

ROBERT MERLE D'AUBIGNÉ AND THE JUDET BROTHERS, JEAN AND ROBERT: THE BIRTH OF MODERN ORTHOPEDIC SURGERY IN THE MIDDLE OF THE 20TH CENTURY

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SUMMARY

Background: The mid-twentieth century marked a critical transition for French orthopedic surgery as it evolved from a sub-specialty of general and pediatric surgery into an independent, highly specialized field. This development was necessitated by the increasing complexity of trauma and degenerative conditions following World War II and the requirement for standardized surgical training and dedicated clinical infrastructure.

Objective: This article documents the historical contributions of Robert Merle d'Aubigné, Jean Judet, and Robert Judet to the formalization of modern orthopedics in France, focusing on their roles in establishing specialized surgical centers, innovative techniques, and academic frameworks.

Key Points: Robert Merle d'Aubigné established the Léopold Ollier pavilion at Cochin Hospital, implementing a model of hyperspecialization across hip, knee, spine, and tumor surgery while introducing rigorous scientific methodology to surgical indications. Simultaneously, the Judet brothers introduced significant technical advancements, including the 1946 development of the acrylic resin femoral head prosthesis, which served as a precursor to modern hip arthroplasty. Their contributions further extended to quadricepsplasty for knee contractures, subperiosteal decortication for the treatment of pseudarthrosis, and the implementation of systematic neonatal screening for congenital hip dislocation. These two schools of thought—the rigorous, diagnostic-led approach of the Cochin School and the technical innovation of the Raymond Poincaré Hospital center—provided the foundation for contemporary orthopedic practice and education.

Conclusion: The integration of structured academic training with technical innovation by these three surgeons was instrumental in the recognition of orthopedic surgery as a distinct specialty, establishing clinical protocols and prosthetic concepts still relevant in modern musculoskeletal medicine.

KEYWORDS

Orthopedic Procedures; Arthroplasty, Replacement, Hip; History, 20th Century; France; Bone Neoplasms

Foreword :

This year, the French Society of Trauma and Orthopedic Surgery (SOFOT) celebrates its hundredth birthday: it has been a remarkable century full of French innovation in Trauma and Orthopedic Surgery. In the words of Gérard Lecerf, ‘throughout the 100 years of its existence, our Society has never stopped evolving’. Many colleagues have contributed to this evolution, but three men stand out, in particular, as having had a significant impact on our specialism in the middle of the twentieth century: Robert Merle D'Aubigné (1900-1989), Jean Judet (1905-1995), and Robert Judet (1909-1980). All three were junior residents with the Hôpitaux de Paris: in 1924, 1929, and 1931, respectively.

Robert Merle D'Aubigné made his mark by founding a large, modern centre for Orthopedic Surgery embracing diverse specialisms: today, they are viewed as hyperspecialisms (hip, knee, spine, hand, foot, and tumours). The inseparable Judet brothers were, for their part, responsible for a number of significant innovations: among them, the first series of hip replacements in 1946, quadricepsplasty for knee extension contracture, decortication and graft, as well as cementless THR. Our debt to them is great, indeed.

In this article, Philippe Marre, general secretary of the French Academy of Surgery, tells their story.

For this we thank him.

Jacques Caton

INTRODUCTION

Long marginalised by general surgery, seen as a single, indivisible domain, orthopedic surgery was born – and quickly expanded – in the aftermath of World War II. The boom in orthopedic surgery was embodied by three exceptional individuals in the field of surgery: Robert Merle d'Aubigné (Figs 2a and 2b) and the Judet brothers, Jean and Robert (Fig. 1, Figs 3a and 3b). Hard-working, passionate about their field, and endowed with great visionary intelligence, they trained a new generation of surgeons in the middle of the twentieth century. Moreover, the ways in which they organised orthopedic surgery in France, at that time, complemented each other greatly.



Fig. 1 : Jean, Henri and Robert Judet.

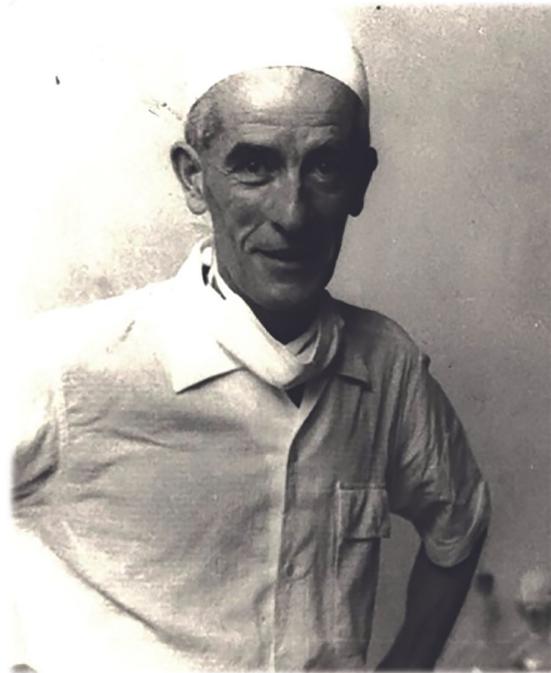


Fig. 2a and b : Robert Merle d'Aubigné.



Fig. 2a and b : Robert Merle d'Aubigné.



Fig. 3a and b : Jean et Robert Judet.



Fig. 3a and b : Jean et Robert Judet.

Robert Merle d'Aubigné (Fig. 4) was imbued with the Protestant work ethic, marked by rigour and perfectionism. Inspired by Anglo-influenced pragmatism, his natural charm facilitated his approach. His **panache** led his favourite teacher, Paul Lecène, to call him the 'partisan'. Interested in all aspects of orthopedic surgery, he excelled, nonetheless, in implementing specialisms: his significant influence can be felt to this day. In the way he organised teaching, training, research, and planning care, he always encouraged the progressive diversification of the nascent specialism in the form of multiple sub-specialisms. At the very start of his surgical practice, driven by the project to build a large, modern centre for corrective surgery in Paris which would match those abroad, he visited Böhler in Vienna and Putti in Bologna. Later, he would visit Watson-Jones in London.



Fig. 4 : 1927 Robert Merle d'Aubigné – Junior Resident at La Pitié-Salpêtrière Hospital.

In contrast stood the Judet brothers. Firstly, they were a duo. It was as a duo that they built their reputation, both at home and abroad, whilst managing to maintain their individual personality and professional identity. They were introduced to surgery by their father, Henri Judet, who came from near Limoges and was one of the first orthopedic surgeons to set up in Paris. Jean Judet dedicated himself to pediatric orthopedics, while Robert dedicated himself to adult orthopedics. As such, the two were one: when Robert – the younger of the two – died prematurely, Jean was like an orphan, bereft of his ever-present partner. The Judet brothers represented ceaseless innovation and a profusion of ideas – some good, some bad – which they would discuss, discard, and return to, such that when one of their ideas came to fruition, it was impossible to say which of the two was responsible for the original idea. Theirs was an intense, creative collaboration ceaselessly driven by their shared passion: using orthopedics to serve patients.

THE BEGINNING OF THE TWENTIETH CENTURY AND THE DEVELOPMENT OF MODERN ORTHOPEDIC SURGERY

Born at the beginning of the the twentieth century, Robert Merle d'Aubigné (in 1900), Jean Judet (in 1905), and Robert Judet (in 1909), would go on to embody and ultimately symbolise modern orthopedic surgery in France in the middle of the 1900s. What a long way they travelled after their brilliant medical studies to reach that position. Appointed as junior residents in 1924, 1929, and 1931 respectively, it is strange that all three of them, each for different reasons, hesitated over becoming surgeons. When they did make their minds up, they committed themselves to surgery completely and received the very general training available at that time. Quite quickly, however, the three of them turned to orthopedic surgery: Robert Merle d'Aubigné (Fig. 6) did so for personal reasons, while the Judet brothers wished to follow in the footsteps of their father, Henri (Fig. 5). 'We could not disappoint', they recalled.



Fig. 5 : Henri Judet.



Fig. 6 : Robert Merle d'Aubigné.

At that time, orthopedic surgery was only recognised as a separate field within pediatric surgery departments, where it represented a major share of the work done, particularly under Pierre Fredet and Louis Ombredanne. In adult surgery departments, the majority of work involved visceral surgery. In this light, there was only one adult orthopedic surgery department in Paris in 1930: it was run by Henri Judet's friend, Paul Mathieu, who had become professor of orthopedic surgery in 1930 and who ran the adult orthopedic surgery department in the Lister Pavillion of Cochin Hospital from 1931.

FROM LÉOPOLD OLLIER TO ROBERT MERLE D'AUBIGNÉ AND THE JUDET BROTHERS



Fig. 8 : Bust of Léopold Ollier.

After a long process, osteoarticular surgery had only really developed from the end of the nineteenth century, driven by strong – but rare – characters such as Léopold Ollier (Fig. 8). Ollier became the champion of conservative orthopedic surgery as opposed to that ‘mutilating’ surgery inherited from the French wars of Revolution and Empire. Up to that point, the treatment of trauma and infirmity had scarcely evolved further than the work of Guy de Chauliac in the fourteenth century or beyond that of Ambroise Paré in the sixteenth century. Significantly, in their time, the word to designate the field did not exist. Indeed, it was in 1741 that a doctor, Nicolas Andry, Dean of the Paris Faculty of Medicine, came up with the term ‘**orthopédie**’ to cover treatment methods for infirmity in children, giving rise to the term used today. However, it would take more than a century for the term ‘orthopedics’ to eventually be understood as covering all methods – whether surgical or not – for treating trauma and infirmity in both children and adults. More precisely, the accepted term was ‘orthopedic surgery’.

Whilst orthopedics would only be recognized as a specialism in 1983, it had begun to attract more and more surgeons thanks to the progress it was making. On 8 October 1918, when the end of World War I was firmly in sight, Édouard Kirmisson, professor of pediatric surgery, assembled around twenty surgeons, under the auspices of the French Congress of Surgery, and founded the French Society of Orthopedics (**SFO**). Henri Judet was one of its founding members. In 1937, the **SFO** became **SFOT** – the French Society of Orthopedics and Trauma, which, in turn, became **SOFCOT** – the French Society of Orthopedic and Trauma Surgery, in 1968. The original **SFO** would continue to be headed by pediatric surgeons until the inauguration of Paul Mathieu in 1933-34, which thus constituted the coming-of-age of orthopedic surgery for adults.

Robert Merle d'Aubigné devoted himself to passing the competitive exams run by hospitals and universities. Having observed the limitations of orthopedic training in the departments of general adult surgery, at the end of his junior residency, he sought an assistantship in a general surgery department with a view to developing orthopedics. Following a brilliant year – earning a gold medal – under Paul Lecène, d'Aubigné became his

assistant. With Lecène's tragic death in the Autumn of 1929, d'Aubigné was taken under the wing of Pierre Duval, and he became his assistant until 1943, having been appointed as hospital surgeon in 1936.

The Judet brothers set out on the same path, a few years later, following more specific training in orthopedics. On the one hand, they received this from André Richard at Berck and then at St Louis, and from Paul Mathieu at Cochin, but also, on the other hand, from their father. Henri Judet passed on to them his dynamism and his passion for innovation. In 1935, with a significant number of patients, he had built a small clinic with forty beds on **square Desaix** in Paris, from which base Henri Judet became Head of our Society in 1938. His curiosity had led him to take a particular interest in the physiopathology of joint cartilage and to promote various techniques, such as the use of external fixation as pioneered by the Belgian surgeon, Alain Lambotte (which his son, Jean Judet, would go on to improve).

Jean Judet was encouraged, very early on, to take up pediatric orthopedic surgery by Louis Ombredanne, whose assistant he indeed became. Robert Judet became Paul Mathieu's assistant, but took the route of adult orthopedic surgery. They were both heavily influenced by Louis Houdard: having spent a fascinating semester as junior residents under Houdard, they would remain in close contact with him thereafter.

WORLD WAR II (1939-45)

The Second World War interrupted these various courses of study, but it also shook up the old order and so paved the way for young talent to bring about their projects. Having successfully acquitted themselves at the head of their respective ambulance services in 1939-40, they were hurt by the disaster of 1940 but resumed their work in the Resistance. Demobilised from the French Army, Robert Merle d'Aubigné split his time between Pierre Duval's department and the **Clinique des Diaconesses**, creating closer ties with the network of Louis Pasteur Valery-Radot, Robert Debré, and Paul Milliez.

The Judet brothers, having been captured, quickly escaped from the train carrying them to Germany, and resumed their hospital posts: Jean worked under Jacques Leveuf, Louis Ombredanne's successor, whilst Robert worked under Paul Mathieu and then Louis Houdard. They worked frequently at the Desaix clinic, which they began to manage in 1942, on the death of their father: here, they treated many 'clandestine' casualties, members of the Resistance, and British or American airmen. Indeed, in this light, shortly before the Liberation of France, Robert Judet ran into trouble with the Gestapo. He was subjected to questioning for a whole day, to no avail, and was finally released in the evening. According to his brother, he went into an epic rage and demanded that he be driven to the clinic, where his patients had been waiting for him since that morning. A Gestapo car, from outside the Ministry of the Interior, duly delivered him to his clinic.

The Liberation of France in 1944, and the Armistice in 1945, had a liberating effect on each of them, both on a personal level and on a professional level. Having actively participated in the Liberation of Paris, they would all go on to follow a different path. Robert Judet joined the First French Army, and did remarkable work during the Battle of Alsace (in the Winter of 1944-45) at the head of an ambulance service with Claude Houdard, the nephew of his teacher, Louis Houdard. With Robert away, Jean Judet fulfilled their responsibilities, both private and public.

ROBERT MERLE D'AUBIGNÉ AND HIS SCHOOL



Fig. 9 : Chez Merle D'Aubigné.

This period of great upheaval was an opportunity for Robert Merle d'Aubigné to begin to truly blossom. During the Battle of France, he was in communication with those in charge of the medical units of the British and American forces, and he guided them in their choice of military hospitals, namely Beaujon Hospital (Fig. 7a) and Foch Hospital. He also advised them on how medics from the **FFI** (French Forces of the Interior) and – later – from the **FTP** (another component of the French Resistance) might be integrated into the French army. Having earned their trust, he managed – together with Pierre Lance – to visit Britain, where he saw how civilian and military hospitals treated casualties. This would give him inspiration in building similar establishments in France: what he liked about the British was their ‘rigour and discrete generosity’.



Fig. 7a, : Beaujon Hospital.

For d'Aubigné, this time was a whirlwind. From the summer of 1945, at Foch Hospital (Fig. 7b) he assembled a dynamic, motivated team, most of whom would follow him wherever he went, namely: Robert Meary, Michel Postel, Jacques Ramadier, as well as Roger Timal and Louis Descamps, not forgetting the already essential role played by the anesthetists Édouard Kern and Jean Lassner. However, when the British and Americans left, they put Paul Padovani in charge of Foch, and so d'Aubigné moved to Léopold Bellan Hospital before taking over from Paul Mathieu at Cochin Hospital (Fig. 7c). Indeed, he was appointed as Associate Professor in 1946; he was soon appointed as Professor of Orthopedic Surgery (in 1948), and then took over from Paul Mathieu in Cochin's outdated Lister pavillion.



Fig. 7b, c : Foch Hospital and Cochin Hospital.



Fig. 7b, c : Foch Hospital and Cochin Hospital.

Suspecting that he could, at Cochin, freely achieve his plan to build a large, modern centre in Paris for adult corrective surgery, he turned down two offers. Firstly, he was offered the role of looking after the pediatric surgery department for Sick Children, which had been built just before the beginning of WW II. Secondly, he was given the option of being financed – indirectly – by the newly-created French Social Security system, by which he feared being limited. In the end, by pulling out all the stops, he realised his ambition in 1959, with the inauguration of a new building which he named the Léopold Ollier pavillion. On the frontispeice of the new pavillion, at d'Aubigné's behest, was engraved – in Greek – the proud motto of his venerated teacher, Paul Lecène: 'Words are but the shadow of action.' To show their gratitude, and in honour of the new pavillion, the people of Lyon gave him a bust of Léopold Ollier.

Aware of the importance of pediatric surgery, in terms of how it would complement his project, d'Aubigné cultured a productive partnership with the team of Pierre Petit, whose St-Vincent-de-Paul Hospital department was close to Cochin Hospital. Diversification in his team was enriched by this collaboration, not least through Robert Meary (who became the contact for foot surgery and bone tumours), Michel Postel (the contact for the hip and the knee), Jacques Ramadier (the contact for the spine), and Raoul Tubiana (the contact for the hand). Moreover, each of these individuals contributed to teaching the many students they had, both homegrown and from outside France. Jacques Duparc, for example, followed the teaching of the Cochin school at Bichat Hospital. In this way, d'Aubigné was able to take an interest in all aspects of orthopedics, including anesthesia, resuscitation, and rehabilitation. The department's work gave rise to many publications with its students, with each one focussing on their preferred area. For all this, the role played by d'Aubigné in the budding specialism of orthopedic surgery was particularly essential in the way in which he organised, promoted, and communicated that specialism. As a head of school, he was exceptional: he provided the rigour and decisiveness necessary for developing diagnostic and therapeutic methods that could be used by all to produce surgical indications based on science.

ROBERT AND JEAN JUDET: THE BROTHERS SYNONYMOUS WITH INNOVATION

After the end of WW II, the Judet brothers split their time between the Desaix clinic and their hospital work. Jean worked in the Sick Children's unit, where he dealt with pediatric orthopedics under Jacques Leveuf (until his death in 1948), under Marcel Fèvre (until he retired in 1970), and then under Denys Pellerin. Robert worked with Louis Houdard, who had put him in charge of adult orthopedic surgery in his department.

It was in 1946 that the Judet brothers came up with a revolutionary solution in the treatment of debilitating hip conditions, both degenerative and trauma-induced, by developing a femoral prosthesis using acrylic resin (Fig. 11).



Fig. 11 : Acrylic femoral prosthesis (1946).

The time was ripe for this concept. The idea became reality through an encounter with an ENT surgeon, the father of their student Pierre Rigault, who had been fitting small acrylic-resin prostheses that were perfectly tolerated by the body. Initially, the Judet brothers' prostheses were custom-made by a local craftsman. The first prosthesis was fitted at the Desaix clinic to treat osteoarthritis, and the second was fitted at Rothschild Hospital for a fracture. In the space of a year, the Judet brothers fitted six prostheses, all using an anterior approach. The impact made by this innovation was considerable, both in France and beyond.

Some 35 years later, Michel Postel would hail this period in these terms: 'In order for prosthetic hip surgery to come into being, it took a stroke of genius and daring that can seem – by today's standards – routine. But this marked the beginning of modern hip surgery.' The Judet brothers would thereafter owe their reputation to this initial success, which would, moreover, provide a boost for their work and the many innovations to follow. Indeed, they would have to move from the clinic on **square Desaix** to the present clinic known as 'Judet house' on **square Jouvenet**. The new clinic was built by stone-masons from the Creuse, the region in which they were born and to which, life-long, they remained very attached. It was inaugurated in 1957, and descendants of the Judet brothers are still working there, to this day.

Robert Judet was appointed hospital surgeon in 1951, Associate Professor in 1953, and head of a small, peripheral department at Raymond Poincaré Hospital in 1956. In 1962, he was appointed professor of orthopedic surgery, with the support of d'Aubigné, who wrote the following: 'We were rivals only in terms of the esteem and affection of our students. He needed a leadership role. I suggested to the Faculty Council that they create a third chair of orthopedic surgery (after mine in 1948 and that of Paul Padovani in 1961) for the man who, by virtue of his personality and his talent for teaching, had quickly made his mark on both students and fellow teachers alike.' And so he would go on to transform his little department into a large, modern, internationally renowned centre with 230 beds for corrective surgery. It catered for all aspects of orthopedics and housed a prestigious team that evolved over time and included, in particular, Gérald Lord, Jean Lagrange, Pierre Rigault, Raymond Roy-Camille, Émile Letournel, Jean-Claude Pouliquen, and a good many other students and friends from France and beyond. Twenty years after his passing, the torch of this department would be taken up by his son, Thierry Judet.

The Judet brothers compounded their intellectual rigour with great manual dexterity, a legacy from the anatomy pavillion, and with their exceptional capacity for innovation in all fields of orthopedics. Whilst many of their

innovations were forgotten – whether in favour of better solutions or because times changed and things moved on, some of them remain with us. For example, we still have hip replacement (where many later models followed the original prosthesis) and knee replacement. We still have knee ligament reconstruction. We still have early intervention in acute post-operative infections. We still have subperiosteal decortication for pseudarthrosis.

We also still have disinsertion of the quadriceps for stiffness in the knee. In fact, the idea for this came to Jean Judet during a break at an international congress, where he had just given a paper on knee surgery that raised more questions than it provided answers. We also still have the systematic examination for hip dislocation in newborns: Jean Judet had convinced the French health secretary of the time, Marie-Madeleine Dienesch, of the need for this. Thus we see that the Judet brothers together constituted a head of school, and a great one. Their creative imagination enriched and complemented what the rigour of the Cochin School occasionally quelled.

Whilst the fierce competition between the two schools - intellectual, moral, and technical – was very stimulating for them both, it was controlled. Everyone knew each other and had great respect for one another: they preferred to re-direct their rivalry and play it out in the form of sport. We see this compounded by Michel Postel (Fig. 12), when he writes: ‘Their sparring – whether in public debate or by letter – was beneficial for all, but was only possible and tolerable because it contributed to their growing mutual respect.’



Fig. 12 : Michel Postel.

EPILOGUE

Appointed head of **SOFCOT** in 1973, honorary member of many an international learned association, Robert Judet passed away suddenly, in his prime, in 1980. D'Aubigné celebrated ‘the memory of this indomitable man and excellent debater, who, besides his physical strength, intelligence, and originality, possessed an ability to charm that verged on the magical’. Charnley (Fig. 10) wrote: ‘France has produced many great orthopedic surgeons, but Robert Judet is certainly the best-known among them.’



Fig. 10 : The Cochin School with Charnley in Manchester.

D'Aubigné enjoyed an end to his professional life that was recognised by many honours: he became head of **SOFCOT** in 1959, head of **SICOT** in 1966, and he was a member of the French Academy of Surgery, the French Academy of Medicine, and the French Academy of Sciences (taking the chair of Gaston Cordier, who had taken over from Henri Mondor), and honorary member of many international learned associations. From 1970, he shared a very active retirement between his house in Fontainebleau, his boat '**Anémone**', and tending his orange trees in Alicante (being no longer able to pursue climbing, one of his great passions). He passed away in 1989. Michel Postel celebrated 'the creator of a completely new French school of surgery, who moved heaven and earth to build the department at Cochin Hospital'. Régis Lisfranc was struck by his 'panache', recalling the image of a tousle-haired d'Aubigné driving his convertible Aston Martin.

Jean Judet never really got over the passing of his brother, Robert: 'Throughout our life together, we did not fall out for even a minute.' Jean would also write: 'For me, courage took effort, but it came naturally to him.' Appointed head of **SOFCOT** in 1965, honorary member of many international learned associations, he headed our association happily in 1986 and passed away in 1995. His student, Pierre Rigault, paid him this heartfelt eulogy: 'Jean was an exceptional man, elegant in appearance, distinguished, and quite charming. He could also be whimsical. Above all, he was a big-hearted man, warm in his dealings with his patients and their families, and he was adored, if not venerated, in return by those to whom he was so attentive. Courteous, never angry, he could gain the trust of his patients, whom he knew so well, and the appreciation of their friends and families.' In this fine portrait, one might recognise the features of our current head, his son.

Naturally, these three great figures of French orthopedic surgery (Fig. 13) each had their dark times, as we all do. In conclusion, having all too briefly outlined the light they brought, let us summarise their exploits in a maxim for the generations following them: 'They did not know it was impossible, so they did it.'



Fig. 13 : Raymond Roy-Camille, Henri Judet, Robert Judet.