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INSIDE



SHORT CEMENTLESS HIP STEMS

Short femoral stems can help preserve the trochanter and ring of the femoral neck.

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BALLOON KYPHOPLASTY

A recent study shows the technique provides pain relief and functional improvement in patients with osteolytic vertebral fractures caused by multiple myeloma.

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RESIDENCY TRAINING IN GERMANY

Two orthopaedists who trained in Germany explain why many young surgeons there are seeking opportunities outside the country.

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COMMENTARY



René Verdonk, MD, PhD, asks: Are orthopaedic surgeons involved in organ or tissue transplantation?

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Future TKA may include 'smart' implants, robotics, more alternative bearing surfaces

Orthopaedic surgeons performing total knee arthroplasty 10 years from now will likely approach the procedure with different tools and implants that feature various technological advances.

For example, "Highly crosslinked polyethylene may be more frequently used in the future when the cost increase is contained," said **Jean-Yves Jenny, MD**, who, along with other leaders in the field of total knee arthro-

plasty (TKA), spoke on the subject at the 9th Annual Advances in Arthritis, Arthroplasty and Trauma Course.

Other advances could include a "smart" implant that communicates information about forces, wear and gait cycles to a physician; more accurate computer navigation instruments; and a return of passive or semi-active robotic surgical tools.

Stories begin on page 5.



Robotic systems such as the modiCAS (modiCAS Ltd.) may be a vital tool in the future joint replacement clinic.

Lyon surgeons, clinics helped shape French orthopaedic care

The city of Lyon, France, boasts a storied history of orthopaedic advances, led by the late knee specialist Albert Trillat, MD, and his successor, Henri DeJour, MD. Through the decades, a number of Lyon orthopaedic surgeons made their mark in joint reconstruction, sports medicine, arthroscopy, spine surgery and shoulder care. Their teachings eventually extended beyond the city and country borders and influenced other orthopaedists throughout the world.



Scenic Lyon is one of France's orthopaedic hubs.

In this issue, we discuss the legacy of the University of Lyon and its neighboring orthopaedic clinics in our *Pioneer Clinics* series.

Story begins on page 14.

Similar results found in TKA patients with resurfaced vs. native patellae

A review of patients undergoing total knee arthroplasty revealed no significant differences in patient satisfaction, International Knee Society revision scores or clinical anterior knee pain scores at 4-year follow-up regardless of whether they had their patella resurfaced as part of the proce-

sure. Using the Visual Analog Scale (VAS), the French research team also found no significant differences in patellar scores between patients with resurfaced patellae versus those without resurfacing. The investigators used the VAS to assess femoropatellar pain.

See story on page 9.

Postcard from China: OTE editor reflects on recent Olympics

As a member of the International Olympic Committee Medical Commission Games Group, **ORTHOPAEDICS TODAY EUROPE Associate Editor Per Renström, MD, PhD**, coordinates the medical services for the world's top athletes. He also conducts sports injury research with an International Olympic Committee research group using data from the Olympic Games.

Renström said the 2008 Olympics in China "were probably the best games ever" from an organizational standpoint, and the Chinese physicians and medical staff "did a great job with it. As a whole, [the medical service] functioned well, and I think the athletes and the coaches were happy with the service."

See story on page 10.



Per Renström

Spirit of collaboration in Lyon produces widely respected ACL, knee, PF joint work

Teachings from Trillat and current leaders in Lyon, France, led to many key orthopaedic advances.

by **Susan M. Rapp**

ORTHOPAEDICS TODAY EUROPE SENIOR WRITER

The history of orthopaedic surgery in the teaching hospitals of Lyon, France,

dates to the late 19th century and possibly earlier. By one account, an elderly resident of one of Lyon's parishes coined the term "orthopaedic," which means "straight children," after observing physicians treating pediat-

ric deformities in the mid-1700s.

Thus began the city's long orthopaedic tradition, which continues today in the many talented surgeons working throughout Lyon.

During the past century, several Lyonnaise physicians emerged as pioneers, researchers, analysts, clinicians, leaders or mentors. Their individual and collective contributions helped establish the "Lyon School" and the rich orthopaedic history of France's third-largest city.

Being the best

The city's motto, *En avant, en avant, Lyon le meilleur*, which translates to "Forward, forward, Lyon the best," must have been a tenet early orthopaedists took to heart, since some say musculoskeletal innovations that came out of the city are unmatched.

"In the Lyon School, we have different fields which are very strong," including work on the meniscus, ACL, patellofemoral problems, knee osteoarthritis (OA), total knee replacement (TKR) and unicompartmental knee replacement (UKR), said **David DeJour, MD**, son of Lyonnaise orthopaedist **Henri DeJour, MD**.

"There is another part [of our history] which **Gilles Walch, MD**, developed: the shoulder," DeJour added.

Specialty areas

Bernard J.-L. Moyen, MD, chief of the orthopaedic department at Centre Hospitalier Lyon-Sud, told ORTHOPAEDICS TODAY EUROPE that the more recent orthopaedic history in Lyon includes a broad array of developments. He and **Jean-Luc Lerat, MD**, took over the facilities in more recent years.

Among the specialty areas Moyen discussed were primary and revision hip procedures, performing transplants via microsurgery and hand surgery, and how he and Lerat developed the use of passive stress radiographs to measure and classify knee laxity.

As a promising young orthopaedic surgeon in the 1970s, Moyen traveled to Massachusetts General Hospital in Boston and trained under **William H. Harris, MD**.

"I [did] research on bone remodeling [using] plating and electrical bone stimulation," said Moyen, who was also a clinical and research fellow at Harvard Medical School.

Patellofemoral joint

A few medical accomplishments from Lyon stand out above the rest to



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Elizabeth A. Arendt, MD, of Minneapolis, U.S.A.

"The Lyon School has made outstanding contributions to our understanding of patellofemoral joint anatomy and pathomechanics," she said.

Arendt considers the University of Lyon's system of analysis to be a major contribution, describing it as "a methodical dissection of a problem with specific attention to radiographic analysis (including the trochlear dysplasia classification), linking these factors to their outcomes and basing surgical decisions on these detailed analyses."

According to **René Verdonk, MD, PhD**, chairman of the ORTHOPAEDICS TODAY EUROPE Editorial Advisory Board, "The Lyon School of orthopaedics investigated patellar pathology and trochlear physiology and led the way in Europe long before this knowledge was catching on in the United States and elsewhere."

He credited Henri DeJour; Gerard Deschamps, MD; and Pierre Chambat, MD, now in private practice, for advancing TKR innovation and introducing sports medicine to the city's orthopaedic services.



Bernard J-L. Moyen, MD, (left) and his friend and fellow orthopaedist **Jean-Luc Lerat, MD**, worked at Centre Hospitalier Lyon-Sud. Moyen is credited with bringing arthroscopy to Lyon. *Image: Moyen BJ-L*

"Their biggest success was to originate a registry of patients they could follow over long periods of time," Verdonk said, noting that **Philippe Neyret, MD, PhD**, continues to follow these patients.

Trillat's legacy

During Lyon's early orthopaedic history, surgeons at various clinics and hospitals made rapid advances in adult trauma and limb-preserving methods for treating bone and soft tissue infections. Their spirit of inquiry and interest in solving problems was passed down from professor to student, and probably the best example of this was the work of Albert Trillat, MD.

A professor at the university hospital, Trillat initiated Lyon's sports medicine and knee surgery specialties, re-

portedly performing the first TKR. In 1971, he launched a new meeting, the *Journées Lyonnaises de Chirurgie du Genou*, which is extremely popular and is still held today.

"He described what we call the 'no-touch technique,'" and was among the first to place only instruments inside the joint rather than his fingers, DeJour said. "This was quite novel."

ISAKOS connection

In 1979, Trillat started the first In-

ternational Society of the Knee congress, which evolved into ISAKOS, the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine. The organization still awards a prize in his honor – the Albert Trillat Young Investigators Award – at its biennial meeting.

Many still associate Lyon with Trillat's early meniscal work. "His tear classification has been quite well known," David DeJour said.

Henri DeJour succeeded Trillat at

Lyon's Hospital E. Herriot after his retirement. He identified knee surgeon Gilles Bousquet, MD, and shoulder surgeons Gilles Walch, MD, and Paul Grammont, MD, as other important students of Trillat.

According to Neyret, those who enhanced the local reputation by organizing meetings, developing surgical techniques or designing implants in private practice or at the university include David DeJour; Michel Bonnin, MD; Tarik

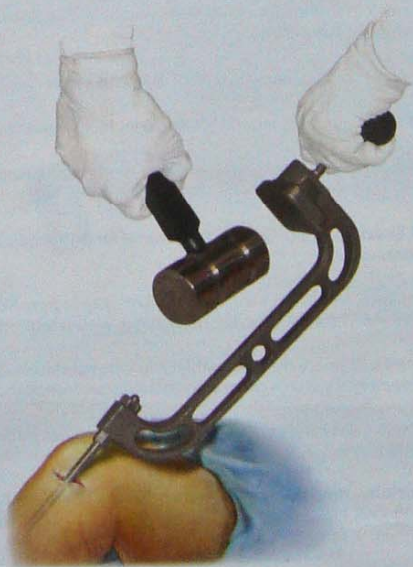
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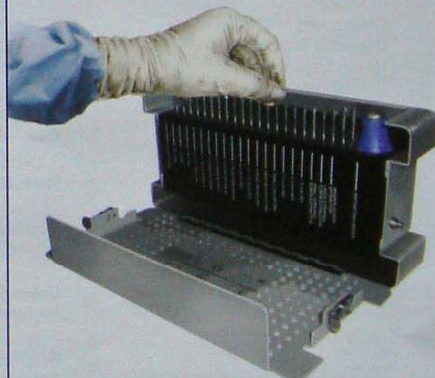
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Lyon

(continued from page 15)

Aitsiselmi, MD; Roger Badet, MD; and Gerard Deschamps, MD. Neyret also recognized Walch's work in the shoulder as "foundational."

UKR innovation

Henri DeJour and Deschamps adopted some of Cartier's ideas for unicompartmental knee replacement (UKR), refined the indications and developed a prosthesis in cooperation with Tornier, a French company. This eventually garnered greater worldwide acceptance of UKR as a knee OA treatment, Neyret told ORTHOPAEDICS TODAY EUROPE.

"The Tornier 'uni' gives excellent results on medial but also lateral compartment [OA]," he said.

Despite different orthopaedic factions in Lyon over the years, there have been few conflicts. Instead, a spirit of cooperation and collaboration has prevailed through interactions with international orthopaedic departments, Neyret said.

Related to that sense of community collaboration is the importance that travelling fellows with the American Orthopaedic Society for Sports



This photo shows attendees at the 1977 Journées Lyonnaises de Chirurgie du Genou meeting. It was established by Trillat in 1971 and is still held today. Image: DeJour D

Medicine and the European Society of Sport Traumatology, Knee Surgery and Arthroscopy placed on learning from others, he added.

"It is much more interesting to share experiences than to compete or fight in such a midsize city as Lyon," Neyret said.

Sports medicine

Many team sports, particularly football, are popular in the Lyon region, so a solid sports medicine tradition developed in the city. Moyen, who learned knee arthroscopy in Boston, was the knee surgeon for the city's professional

football team, Olympique Lyonnais, and has been on the team's board for 25 years. According to David DeJour, Chambat served as the French national ski team's knee surgeon.

Verdonk said current leaders in Lyon include David DeJour and Neyret, who heads the University of Lyon orthopaedic department. "Prof. Neyret is expanding this Lyon heritage and leading it into the future."

Neyret expects Lyon's orthopaedic future to be very interesting. He said developers are working on more anatomic TKR and UKR designs, ankle replacement prostheses and improved navigation techniques for knee replacements and lower extremity osteotomies.

"We are also working on the analysis of the usual technique of medial patellofemoral ligament and ACL reconstruction to be able to perform it through less-invasive surgery," Neyret said.

They are also exploring the po-



Gilles Bousquet, Albert Trillat and Henri DeJour, shown left to right, were orthopaedic leaders in Lyon during the last century. DeJour's son, David, is now considered a worldwide expert in treating patellofemoral problems and performing trochleoplasty. Image: Lerat J-L

tential risks and benefits of TKR for younger patients, and they are developing a double-bundle ACL technique and OA and patellar instability treatments, David DeJour said. **OTE**

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