVH.

### 3.1.4. Health Advocate

The fellow will be expected to advocate for patients in all aspects of their care.

### 3.1.5. Scholar

The fellow will be expected to interact with residents and medical students by sharing responsibility for anesthetic patient care.

The fellow will be expected to participate in ongoing research projects in in hepatobiliary and transplant surgery.

The fellow will be asked to frequently present on relevant topics at Grand Rounds or other McGill Anesthesia teaching events.

### 3.1.6. Professional

The fellow will be expected to serve as a role model of ethical and compassionate anesthesia service and to learn to accept responsibility for his/her actions and patient care.

## 3.2. Two-Year-Fellowship

The two-year-fellowship will ensure that the fellow acquires the knowledge and competencies as outlined in section 3.1. as well as the following skills:

### 3.2.1. Medical Expert

The goal of the two-year fellowship program will be to ensure that the fellow becomes an expert in the management of transplant and hepatobiliary surgery, with the expectation that they will be returning to their home institution to become a leader in this field.

Technical skills: the technical skills obtained in the first year will be further refined and deepened in the following year. The ability to trouble shoot and promptly perform interventions in critical situations, under limited supervision, will be developed and enhanced.

Medical knowledge: in addition to the intraoperative management of hepatobiliary patients, the fellow will be expected to expand his/her knowledge concerning perioperative care, i.e. preoperative assessment and optimization, and postoperative management.

A deeper understanding of the interactions between immunosuppression, anesthetic drugs and graft survival will be obtained.

### 3.2.2. Communicator

The fellow will further improve his/her communication and collaboration with the hepatobiliary surgeons as well as anesthesia colleagues and facilitate the development of specific patient care plans. The completion of a research project will provide the opportunity to present and share research findings with fellow anesthesiologists, scholars and students.

### 3.2.3. Manager

The fellow will gain the confidence required to effectively lead a team that manages the anesthetic care for patients undergoing hepatic/renal transplants, and major hepatobiliary cancer resections.

### 3.2.4. Scholar

Only fellows committed to a two-year term will be given the opportunity to conduct their own research projects. Under the supervision by a senior investigator the fellow will take a clinical research project from initiation to completion, i.e. apply for REB approval, develop and implement patient recruitment strategies, acquire, organize and analyze all data obtained.

The fellow will be asked to present these results at Grand Rounds, teaching and research events organized by the McGill Department of Anesthesia and/or national or international meetings such as the annual conference of the Canadian Anesthesiologists Society or the American Society of Anesthesiologists, and publish a manuscript in a peer reviewed journal.

Ongoing research projects at the Department of Anesthesia are:

- defining the best fluid replacement strategy in patients undergoing kidney transplants
- opioid sparing and the inflammatory response to major liver cancer resections
- the effect of tight glycemic control on infectious complications after hepatobiliary cancer surgery
- fluid restriction and outcomes after major liver resections

Departmental funds are available to support these activities.

The fellow will also acquire the skills to effectively supervise and teach residents and other trainees who are rotating through this specialty.

### 3.2.5. Professional

Successful completion of a two-year-term will increase the fellow's competence, confidence, and, ultimately, the level of professionalism.

## 4. Evaluation

The fellow's performance will be continuously evaluated with respect to the competencies described above. Official evaluations will be completed every three months.