

Name of Institution:

McGill University Health Centre (MUHC)

Location:

Glen and Jewish General Hospital sites

Type of Fellowship:

Clinical fellowship in interventional cardiology, specifically in Chronic Total Occlusion (CTO) and other complex percutaneous interventions (PCI).

Program Information:

Number of fellowship positions requested

One fellow per year will be accepted in a two-year fellowship program. The CTO fellow will be counted as one additional fellow to the two interventional cardiology fellows currently accepted in the cardiology program. If only one interventional fellow is accepted during a given year, a second CTO fellow could be accepted (again for a total of three maximum).

The fellowship will be offered to Quebecers, other Canadians and Foreigners. Candidates will be evaluated through an individual interview and based on their current CV and letters of recommendations. We will evaluate candidates from one of the Exchange Programs with McGill if they meet all the other requirements.

At the present time, no funding can be offered to candidates. Acceptable Scholarships can be granted by a government, a scientific or international organization, a University, Faculty of Medicine. All other scholarships (for example, self-funding) will be refused. Unfunded training is not possible. The minimum acceptable bursary is the equivalent of the R-1 Salary (approximately \$43,000 dollars per year). Additionally scholarships must cover the tuition fees (up to \$29,000/year) and other student fees, as stated here: <http://www.mcgill.ca/student-accounts/tuition-charges/fallwinter-term-tuition-and-fees/graduate-fees>

Academic affiliation

McGill University, Montreal, Quebec, Canada

Name of hospitals involved in training

McGill University Health Center (MUHC), with a strong and growing collaboration with the Jewish General Hospital (JGH) (Dr. Dominique Joyal)

% time spent by the fellow in each institution

More than 80% in MUHC, less than 20% at the JGH

Background

Chronic total occlusion (CTO) percutaneous coronary intervention (PCI) has emerged over the last 5 years as a true sub-specialty of interventional cardiology, with specificities that extend far beyond regular PCI. Most interventional cardiology program are aiming

to provide patients with the highest quality services in regular PCI, but also in structural heart disease intervention and now in complex coronary interventions. Consequently, some programs can now offer a training in complex PCI. As of January 2016, Dr. Stéphane Rinfret, who is a world-renowned expert in complex coronary intervention will join the MUHC as Director of Interventional Cardiology. Dr. Rinfret has performed over 530 CTO PCI since January 2010, which corresponds to one of the largest single-operator volume in the world. Dr. Joyal is among the highest-volume operators in Canada with over 250 CTO PCI over the last 5 years.

During the fellowship, the candidate will be exposed to a variety of complex CTO PCI techniques, including the retrograde approach, dissection re-entry techniques, IVUS-guided CTO PCI, techniques that are exclusive to CTO PCI. Moreover, the fellow will be exposed to other complex PCI techniques including unprotected left main PCI, coronary atherectomy, 2-stent bifurcation techniques, and others. The program is aiming at a volume of 150-200 complex PCI per year, which will be among the highest volume of such interventions in North America. Also, the fellow will be expected to conduct several prospective and retrospective studies under the supervision of Dr. Rinfret, who is a senior research scholar of the FRQ-S, in the field of CTO PCI.

Research activity

The program will be mostly clinical, with 75% of activities in the catheterization laboratory learning the technical skills. However, 25% of the fellow's time will be devoted to research.

Publications

We expect a volume of 2-3 publications per year, mostly from an available dataset of Dr. Rinfret (his own experience) and from a currently recruiting national registry (CCTOP), which is led by Dr. Rinfret.

Mission

The mission of this fellowship will be to train the next generation of interventional cardiologists to be able to tackle difficult coronary anatomies, especially chronic total occlusions. CTOs are very frequent, and will be present in 20% of patients undergoing catheterization. Those lesions are undertreated. Yet, they are associated with substantial symptoms, and also increase mortality. Still considered the last frontier of coronary intervention, there are an increasing number of interventional cardiology program now providing training in CTO PCI.

How intended fellowship will enhance residency training

Our program will be one of the very few available world-wide to provide such an advanced training. While CTO PCI is performed less than 10 times per year by most operators, the MUHC will have one faculty interventional cardiologist who is dedicated to that sub-specialty and will perform over 150 of such procedure per year, with the collaboration of Dr. Dominique Joyal, who has been trained by Dr. Rinfret, and been a close collaborator since 2010. The residency program will strongly benefit from being exposed to high-level coronary interventions, for the benefits of patients. Residents will also be offered to participate in research projects, in collaboration with fellows.

Fellowship Program Director

Stéphane Rinfret, MD, SM

Names of the Teaching Faculty

Stéphane Rinfret, MD, SM
Dominique Joyal, MD
Sonny Dandona, MD

Roles

Dr. Rinfret will be overseeing the fellow's technical training and research program. Dr. Joyal and Dandona will be assisting Dr. Rinfret with the objectives of maximizing the fellow's learning and publication output.

Summary of clinical practice

The new MUHC Glen Site provides state of the art facilities for complex coronary intervention, and new laboratories. It has a volume of close to 4000 catheterization procedures per year, which should identify around 600-800 CTOs per year. Assuming only a 25% referral rate for PCI among that volume, a final CTO PCI volume of 150-200 cases is expected. Cases will be identified through a central database and by the interventional cardiologists and referred for PCI opinion to the CTO team. All the techniques currently employed in CTO PCI will be taught, including the antegrade approach using novel guidewires, the retrograde approach, dissection and re-entry techniques, and the use of IVUS for such complex procedures. Advanced transradial techniques will be most often employed. Moreover, besides CTO PCI, a variety of complex PCI will be performed as part of the program, including unprotected left main PCI, complex bifurcation PCI, atherectomy procedures.

Major Strengths

This program will be unique in the province of Quebec, as it will allow the fellow to be exposed to a very high volume of complex interventions, performed by a very experienced team of operators.

Academic Facilities

Facilities for clinical and academic pursuit

The Glen Site of the MUHC is a state of the art facility to provide training for those fellows.

Library access, materials relevant to fellowship training

Fellows will be provided with a handbook, edited by Dr. Rinfret, to be published in the fall of 2015 (Springer, UK), that covers all the details of the hybrid approach to CTO PCI. They will also be provided with online access to some teaching applications for CTO PCI, including a retrograde CTO PCI iBook from Dr. James Spratt.

Multimedia learning materials available

The CTOfundamentals.org website is an international online resource dedicated to teach CTO PCI. Dr. Rinfret is one of the founders of the website. Fellows will be requested to take all the online lessons of the 'CTO University' (part of the website), and then will have to participate into the 'CTO community', where they will see and share cases.

Availability of skills if applicable

Fellows will be expected to participate, as all the other general interventional cardiology fellows, in a minimum of 300 PCI per year during the first year of training, while also

participating in the majority of CTO PCI procedures (as first assistants or observers). During the second year, they will be expected to participate in all CTO PCI as first or second assistants.

Fellow Duties and Responsibilities

Call responsibilities to cover service

All fellows will have to share calls at the same frequency as other interventional fellows. The CTO fellow will not be a resident supervisor.

The CTO and Interventional Fellow(s) may be called upon, in times of extreme need, to perform a night or weekend general cardiology resident level call at the MUHC or JGH. This is expected to be very rare and all efforts will be made to minimize its occurrence.

Rotations at various institutions

The CTO fellow will perform the complex procedures mostly at the MUHC. However, as a common program is currently being established with the JGH in collaboration with Dr. Joyal, we expect a growing number of procedures being performed also at the JGH with Drs. Rinfret and Joyal, where the fellow would be welcome to participate.

Outpatient clinic responsibilities need to be outlined

None or very minimal, only for research

Role of the fellow towards residents on service

Participating in interventional cardiology calls and exchanging with the residents

Teaching responsibilities towards residents

In the case of a resident doing a cath lab rotation, the diagnostic catheterization portion would be performed by the resident with a supervising fellow or attending. We will stimulate collaboration between all trainees.

The CTO and Interventional Fellow(s) will be required to give 1-2 teaching sessions/year at the general cardiology residents' Academic Half-Day.

Participation in academic activities involving the residents: seminars, outcome assessment (morbidity and mortality rounds etc.)

All CTO fellows are expected to participate in all division of cardiology rounds. Moreover, all complex non-ad hoc cases will be reviewed the day before the procedure, and a one-hour teaching seminar on the techniques will be provided by Dr. Rinfret on those days.

Support staff available to the fellow: program coordinator, nurse clinician, secretarial

A research assistant working for Dr. Rinfret will be available for the fellow to assist his or her with research duties.

Meetings to be attended by the fellow

Trans-Catheter Therapeutics (TCT), Euro-PCR and US CTO summit

Research productivity and publications expected by the Fellow

As mentioned earlier, the fellow will be expected to submit 2-3 manuscripts per year. In addition, abstract to major meetings will be submitted (2-3 per year).

Curriculum

Intended case load

50-100 complex PCI as a first assistant per year.

Intended Percentage of varieties of cases

75% being CTO PCI, and the others among a variety of complex PCI, including left main PCI, post CABG calcified native coronaries, bifurcations, etc. When performing CTO PCI, a 50% rate of retrograde approach can be expected, as per Dr. Rinfret's experience.

Regular reading materials provided (if any)

CTO PCI handbook by S Rinfret, editor (see previous sections)

Conference weekly schedules

The day before CTO PCI, a detailed review of all cases is done with all the fellows (about one hour duration). Each Friday, various type of cases are reviewed with the other interventional cardiology attending physicians.

Role of the fellow in attending, presenting, supervising, organization

The fellow will attend all procedures and will present cases at interventional cardiology rounds. He will supervise the first-year fellow in a case of a second-year fellow position.