



**SKULL BASE 1 YEAR-FELLOWSHIP PROGRAM  
ACADEMIC YEAR 2019/2020**

The skull base Fellowship program at the University of Insubria, Varese, Italy, is active from 2009 and involves both the Otorhinolaryngological and the Neurosurgical Divisions. The Fellowship Directors are Paolo Castelnuovo, Full Professor and Chairman of the Otolaryngology - Head & Neck Surgery Division, and Davide Locatelli, Associate Professor and Chairman of the Neurological Surgery Division.

*Italian laws do not allow any kind of medical practice on live patients (live surgery, medical examinations) to Foreign Medical Doctors unless their medical degree and post-graduate degree are recognized by the Italian Minister of Health and Italian Minister of School and University and unless they are admitted to the Italian Medical Association (Ordine dei Medici Chirurghi e Odontoiatri).*

**Fellowship period:** 12 months.

**Duration:** from Monday to Friday

from 7:00 a.m. to 1:00 p.m.

from 2:00 to 5:00 p.m.

for approximately 40 weeks (except from National holidays)

Student Fellow registration system:

At the very beginning of the program the candidate will sit for an entrance examination with the Directors of the program who will state the level of knowledge and skills of the candidate.

The student fellow should record his activities into a Log-Book, including information regarding the date, the surgical procedures he observed, the name of the Tutor in charge for him during the day and the scientific activity performed. At the end of every day the Tutors must sign the activity declared by the student fellow on the Log-Book.

The completely-filled Log-Book of the activities should be submitted to the Fellowship Program Directors at the end of every segment of the program in order to obtain the approval for the advancement to the next didactic step.

**Segment 1: BASIC TECHNIQUES**

Period: 3 months

A) Training:

For ENT Fellows the activities are focused on the surgical management of paranasal sinus inflammatory diseases as well as learning of systematic anatomy of the region. Deep anatomical knowledge of the area including surgical landmarks and risky points are the main objectives as well as complications and their management.

For Neurosurgical Fellows the activities are focused on standard approaches to the anterior, middle and posterior skull base, as shown in the tables below.

The post-operative management of the patient with particular attention to endoscopic medications, identification of early and late complications, analysis and solution of patient discomfort and symptoms are other important issues that the fellow need to understand. The student fellow can refer directly to a senior doctor for his needs and in order to check day-by-day his activities and at the end of the day the Tutor will sign the Log-Book filled by the student fellow.



Plan for weekly activities as ENT Fellow:

**Day Activity**

Monday: DAY SURGERY (general anesthesia for inflammatory disease)

Tuesday: DAY SURGERY (general anesthesia for inflammatory disease)

Wednesday: DAY SURGERY (general anesthesia for inflammatory disease)

Thursday: OUT-PATIENTS ENDOSCOPIC MEDICATIONS (for inflammatory diseases) & DAY HOSPITAL MINOR ENDOSCOPIC SURGERY (local anesthesia for minor diseases)

Friday: DAY SURGERY (general anesthesia for inflammatory disease)

Plan for weekly activities as Neurosurgical Fellow:

**Day Activity**

Monday: Full day surgery

Tuesday: Full day surgery

Wednesday: Full day surgery

Thursday: OUT-PATIENTS evaluation

Friday: Full day surgery

By the end of the first quarter candidate will have a tutored anatomical-lab dissection section on a specimen that will be used both sides, and the surgical skills that must be achieved are the followings:

For ENT surgeons:

- Maxillary antrostomy
- Anterior ethmoidectomy
- Frontal sinus approach Draf I-IIa-IIb
- Posterior ethmoidectomy
- Sphenoidal approaches

For Neurosurgeons:

- Frontal, occipital, parietal and temporal approaches
- Pterional approach
- Coronal approach
- Midline posterior fossa approach

B) Scientific training:

The student fellow is required to attend the morning meetings that will be held in English and that will focus on the clinical cases that will be treated on that day and on some other interesting clinical cases. The Candidate will carry on some scientific activities in order to investigate an assigned research field. He should analyze the scientific literature regarding to a given topic and compare it to his experience and to the policies approved by the Skull Base Unit.

During the first 3 months fellowship the Candidate will participate to the following courses at least as an observer (subscription to the courses as participant are possible on his own expenses):

- VI Medtronic's Workshop – Benign Tumors 12-13 March, Varese
- European Diploma in Skull-Base surgery 9-11 April, Paris
- Italian Society Cranial Base courses held in Varese
- Segmento #1 - Corso di Perfezionamento Universitario 07-09 May
- 1<sup>st</sup> VAR-ESS advanced, English, dissection course; 28-30 May

\*Changes in dates and scientific events may take place.



Before the end of the first trimester the student fellow should prepare and discuss a ground-round presentation concerning a selected topic related to the research field assigned by the endoscopic team. At the end of the Segment#1 the Directors of the program, after checking the filled-in Log-Book and the scientific activity carried on by the student fellow, and after having discussed with the Tutors of the Skull-Base team that have followed the student fellow during this period, will decide weather or not the Candidate should pass on the next didactic step.

During the first Segment period the Directors have the possibility to state the candidate's level of knowledge and, weather the candidate shows to be too much trained for the basic level, will decide if he is able to pass on the next educational step sooner than expected.

## **Segment 2: SPECIFIC TECHNIQUES**

Period: 3 months

### **A) Training as ENT Fellow:**

The second didactic step is focused on deeply understanding specific surgical techniques like endoscopic dacriocistorhinostomy, the surgical treatment of septal perforations, frontal sinusotomy Draf type III and endoscopic removal for benign tumors. The post-operative management of these patient with particular attention to endoscopic medications, identification of early and late complications, analysis and solution of patient discomfort and symptoms are other important issues that the fellow need to understand.

For neurosurgical Fellows the activities are focused on more complex approaches to the anterior, middle and posterior skull base, as showed in the following table.

The student fellow can refer directly to a senior doctor for his needs and in order to check day-by-day his clinical and surgical activities and at the end of the daily activity the Tutor will sign the Log-Book filled by the student fellow.

Plan for weekly activities as ENT Fellow:

#### **Day Activity**

Monday: MAIN OPERATIVE ROOM (general anesthesia)

Tuesday: OUT-PATIENT ENDOSCOPIC MEDICATIONS of benign tumors

Wednesday: MAIN OPERATIVE ROOM (general anesthesia)

Thursday: MAIN OPERATIVE ROOM (general anesthesia)

Friday: OUT-PATIENT ENDOSCOPIC MEDICATIONS – of DCR & septal reconstructions & frontal sinusotomies Draf III type

Plan for weekly activities as Neurosurgical Fellow:

#### **Day Activity**

Monday: Full day surgery

Tuesday: Full day surgery

Wednesday: Full day surgery

Thursday: OUT-PATIENTS evaluation

Friday: Full day surgery

By the end of Segment #2 the candidate will have a tutored anatomical lab dissection section on a specimen which will be used both sides, and the surgical skills he must achieve are the followings:



For ENT surgeons:

- Draf III type frontal sinusotomy
- Medial maxillectomies
- Harvesting of Hadad flap & variants
- Approach to the sella
- Dacriocistorhinostomy

For neurosurgeons:

- Fronto-orbito-zygomatic approach
- Subtemporal approach
- Transinusal anterior approach
- Cerebello-pontine angle approach

**B) Scientific training:**

The student fellow is required to attend the morning meetings that will be held in English and that will focus on the clinical cases that will be treated on that day and on some other interesting clinical cases. The Candidate is required to carry on some scientific activities in order to investigate an assigned research field.

The student fellow should analyze the scientific literature regarding to a given topic and compare it to his experience and to the policies approved by the Skull Base Unit at the Ospedale di Circolo e Fondazione Macchi, Varese, Italy.

During the next 3 months fellowship the Candidate will participate to the following courses at least as an observer (subscription to the courses as participant are possible on his own expenses)

- Esercitazione #1 - Corso di Perfezionamento Universitario 11-13 June
- Esercitazione #2 - Corso di Perfezionamento Universitario 25-27 June
- Esercitazione #3 - Corso di Perfezionamento Universitario 30 July – 1 August

\*Changes in dates and scientific events may take place.

Before the end of the second quarter the student fellow should prepare and discuss a ground-round presentation concerning a selected topic related to the research field assigned.

Furthermore the student fellow must publish a scientific paper on a topic that was assigned during the first six-months fellowship by the endoscopic team of the Clinic.

At the end of the Segment#2 the Directors of the program, after checking the filled-in Log-Book and the scientific activity carried on by the student fellow, and after having discussed with the Tutors of the Skull- Base team that have followed the student fellow during this period, will decide weather or not the Candidate should pass on the next didactic step.

### **Segment 3: ADVANCED TECHNIQUES**

Period: 3 months

**A) Training as ENT Fellow:**

The next didactic step is focused on advanced surgical endoscopic techniques for the treatment of malignant tumors, repairing of skull base damages and other extended diseases. Deep anatomical knowledge of the area including surgical landmarks and risk points are the main objectives as well as complications and their management.

For neurosurgical Fellows the activities are focused on deep brain approaches and Key holes



endoscopic approaches as programmed below.

The post-operative management of the patient with particular attention to endoscopic medications, identification of early and late complications, analysis and solution of patient discomfort and symptoms are other important issues that the fellow need to understand. The student fellow can refer directly to a senior doctor for his needs and in order to check day-by-day his clinical and surgical activities and at the end of the daily activity the Tutor will sign the Log-Book filled by the student fellow.

Plan for weekly activities as ENT Fellow:

**Day Activity**

Monday: OUT-PATIENT ENDOSCOPIC MEDICATIONS – for CSF-Leaks

Tuesday: MAIN OPERATIVE ROOM (general anesthesia) – Tumor Board at 2:00 p.m.

Wednesday: OUT-PATIENT ENDOSCOPIC MEDICATIONS – for malignant tumors

Thursday: MAIN OPERATIVE ROOM (general anesthesia)

Friday: MAIN OPERATIVE ROOM (general anesthesia)

Plan for weekly activities as Neurosurgical Fellow:

**Day Activity**

Monday: Full day Surgery

Tuesday: Full day Surgery

Wednesday: Full day Surgery

Thursday: OUT-PATIENTS evaluation

Friday: Full day Surgery

By the end of Segment #3 the candidate will have a tutored anatomical lab dissection section on a specimen which will be used both sides, and the surgical skills that must achieved are the followings:

For ENT surgeons:

- Subperiosteal dissection of the ethmoid and removal of ACF floor
- Dissection of epidural space
- Resection of olfactory bulbs
- Anterior skull base reconstruction
- Nasopharyngectomy

For Neurosurgeons:

- Transcallosal approaches to the third ventricle
- Transtentorial approach to the pineal region
- Supracerebellar approach to the pineal region
- Endoscopic key holes approaches

B) Scientific training:

The student fellow is required to attend the morning meetings that will be held in English and that will focus on the clinical cases that will be treated on that day and on some other interesting clinical cases. The Candidate is required to carry on some scientific activities in order to investigate an assigned research field.

He should analyze the scientific literature regarding to a given topic and compare it to his experience and to the policies approved by the Skull Base Unit.

During the next 3 months fellowship the Candidate will participate to the following courses at least as an observer (subscription to the courses as participant are possible on his own expenses):

- Esercitazione #4 - Corso di Perfezionamento Universitario 03-05 September
- Summer School Varese 10-14 September
- 2<sup>nd</sup> VAR-ESS Basic-Italian Dissection Course; 24-26 September 2018



- 2<sup>nd</sup> Olfaction Course, 3-4 October 2018
- Esercitazione #5 - Corso di Perfezionamento Universitario 08-10 October
- 3<sup>rd</sup> VAR-ESS Basic, English Dissection Course; 22-24 October 2018
- Segmento #3 Corso di Perfezionamento Universitario 19-21 November 2018
- Snoring Dissection Course 26-28 November 2018

\*Changes in dates and scientific events may take place.

Before the third quarter the student fellow should prepare and discuss a ground-round presentation concerning a selected topic related to the research field assigned.

At the end of the Segment#3 the Directors of the program, after checking the filled-in Log-Book and the scientific activity carried on by the student fellow, and after having discussed with the Tutors of the Skull- Base team that have followed the student fellow during this period, will decide whether or not the Candidate should pass on the next didactic step.

#### **Segment 4: EXTENDED APPROACHES**

Period: 3 months

##### **A) Training as ENT Fellow:**

The activities of the last didactic step are focused on extended surgical techniques and their outcomes. Deep anatomical knowledge of the area including surgical landmarks and risk points are the main objectives. Complications and their management are other issues to be learned.

For neurosurgical Fellows the activities are focused on endoscopic approaches to the anterior, middle and posterior skull base, as shown below.

The post-operative management of the patient with particular attention to endoscopic medications, identification of early and late complications, analysis and solution of patient discomfort and symptoms are other important issues that the fellow need to understand. The student fellow can refer directly to a senior doctor for his needs and in order to check day-by-day his clinical and surgical activities and at the end of the daily activity the Tutor will sign the Log-Book filled by the student fellow.

Plan for weekly activities for both ENT & Neurosurgeons Fellows:

##### **Day Activity**

Monday MAIN OPERATIVE ROOM (general anesthesia)  
Tuesday MAIN OPERATIVE ROOM (general anesthesia)  
Wednesday MAIN OPERATIVE ROOM (general anesthesia)  
Thursday MAIN OPERATIVE ROOM (general anesthesia)  
Friday MAIN OPERATIVE ROOM (general anesthesia)

By the end of the last segment the candidate will have a last tutored anatomical lab dissection section on a specimen which will be used both sides, and the surgical skills he must achieve are the followings:

For ENT surgeons:

- Transphenoidal & transplanum windows
- Transclival window
- Transcribriform window
- Transetmoid-pterygoid-sphenoid-antral window
- Multiportal approaches to the orbit



For Neurosurgeons:

- Endoscopic approach to the anterior , middle and posterior cranial base
- Lateral approaches to the petrous bone
- Far lateral approaches to the posterior fossa-upper cervical spine
- Antero lateral approaches to the upper cervical spine

B) Scientific training:

The student fellow is required to attend the morning meetings that will be held in English and that will focus on the clinical cases that will be treated on that day and on some other interesting clinical cases. The Candidate is required to carry on some scientific activities in order to investigate an assigned research field.

The student fellow should analyze the scientific literature regarding to a given topic and compare it to his experience and to the policies approved by the Skull Base Unit at the Ospedale di Circolo e Fondazione Macchi, Varese, Italy.

During the last 3 months fellowship the Candidate will participate to the following courses at least as an observer (subscription to the courses as participant are possible on his own expenses):

- 4<sup>th</sup> VAR-ESS Advanced, Italian Dissection Course; 10-12 December 2018

\*Changes in dates and scientific events may take place.

Before the end of the last quarter the student fellow should prepare and discuss a ground-round presentation concerning a selected topic related to the research field assigned and must publish a scientific paper on a topic that was assigned during the last six-months fellowship by the endoscopic team of the Clinic.

At the end of the last segment of the program the Directors, after checking the filled-in Log-Book and the scientific activity carried on by the student fellow, and after having discussed with the Tutors of the Skull- Base team that have followed the student fellow during this period, will admit the student fellow to the final examination in order to complete the fellowship program and obtain the University certificate.

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