MENTORS IN ORTHOPEDICS

NICOLAS BONIN

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SUMMARY

Nicolas Bonin's trajectory reflects a deliberate evolution from the Lyon knee school to a specialized focus on hip preservation and arthroplasty. After refining his surgical skills in Besançon, he returned to Lyon, eventually pivoting toward hip arthroscopy and the anterior approach to establish an independent clinical identity. As a founding member of the dual mobility congress and treasurer of ISHA, Bonin emphasizes soft-tissue preservation. His career demonstrates a commitment to technical adaptation and the international dissemination of knowledge.

On the occasion of the second congress on dual mobility, we met one of its founding members, Nicolas Bonin. Trained at the Lyon knee school, he did not hesitate to reinvent himself to turn completely to the hip and become the herald of two concepts that he defends ardently: conservative surgery and, naturally, dual mobility.

Nicolas Bonin, while dual mobility remains a predominantly French specialty, you co-founded a conference on the subject alongside Olivier Guyen and Julien Wegrzyn. Why did you decide come to Lausanne for this year's conference?

> The first congress was held in 2018, and we had planned to hold it every two years, but then COVID came along in 2020, so we were only able to organise our second congress this year. We had to come to Lausanne for several reasons: firstly, because it's good to finally meet up in person, and secondly, Lausanne is a very beautiful city where you can spend an evening on a boat to relax after the conference...

> Above all, the dual mobility implant represents the future, and it needs to be promoted internationally. We organized this congress in Switzerland precisely to reach a wider audience and try to export dual mobility beyond our borders: I have no doubt about its potential.

Regarding dual mobility, were there any specific themes addressed, or was the topic discussed in a broader sense?

> Of course, we revolved around the same themes, which are tribology and the value of double mobility, whether in first intention or revision; but the originality this year was the role of cement

> in double mobility: when to cement double mobility cups, and how? We discussed cemented double mobility in primary surgeries as well as in revisions - sometimes just the metal back cemented without reinforcement - with international speakers whose experience differs from ours, which can be interesting. In France, cemented double mobility is performed in a framework, whereas other countries implant them without a framework, producing rather encouraging data.

Could you mention some of the international speakers this year? Perhaps there are some who were also present at the inaugural congress in 2018?

> Most of them were new speakers, because we changed the panel. That said, they came from the same groups: the Mayo Clinic was well represented, for example. I was mainly responsible for national recruitment, while Julien and Olivier were in charge of the international side: as far as conservative hips are concerned, I have an international reputation and quite a few international connections, but as far as prosthetic hips are concerned, I am more national with the anterior approach and rapid recovery, on which I have communicated a lot to the SFHG and the SOFCOT.

You are also very involved in ISHA, a society that is close to your heart. How did you come to contribute to it?

> Our small French group was initiated by Thierry Boyer in the lead-up to the 2009 SFA Symposium and was later joined by Hassan Sadri and Richard "Ricky" Villar. Equipped with our collective expertise, we set out like pilgrims to disseminate knowledge about the emerging pathology of hip impingement and its arthroscopic treatment. We made our presence felt at every conference and within societies. I had been associated with ISAKOS for an extended period. I initially served on the newsletter committee, then progressed to the arthroscopy committee, and ultimately joined the hip committee as soon as it was established. I was also affiliated with ESSKA. David Dejour, during his tenure as vice-president, entrusted me with the task of establishing the hip committee for the society, which I founded in 2016. To me, ISHA represents the pinnacle of conservative hip surgery. I would urge any skeptics, especially from France, to attend this congress at least once. They would be astounded. It's a showcase of every conceivable procedure and technique related to the hip. It's truly enlightening and unparalleled in France.

Now that you're serving as the treasurer on the ISHA board, which distinguished surgeons are you collaborating with?

> As I moved around a lot I knew quite a few people, and when Thierry Boyer stepped down from the ISHA board in 2015, he encouraged me to succeed him to ensure French representation. For a significant period, it was indeed awe-inspiring to be amongst the esteemed founders of ISHA, surgeons of great repute like Ricky Villar, Richard Field, Marc Safran, Thomas Byrd, John O'Donnell, Joe McCarthy, and Marc Philippon...

> I was in the office, and I felt very small! Little by little, the younger people took their place, and I was able to feel more at ease. I get on very well, for example, with Michael Dienst, 2nd past president of the ISHA, Tony Andrade, past president, but also with Al Stubbs, the current president, and Paul Beaulé, the vice-president. It's funny, even before they were all in the presidential line, I thought we were among the young people who got on best.

> When they became chairmen, they asked me to be treasurer instead of Hassan, who also wanted the job, so I took it. I really enjoy working with all these people, and we meet again every autumn for the congress, which was last year in Glasgow.

You're originally from Lyon, and you did your medical training at Lyon Sud. What memories do you have of your time there?

> Extraordinary! We liked to act like "rednecks" and dubbed ourselves "the university in the fields". There was a certain cheekiness to our approach, which resonated with my own personal style... During my time there, I served as the president of Lyon Sud corpo, AMEUSO, a veritable institution. Holding the position of vice-president in my second year and ascending to president in my third year allowed me to establish close ties with notable figures such as Henri Dejour, who was the dean, and Philippe Neyret, who was head of clinic - or even already a PHU - when I was a young student in 91-94.

Where did you do your internship?

> I didn't rank well for placements in the South, so my options were limited to the North. During my externship, I crossed paths with David Dejour while I was completing my first placement in visceral surgery under Pr Braillon. David was wrapping up his internship—it was his final semester—and we instantly clicked. Later, as I was gearing up for my residency and during the only skiing holiday week I permitted myself that year, David was there with me. So, when I faced the necessity of choosing a northern city for my residency, I sought his advice. His top suggestions were Paris, naturally, and then Lille—a position I narrowly missed. The third recommendation from David was Besançon, largely because of its former Lyonnais with notable reputations: Professor Onimus and Doctor Pierre Popon. Additionally, there was the renowned trauma school led by Professor Vichard. Trusting his counsel, I opted for Besançon. The transition was initially challenging, especially considering I had always lived in Lyon. Besançon felt small and somewhat removed. Thankfully, the internship turned out to be a truly enriching experience. Though the initial months posed challenges, the situation improved significantly, largely due to the camaraderie of the interns. They cultivated a vibrant atmosphere, hosting gatherings every Thursday evening that united both the seasoned and newer interns. The communal life was lively and fulfilling, and I eventually became the president of the interns. My goal was to better the welcoming experience for newcomers and, naturally, to organize even more parties.

How did the training go?

> My experience unfolded in two phases. Initially, I served in peripheral hospitals. My journey began in Pontarlier with Félix Leclerc, who was passionate about hip replacements. His method was a nod to tradition—meticulous cold blade procedures, extensive incisions, and the classic posterolateral approach. At that juncture, I was particularly drawn to knee surgeries, having departed Lyon with Henri Dejour as my guiding figure. Moreover, my ACL had been treated by David Dejour. While in Pontarlier, not only did I acquaint myself with hip surgeries through Leclerc, but I also dabbled in knee arthroscopies under Radj Pem's guidance.

> Next, I relocated to Dole to collaborate with Pierre Popon, who had previously worked alongside Henri Dejour and Pierre Chambat. This transition was instrumental in my deep dive into knee prosthetics—grasping concepts like spatial management and ligament balancing. Popon was also adept in hip replacements, favoring the lateral decubitus Hardinge approach. This exposed me to an alternative perspective on hip surgeries and allowed me to appreciate the nuances of Popon's Lyonnaise analytical approach. Furthermore, Dr. Morhaf Kabbache's mentorship was invaluable during this phase

> The next phase was returning to the University Hospital, poised to join Professor Vichard's team. However, Vichard was nearing the end of his tenure. His continuous pressure on the administration had backfired, and they were eager to see him go, a classic scenario. Tensions peaked since there wasn't a successor for the orthopaedics department at the University Hospital, and Vichard sought to exploit this void to extend his tenure. He pressed me with an ultimatum: "Unless you complete an orthopaedic surgery course, you won't qualify as an orthopaedic surgeon"— and this was merely our 5th semester...

> Eventually, the dust settled. Patrick Garbuio stepped in to oversee hip procedures, and Professor Yves Tropet, a plastic surgeon with a keen interest in hand surgery, took the reins of the department. Learning under their tutelage was enlightening. While my true passion remained knee surgeries, they broadened my horizons on orthopaedics.

Was Laurent Aubert already present at this time?

> Upon my arrival as an intern, the clinic was led by Laurent Aubert and Laurent Jeunet—an outstanding duo. Aubert was inherently likable, and our interactions brimmed with the passion he's known for. Jeunet served as my mentor during my residency and continued to do so even afterward. Together, we fostered the development of knee procedures at the university hospital. At that time, the department was primarily trauma-focused. However, orthopaedics was gradually emerging, with each practitioner specializing in a distinct joint. I was driven to champion the knee, and I maintained connections with David and the LSKS in Lyon. I contributed by developing topics for the Journées Lyonnaises. By the 6th semester, I was engrossed in a study comparing HLS knee replacements that either preserved or omitted the PCL, led by Gérard Deschamp and David Dejour, respectively. I had the privilege of presenting my findings at the Lyonnaises conference in 1999.

> Subsequently, I undertook an Inter-CHU in Lyon under Philippe Neyret. That semester remains etched in my memory. The pressure from Neyret was palpable—he ran a tight ship. However, the exposure to his exceptional orthopaedic teachings was invaluable. I collaborated closely with talents like Tarik Ait Si Selmi, Fred Chatain, and Laurent Jacquot—all of whom I developed great rapport with. Additionally, Olivier Guyen was a co-intern and a constant companion during that time.

When you began your practice in Besançon, did you have any specific goals or projects in mind?

> At the outset, my primary aim was to foster knee procedures at the University Hospital in collaboration with Laurent Jeunet. I also aspired to establish myself in a university hospital, or alternatively, find a setting where I could truly flourish. Besançon appealed to me mainly because of the autonomy I was granted. Essentially, I was told, "Develop the knee; you've got free rein." I collaborated closely with Laurent Jeunet, who gradually shifted his focus towards septic, ankle, and foot surgeries, but continued assisting me with knee procedures.

> I served two years as a clinician, followed by three as a hospital practitioner, earning my hospital practitioner certification in 2005. Concurrently, I maintained regular contact with David, continuing our scientific collaborations. For instance, at the Journées Lyonnaises in 2006, I presented a study comparing the outcomes of patellar resurfacing between Gérard Deschamps, who opted against resurfacing, and David Dejour, who consistently resurfaced patellas. Our findings indicated better patient outcomes with resurfacing.

> Then, in February 2005, I received an intriguing email from David urging a meet-up. When we met, our discussion gravitated towards my future aspirations. He extended an invitation for me to join his practice. The ensuing year revolved around strategizing my return to Lyon and aligning with David. Admittedly, the prospect was daunting. Establishing a foothold in Lyon's knee surgery scene without having been trained there was a challenge. Yet, an inner voice constantly reminded me of my desire to collaborate with David; I genuinely respected and admired him.

You underwent specialized knee training and then moved to Lyon to collaborate with David Dejour, a name synonymous with knee procedures. Yet, you made a striking shift towards the hip. What catalyzed this change in direction?

> Two pivotal moments shaped my decision. First, in 2005, David broached the topic of hip impingement. He remarked, "You're here for the knee, but consider diving into hip impingement. The sports physicians I collaborate with, especially Jean-Marcel Ferret's team, are seeking a surgeon in Lyon to handle these cases." They were already familiar with hip impingement and often referred their patients to Frédéric Laude in Paris for surgical intervention. Honestly, I wasn't well-versed with this particular condition. Being in Besançon, I looked for expertise nearby and came across Hassan Sadri in Switzerland, who was already performing surgeries for hip impingement. I visited him, discussed the topic, and even observed a few of his surgeries. Admittedly, they were intricate, often extending beyond four hours.

> However, this spurred my curiosity. I realized this was a specialized area with only a handful of surgeons exploring it. The prospect of pioneering and refining new techniques truly captivated me. Additionally, it paved the way for independent research, ensuring I wouldn't remain in David's shadow indefinitely.

> The second influential factor was David delegating his hip surgeries to me, effectively phasing out his involvement in this domain. Consequently, I found myself managing around 60 annual hip replacements using a posterior approach. Honestly, this approach didn't resonate with me; the idea of imposing post-operative restrictions on patients, like preventing them from crossing their legs, seemed overly limiting, regardless of how minor it might seem.

> At that juncture, we were a trio—Émilie de Vialard, Patrick Reynaud, and myself—distributed across two clinics, Émilie de Vialard and La Sauvegarde. While Patrick predominantly dealt with ankle and hip surgeries, he also navigated the realm of the posterior hip approach, albeit using double mobility. David, on the other hand, often mentioned his reservations about double mobility, particularly regarding its potential wear and tear.

> Influenced by my time in Besançon, a center known for its cementless techniques, I initially adopted the posterior approach without using cement. This choice was further reinforced by my collaboration with the Tornier group, which expanded my insights into hip surgeries—a domain I had not deeply explored during my internship. With the autonomy to innovate, I integrated practices that resonated with me and dived deeper into the posterior hip replacement since it was within my area of expertise. However, this approach presented challenges in post-operative care, leading to occasional dislocations in patients. In search of a better solution, I transitioned to the Hardinge anterolateral approach, a method I acquired from Pierre Popon. While this technique had certain advantages, it also resulted in extended recovery times and increased pain for patients.

> From the early stages of my practice, I pinpointed a unique opportunity within hip treatments, encompassing both hip arthroscopy and prosthetic surgery. My passion for hip arthroscopy was cultivated through sessions with Thierry Boyer in Paris and hands-on training at the Cadaver Labs in England. However, the domain of prosthetic surgery presented distinct challenges. Neither the posterior nor the anterolateral approaches met my standards; both had discernible limitations.

> Determined to identify the best procedure for my patients, I sought out leading experts in France. Patrick Mamoudy in Paris introduced an anterior technique, but it relied on a specialized orthopedic table, which was not available to me. Gilles Wepierre in Epinal and my experiences from the SFA travelling fellowship in Munich further broadened my understanding of diverse methods. Yet, I remained in search of the perfect approach.

> It was through Vincent Lopez that I discovered Jan DeWitte in Ghent, Belgium. Observing DeWitte's techniquewas nothing short of an epiphany. He used the anterior approach on patients without the need for a specific orthopedic table. Every step was executed with precision, and the entire process seemed beautifully streamlined. Watching him, I realized, "This is the path I've been seeking."

> Transitioning to this new method in my own practice was not without challenges. I faced skepticism, primarily from anaesthetists who expressed concerns about the procedure's length. Even colleagues like David Dejour questioned if I was on the right path. But the proof was in the patients' recovery. When I did my evening ward rounds, I consistently received positive feedback from nurses about the comfort and speedy recovery of my patients. Their words were a beacon of encouragement amidst the challenges.

> As I progressed, I constantly fine-tuned my technique. Partnering with professionals like Johanna Garcia and the supportive Tornier team, we pushed boundaries. Collectively, we designed a new spreader that further elevated the procedure, ensuring even more promising outcomes for our patients

At the heart of your practice, you emphasize the preservation of soft tissues. Having adopted the exclusive anterior approach since 2007, how do you assess your results?

> My preference for the anterior approach isn't solely based on its speedy recovery. Even with a masterfully performed posterior approach, patients can recover just as quickly. What truly distinguishes the anterior approach, in my view, is the immediate liberty it grants patients from the very first day post-surgery. I often advise them, "You can let go of the walking aids as soon as you feel confident. There are no restrictions; just live your life." The only piece of caution I share is related to the nature of the cementless prosthesis: "Avoid any falls during the initial month." As for high-impact sports, I recommend waiting for three months post-operation. Remarkably, there's no sporting activity that I consider off-limits, even for my younger patients. Some of them are avid football players competing at higher levels, while others are into extreme skiing.

In your anterior approach to hip replacement, you utilize short stems. Is this choice mainly driven by the intent to conserve bone, or is it more about streamlining the procedure by reducing femur exposure?

> It's a combination of both! Using a short stem is fundamentally different from using a long stem. The process of exposing the femur becomes notably easier and the rasping is quicker and requires less effort. On one hand, there's the advantage of bone preservation, which makes it simpler if a

> revision surgery is needed later on, facilitating the implantation of conventional first-line stems. On the other hand, it reduces trauma to the soft tissues. With a standard stem, you often find yourself having to release tissues from the posterior side, demanding a more aggressive approach to free the femur. All these factors combined make using the short stem genuinely enjoyable.

Does that mean you sometimes need to release some tissues?

> Yes, for about 10 to 20% of the patients, I'd estimate. This is an aspect I'd like to delve deeper into. The anterior approach to the hip can be likened to the internal approach of the knee: for patients with a varus knee, a systematic internal release is performed to realign it. Similarly, with the anterior hip approach, when a patient is quite stiff in external rotation, a sequential detachment of the pelvi-trochanterian muscles might be required. This could mean detaching the piriformis first, followed by the obturator internus, and then, if necessary, the gemellus muscles. Without this release, these patients might experience prolonged stiffness and pain. However, I've never found it necessary to sever the obturator externus or the quadratus femoris.

Do you incorporate a collar in your procedures?

> Absolutely, I'm quite fond of using a collar. My fascination with it dates back to my interactions with Tarik. During one conversation with members of the Meije group, I expressed my concern about the Meije Duo stem (akin to the Corail type): "I sometimes notice that even though the stem appears firmly in place during surgery, a follow-up after two months reveals it's sunk by about 5mm. This often leads to patients complaining of thigh pain in the interim. How do you tackle this?" They explained their method, which was using aggressive rasping and considerable force to secure the implant. But this method, while effective, can be exhausting. And often, while working on the femur, the rasp might sink more than intended, leading to imprecise stem placement.

> So, I turned to Tarik for guidance. In his characteristic practical manner, he said: "I compact the cancellous bone and once it's fixed, I introduce my stem with a collar. It works wonders." Initially, I perceived the collar as a sign of uncertainty, as if the surgeon wasn't confident about the placement. However, it has since become an invaluable tool, providing immense peace of mind. I liken it to a car's seatbelt: you might never find yourself relying on it, but in the rare event of an accident, you're immensely grateful it's there. There have been occasions when I felt a larger stem would have been more appropriate, but thanks to the collar, the stem remains stable.

When it comes to revision surgeries, do you always resort to the anterior approach? Are there circumstances when a posterior approach might be more suitable for revisions?

> For revisions of a posterior approach, I stick to the same posterior approach. If I’m revising an anterior approach and it’s a straightforward task like revising a shortened stem, or simply changing a unipolar cup, then the anterior approach is my go-to. However, if the revision is complicated, say in cases where the patient has a robust physique and the stem is firmly anchored, I pivot to the posterior approach. There are two main reasons for this choice.

> Firstly, a challenging revision through the anterior approach can be just as, if not more, invasive as the posterior approach. It demands a significant release of the pelvi-trochanterian muscles, almost replicating the posterior approach but from the front. This method can be particularly hard on the Tensor Fasciae Latae (TFL) muscle.

> The second reason is the risk factor. If there's a fracture in the femur during the procedure, managing it becomes a formidable challenge. While it's technically possible to fix the femur through a lateral extension when using the anterior approach, this method is suboptimal and far from being the best solution. As for my current practice, I've started using double mobility cups for all my posterior revisions. It's become a systematic choice for me. There have been instances where, even after ensuring stability with a ceramic, a patient would experience a dislocation. The cause for these dislocations remains elusive to me, hence the choice of double mobility cups.

Given your preference for the anterior approach, what keeps you intrigued about dual mobility in hip arthroplasty?

> Charney's concept of low friction arthroplasty, specifically the 22.2mm head encased in polyethylene, is quite a marvel in itself. However, it's an indulgence to use it universally. Regardless of employing the anterior approach, the 22.2mm head fails to mimic the natural range of motion a healthy hip provides, unless we're discussing extremely arthritic hips commonly found in elderly patients. This limitation results in the neck often encountering conflicts, leading to potential dislocation of the prosthesis. Moreover, the head's "jump distance" is a paltry 11mm, increasing the risk. So, the question arises: if one desires to remain trouble-free, why opt for single mobility polyethylene? This brings us back to our earlier discussion about the collar. Dual mobility cups ingeniously marry the benefits of Charney's low friction arthroplasty—pertaining to the small diameter heads—with the stability provided by the larger McKee-Farrar heads.

Different surgeons have varied practices: some universally adopt dual mobility, some use it primarily for revisions, and others, like yourself, choose it as a primary solution. Could you shed some light on your criteria for making this choice?

> Age is my primary determinant. The guidelines are straightforward: for patients under 50, the hard-on-hard pairing is recommended, and for those above 70, the hard-on-soft combination is advised. For ages in between, the decision is left to the surgeon's discretion. While I am partial to the ceramic pairing, I usually transition to dual mobility only when patients hit 70. But after revisiting the outcomes in 400 of my patients with ceramic pairs, I observed that 10% experienced squeaking. This isn't a negligible figure. Now, it's important to note that while many aren't perturbed by this minor sound, a few do find it bothersome. Consequently, I've occasionally reduced the threshold to 65 for dual mobility. I predict that in time, as we gain more insights and experience, we'll likely lean towards dual mobility for all, especially with the combination of highly cross-linked polyethylene and a ceramic head, ensuring patient satisfaction. The challenge right now with highly cross-linked polyethylene is the presence of multiple manufacturers who frequently modify their formulas, making it hard for us to accumulate consistent clinical experience.

Your inclination towards enhancing patient outcomes made you adopt Rapid Recovery After Surgery (RAAC) early on. How has your journey been with this approach?

> I have never been dogmatic about outpatient procedures, but if a patient is recovering well, it seemed logical to me that they should head home sooner rather than later. If we analyze the real intent behind prolonged hospitalization, it's to monitor and mitigate complications. So, what are the typical complications we see today? Dislocation, which used to be a major concern, is fast becoming a rarity. The times when we had to urgently intervene to address a dislocation seem to be behind us, especially in the Rhône-Alpes region. This decline can be attributed to our

increasing reliance on dual mobility and minimally invasive surgical techniques. Moreover, dislocations can happen irrespective of whether the patient is in a hospital or at home. In terms of infections, they seldom manifest before two weeks post-surgery. Hence, if the argument is to keep the patient hospitalized to monitor for infections, then a stay of less than two weeks is pointless.

Other complications like hematomas are rare, and on the off chance they do happen, we hardly ever need to readmit the patient for it. Falls? Patients are equally prone to them, whether they are at home or in the clinic. The added drawback with in-clinic falls is that they often lead to the clinic being blamed and potential lawsuits, while at-home incidents typically are considered the patient's responsibility. As for concerns like phlebitis or pulmonary embolism, the sooner a patient starts walking, the lesser their risk, and they are more likely to mobilize faster at home.

So, if we look at the bigger picture, retaining a patient for an 8-day period doesn't offer any tangible medical benefits. Based on these observations, one could argue that either the patient should be kept for a solid three weeks, which would allow monitoring for late-stage infections, or, as soon as they feel ready, they should be discharged. It's incumbent upon the surgeon and anesthetist to refine their techniques and management practices so that the patient feels ready to go home sooner. So, it stands to reason that the more efficient our procedures become, the shorter the hospital stay becomes for the patient.

While implementing RAAC required intensive collaborative efforts initially, once everyone adapted, the process became fairly straightforward. Currently, 20% of my prosthetic surgeries are performed on an outpatient basis, and a significant 75% of patients are discharged the next day. The remaining 5% have slightly extended hospital stays, typically those who live alone or need specialized care at a rehab center.

Turning our focus to hip surgery: you diversified your approach, integrating both conservative hip procedures like arthroscopy and traditional prosthetic hip surgeries. Can you shed light on this evolution?

Back in 2007, I attended a cadaver workshop in England facilitated by Richard Villar. I also took the time to visit and learn from several surgeons skilled in arthroplasty, including Thierry Boyer in Paris. Although I was gearing up for hip arthroplasty, I hesitated; I encountered many young patients with hip pain, likely due to impingement. But instead of rushing in, I observed and sought more knowledge. I started with two arthroscopic treatments for cam impingements. Although successful, the procedures eventually transitioned to mini Hueter. The peripheral-first approach I initially adopted, which I had learned from others, was challenging for me. Then, in January 2008, I visited Marc Philippon in Vail and spent about two weeks observing his practices post-Christmas. It was transformative! His central-first methodology, although somewhat unconventional in the French context, seemed much more intuitive and efficient for me. I experimented with other techniques, like the pericapsular-first approach with Fréderic Laude, but consistently found myself gravitating back to the central-first technique.

After another cadaver workshop, this time imbibing Philippon's technique, I felt confident enough to beckon sports doctors to refer patients for hip arthroscopies. In 2008 alone, I performed 35 of these procedures, and that number has consistently risen. That same year, I had the privilege of attending France's inaugural hip arthroscopy conference, orchestrated by Thierry Boyer, the brains behind ISHA. These sessions, although exhaustive, spanning about four hours (which was then the norm for hip arthroscopy), were tremendously insightful. Engaging with Boyer again and showcasing my approach led to my participation in SFA's first symposium on hip arthroscopy in late 2009.

> The subsequent journey has been exhilarating. Collaborating closely with luminaries like Thierry Boyer, Olivier May, Alexis Nogier, Jean-Emmanuel Gédouin, and Fréderic Laude, along with international stalwarts Richard Villar and Hassan Sadri, was enlightening. Our synergies culminated in the Winter Hip Course conference in Val d'Isère in 2013. The subsequent years felt like a pilgrimage. We traversed France, engaging orthopedic surgeons, radiologists, sports doctors, general practitioners, and rheumatologists. Our message was clear: to look beyond pubalgia and adductor tendinopathy and to recognize hip impingements. The mission was expansive and demanding, but absolutely worthwhile.

It's been over a decade since you embarked on this journey with hip impingement. Have you noticed a change in the recognition and diagnosis of this condition in France? Or do you believe it's still often overlooked or leads to delayed referrals to surgeons?

> There's been a noticeable advancement. Previously, by the time patients with arthroplanners came to me, they had already consulted 5 or 6 other physicians. The referral process has since expedited. Nowadays, I sometimes see patients who've had hip discomfort for merely a few months. In such cases, I typically advise a wait-and-watch approach, coupled with rehabilitation, as it might be premature to resort to surgical intervention. The situation in the Rhone Alpes region is certainly better, but I can't vouch for its uniformity across all regions. Some patients from remote areas have had to navigate through more hurdles before reaching me.

When it comes to diagnostics, what do you regard as the standard imaging procedure for detecting hip impingement?

> The foundational diagnostic tools are the standing pelvic X-ray and the Dunn or Ducroquet profile. MRI and arthrography play a secondary role. The combination of patient testimonials, clinical examinations, and basic X-rays yield about 80% of the diagnosis. Over time, I've become less reliant on arthrography. I now consistently opt for MRIs to minimize the chances of overlooking subtle diagnostic details. Arthrography is reserved for cases where there's significant uncertainty. More frequently, I use CT scans to discern bone anomalies and assess femoral torsions. I place great emphasis on understanding femoral torsions. Hence, when I request either an arthrography or a CT scan of the hip, I ensure that it also encompasses the knee area for an accurate assessment of these torsions. Requiring additional CT scans can be bothersome and exposes the patient to extra radiation, which I prefer to avoid.

How often do you resort to rotational osteotomies in your practice?

> Rotational osteotomies aren't a frequent occurrence in my practice. Although I am equipped to perform them using a standard nail, allowing patients to bear weight immediately, the recovery period can be quite challenging. The process involves rotating around the nail, occasionally accompanied by a slight varisation, executed through three minimal incisions. Yet, the postoperative period can be quite painful, leaving patients discomforted. This makes me contemplate deeply before suggesting this procedure. It’s a regrettable reality, but that's the situation.

In the realm of conservative treatments, do you believe that periacetabular osteotomies maintain a significant role?

> Hip dysplasia presented me with considerable challenges in the past. I did resort to bone grafting a few times. However, the outcomes were mixed at best. Using a bone graft, while you can address

> certain aspects of the problem, you can't comprehensively treat all facets of the condition. This is where periacetabular osteotomy (DTP) truly shines; it offers the flexibility to position the acetabulum optimally, allowing for the restoration of a near-normal hip function. When I faced complex cases in the past, I would often refer patients to Frédéric Laude in Paris for DTP procedures. Recognizing the value of having such expertise in-house, I brought on board Willaume Guicherd. He trained extensively under the guidance of renowned surgeons Michael Leunig in Switzerland and Johan Witt in England. His contributions have been nothing short of phenomenal. I firmly believe that, with our combined expertise, we can offer a comprehensive suite of conservative hip treatments prior to considering prosthetic interventions.

As we conclude our conversation, let's reflect on your distinctive journey. You began in Lyon, transitioned from knee surgery in Besançon, and then revolutionized hip surgery back in Lyon. Now, you stand as a prominent figure in academic societies, organizing conferences. Given this journey, what advice would you offer to an aspiring Nicolas Bonin — a young student from Lyon Sud — who hopes to follow in your footsteps?

> Guiding and mentoring future surgeons is a distinct privilege. One invaluable lesson I'd emphasize is the significance of maintaining relentless curiosity and sharp observation. For instance, even a shoulder surgery can offer insights relevant to hip procedures. This tenet of knowledge acquisition goes beyond orthopedics; insights from one surgical domain can enlighten another, spurring innovative thought and practice. It's essential to read widely, attend conferences, and engage in discussions with colleagues and mentors. These interactions not only broaden your horizons but also catalyze personal growth.

> Above all, take moments for introspection and reassess your techniques regularly. Seize every chance, stay adaptable, and remember that success in this domain hinges not only on prowess but also on an unquenchable desire to learn and the bravery to continuously evolve.