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Review

The 'young' history of Anesthesia of the Antwerp University and University Hospital

Em. Prof. Dr. Vercauteren M.

Corresponding author: Em Prof Dr Marcel Vercauteren. Email: marcel.vercauteren@skynet.be

As from 1965 only, it was possible to study medicine in Antwerp and courses were given in buildings in the surroundings of the later Middelheim Hospital.

Initially only the first 3 years ('candidacy') were possible but in 1972 students could stay for the remaining 4 years in a newly built campus (Three Oaks) in Wilrijk. Anesthesia was teached by Prof Delooz (Leuven) for 10 interested out of 36 students whereas the remaining 26 had chosen sexuology (this funny choice was obliged). Very soon afterwards prof Delooz would opt to stay in Leuven, the course of anesthesia vanished and dr Hanegreefs became professor though not having a PhD or list of publications. However as responsible for the majority of community hospitals in Antwerp he could not be bypassed. Similarly at that time, there were more professors who were offered the university head position based on their experience and/or teaching skills.

As long as there was no University Hospital (UH) students had to obtain clinical practices in the different 'affiliated' hospitals (community as well as private hospitals) where professors moving from other universities had a temporary base before they could move to the UH. Other professors (mostly those already practicing in Antwerp Hospitals) moved completely to the UH, some stayed in their hospital or splitted their activities over both hospitals.

Before the first medical students graduated at the University Institution of Antwerp (UIA) in july 1976, anesthesia residency was possible in the community hospitals with as mean working place the Stuyvenberg Hospital (Head dr Guillaume Hanegreefs). These residents came from other universities and the duration of residency meanwhile prolonged to 4 years. Dr Hanegreefs was responsible for several community hospitals such the Stuyvenberghospital, St Elisabeth Hospital, Hoge Beuken (Hoboken), the children's hospital Good-Engels, part of the Middelheim Hospital (opening 1972) and by moments some other smaller hospitals. The number of 'Stuyvenberg' residents in 1976 (the first graduation year of 'antwerpean' medical students) doubled from 6 to 10 and remained approximately 10 during the years thereafter. Those with an 'Antwerp' diploma were delegated and reimbursed by the University while those from other universities fell under the responsibility and payment of the community hospital(s).

During these 4 years there was an orthopedic operating program on saturday mornings as well. Residents on call, staying in the hospital, were responsible for emergency surgery, the 12 patients in the Intensive Care Unit (entirely managed by the anesthesia department and mixing post-surgical, emergency patients and patients with all kinds of internal severe problems (MI, COPD, diabetic coma, overdoses, suicide attempts…)

During the majority of these activities they were not physically supervised but could call a staff member when they deemed it necessary. Up to 3 months they were delegated to this Intensive Care Unit for the (unsupervised) follow-up of the patients during the day until the resident on call took over. As there was no cardiothoracic and hardly any obstetric anesthesia experience these gaps needed to be filled in after the residency time (getting experience in a cardiothoracic surgery center, chronic pain therapy or obstetrics was completely out of question during resident time).

When the University Hospital (formerly named Academic Hospital) opened in september 1979 residents, graduated at the Antwerp University Institution were obliged to perform services in this new hospital, initially only the days they were on call.

Gradually all residents had the opportunity to perform part of their residency in either the university hospital or a community hospital. At that time there did not exist any regulation or obligation with respect to the residency time in a peripheral hospital nor a minimum they had to work in a university hospital, if any.

The leading responsibility of the Intensive Care Unit in the UH (anesthesia founded Intensive Care in the 50's !) was missed by 1 vote and a cardiologist prof Leo Bossaert became head of the ICU. Since then the leading of that unit never was an anesthesiological privilege although the majority of staff members were anesthesiologists.

When prof Hanegreefs retired in 1988 all staff members were too young to take over his position as at least 8 years of clinical experience and 'preferably' a PhD were mandatory. It was prof Hugo Adriaensen moving from Leuven to lead the department where prof Hanegreefs meanwhile had prolonged (being the first of all Flemish universities) the duration of residency to 5 years.

Prof Adriaensen, being a well recognized pain specialist, started up a multidisciplinary pain unit with the support of the provincial governor Andries Kinsbergen. He also made it possible that staff members received some time to perform laboratory and clinical research which resulted in 3 PhD theses defended in 1992. Dr Stefan De Hert (cardiac physiology), Dr Karel Vermeyen (university lab, coronary disease, dogs) whereas dr Marcel Vercauteren did it in the labs of Janssen Research Foundation (being the first to demonstrate by isobolographic analysis in rats that local anesthesics and lipophilic opioids had a synergistic interaction). All of them became associate professor and vice-chairman in 1994. During subsequent years more PhD theses were successfully defended especially the one by dr Guy Hans, progressively taking over the multidisciplinary pain center even when he became Medical Director in 2016.

When prof Adriaensen retired in 2004 there was a vacuum during more than 1 year and this for both the University and the hospital position (not mandatory to be fillid by one and the same person). This was mainly due to the different preferences by the university and hospital councils. In oktober 2005 prof Vercauteren was asked to temporarily lead the hospital position although he never applied for it. He decided to let the University position to prof Stefan De Hert, a staff member with a meanwhile impressive curriculum. At that moment the largest Belgian cardiothoracic/vascular output came from the Antwerp University & Hospital.

When prof De Hert decided to move to Amsterdam, Prof Vercauteren was officially offered both positions in 2008 (90% hospital while only 10% university instead off the common 60%). Anesthetists were obviously considered as second class citizens of Medicine (also internationally better known as the PEAR-group specialties).

When considering the contributions of the Antwerp department of anesthesia with respect to the Local, National and International forum, and despite being the youngest of all Belgian Universities, these were far from unnoticed. During decades anesthetists were in the frontline (member, founding member, president, vice-president) of the Medical Council, Ethics Committee, all national committees and boards). Without interruption they were a pillar since the beginning of the annual CEEA (formerly Boerhaave courses) courses (Leiden, The Hague and Antwerp).

In 2005 there were 12 staff members (anesthesia, pain clinic, preop consultation) and 25 residents (of whom 5 in a peripheral hospital, 5 in ICU/ Emergency Unit or Pain clinic, 2 recovering from night calls and 1 on vacation. There were at that time less candidates than places available. So, those interested in anesthesia had more chances to be accepted than in any other specialty.

During subsequent years the number of residents increased to more than 40. More and more students became wiling to become an anesthesiologist. There were several explanations for this. First of all since 2011 the university modified the teaching-program including a 2-week module of 'Anesthesiology-Perioperative Medicine-Pain' to be given in the 5th year which gave us the opportunity to make students more familiar with an exciting specialty. Otherwise at least one year out of 5 (later extended to 20 months out of 60) needed to be performed in intensive/emergency departments and one fifth in a peripheral hospital. In addition to this there were governemental/MANAMA regulations of working/recovery/study time on a weekly basis. As a consequence less than half worked in the operating theatre of the UH. With a similar (though somewhat lower) number of staff members we always aimed at a 1/1-1/2 staff/resident ratio depending on the type of patient (neonate…) or surgery (cardiothoracic…).

With respect to scientific and clinical research, there were several pillars on which the department has focused for a long time : cardiac anesthesia, postoperative/labor pain , locoregional/obstetric anesthesia, neuromuscular blocking agents and reversal in adults and children, and hypersensivity reactions. The cardiac part, probably having the largest impact factor our department ever created, was becoming anemic since prof De Hert (and others) left the hospital.

A second pillar, or shoud we say, pillars were many publications on postoperative pain, labor pain and C-section and locoregional anesthesia/ analgesia/technics of which the author of this review was first, if not co-author. We always aimed at performing studies to answer a dilemma or question and to be consequent with the

conclusions of the study. A series of studies were performed to reduce the severity of hypotension during C-section (appreciated by an editorial comment in Anesthesia and Analgesia). Our recipe with respect on low-dose CSE for C-section was subsequently adopted by many hospitals and resulted in studies done in other university hospitals using a quite similar combination. Also the use of the epidural mixture for labor analgesia was first tried and published by our department, thus avoiding the making of new combinations, manipulation, contamination and errors. When initally neuraxial approaches were prominent in our list of this kind of publications, the accent progressively moved to peripheral blocks under the impuls of dr Luc Sermeus and Barbara Breebaart. Meanwhile both of them but also dr Saldien were working on a PhD thesis. Several presentations of our research projects resulted in prices and awards both nationally and internationally. In addition the author of this review received in 2013 the honour to present the Albert Vansteenberge Memorial Lecture (Brussels) and in 2015 the annual ESRA Karl Koller Gold Medal (created since 1984 in Vienna) for his complete career (Slovenia) and this as the second belgian ever. This career price was given for the list of publications but also as founding member of BARA, being Editor in Chief for our Acta, my efforts in CEEA and extending CEEA to Romania, Moldova, Estonia and Indonesia, being member of the editorial board of RAPM, chairperson for the obstetric session in ESA, reviewer for many international anesthesia journals, jury member for PhD theses defended outside Belgium, honorary memberships (Romanian Society of Anesthesia and Intensive Care, Polish Pain Chapter).

With prof Luc Sermeus , moving to Brussels in 2020 the locoregional part was continued by several staff members also inspired by the hype of ultrasonography opening new horizons and from the beginning our department being a pioneer in using this tool.

Prof Vercauteren retired in 2015 and the position was offered in february 2017 to dr Vera Saldien (the intermezzo filled by prof Slappendel is just a footnote). As she was still working at her PhD (defended in 2019, not based on her neuromuscular blocking agents/reversal studies but on pacing during cerebral aneurysm anesthesia) she remained temporary head until 2020. Up to date Prof Saldien is still leading the department both at hospital and university level.

The COVID years were not the most exciting years for scientific or clinical research. During last years research has taken a new direction. The department has actually focusing on flow controlled ventilation, jet-ventilation, perioperative hypersensivity reactions and whole body hyperthermia.

The multidisciplinary pain was supervised by Prof Guy Hans and the majority of staff members were (still are) anesthesiologists. It has close relationships with the anesthesia department but is grossly independent from it. Uniquely the unit is responsible for both chronic and acute pain, its reimbursement, PCA pumps (started in the recovery room and falling under the responsibility of anesthesia during nights and weekends only).

In conclusion, although the history of anesthesia on the university level is rather young, covering somewhat 50 years, with a hospital being even younger and built in the vicinity of two bigger pre-existing hospitals, requiring to compete with them and general practionars south of the city, we can only be proud of our achievements.

And that is what we should do on all possible levels : increasing the visibility of our profession ‘ANESTHESIOLOGY’, our basic specialty (even if afterwards practising in ICU, Pain Clinics or Emergency Departments).

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