

# The History of the Anterior Approach to the Hip

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## KEYWORDS

- Hip • Anterior approach • History
- Minimally invasive • Anatomy

*No, 'tis not so deep as a well,  
nor so wide as a church-door;  
but 'tis enough, 'twill serve.  
(Shakespeare, Romeo and Juliet)*

The anterior approach to the hip takes advantage of the interval between the sartorius muscle and the tensor fascia lata muscle to access the hip joint. The upper aspect of this approach provides visualization of and access to the entire ileum and hip joint. Nearly all surgery of the hip can be performed through this approach or through different portions of the approach. The anterior approach remains a standard approach to the hip in pediatric orthopedic surgery for developmental hip dysplasia, whereas in adult orthopedic surgery it is used mostly to expose the anterolateral aspect of the femoral head, the femoral neck, and the anterior aspect of the acetabulum to treat femoral head fractures, for biopsy, or for excision of ectopic bone.<sup>1</sup> With increasing interest in femoroacetabular impingement, hip resurfacing, and minimally invasive total hip arthroplasty, the anterior approach has regained popularity as a versatile approach to the hip in adult orthopedic patients. To refocus the knowledge about and interest in the anterior approach, a foray into its history might be useful.

## DEFINITION

Surgical approaches are anatomic dissections of tissue planes that use anatomic knowledge to limit the amount of dissection required to perform the procedure while avoiding nerve and vessel damage.<sup>1</sup> Anatomically, the hip can be approached from various directions—posterior, anterolateral, lateral, lateral transtrochanteric, medial, or anterior—and each approach has advantages and disadvantages. These various approaches to the hip are associated with many eponyms, usually a tribute to the originating surgeon. This article focuses on the anterior approach to the hip joint, as defined by the interval between the sartorius and tensor fasciae latae, commonly referred to as the “Smith-Petersen approach” or the “Hueter approach.”<sup>1</sup>

## HISTORY

Published accounts do not necessarily describe all the original attempts and successes of a surgical technique. Fully aware of these limitations, the authors have made a sincere attempt to obtain the original written sources and to interpret them correctly. They apologize if any significant contributions were misunderstood or neglected; no disrespect is intended.

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The first written description of the anterior approach to the hip might be attributed to Carl Hueter, a German surgeon, author of several medical articles and books, and a member of the German Imperial Diet.<sup>2</sup> Hueter was born in Marburg, on November 27, 1838, where his father, Karl Christoph Hueter, served as professor of surgery and gynecology. He began studying medicine in 1854, at the age of 16 years, and was promoted to medical doctor in 1858, while in Kassel, following educational journeys to Vienna, Berlin, England, and Scotland. Hueter later worked at the Anatomic Institute in Paris from 1861 to 1863, studying human joints. He went on to serve as an assistant to Virchow and later Langenbeck before obtaining academic accreditation in 1868.<sup>3</sup> Other surgeons, such as Bernhard Bardenheuer (1839–1913), Otto Gerhard Karl Sprengel (1852–1915), and Larghi, have been mentioned as possible originators of the anterior approach, but Hueter's classic work, *Der Grundriß der Chirurgie (The Compendium of Surgery)*, published in 1881 (Fig. 1), is the first to describe the anterior approach to the hip<sup>4,5</sup> as used today:

*The anterior oblique incision for resectio coxae was first performed by Lücke and then by Max Schede. I have adopted this*

*incision with a modification that I will explain later on. Following numerous experiences in the living and dead I have established the method as follows.*

*Define the anterior iliac spine and the tip of the greater trochanter. Halve the line between the two points and pierce the tip of the knife in the middle of this line with the blade directed caudally and somewhat inferiorly. The incision is directed parallel to the outer border of the Sartorius muscle (see Fig. 1), but somewhat external; in children 6–8 cm, in adults relative to muscular development 10–15 cm. It falls into the muscular interstice between m. sartorius on one side and m. tensor fasciae latae and m. gluteus medius on the other side, and meets the fibers of the m. vastus lateralis, which originate at the anterior face of the trochanter major at the base of the femoral neck. Those fibers have to be detached by knife or elevator; but it is the only muscle which is injured through the operation; and only in a small part of its fibers. Knife and elevator pierce into the anterior face of the major trochanter and the femoral neck. At the lower border of the femoral neck preference has to be given to the elevator to prevent transection of the anterior circumflex artery.*

GRUNDRISS  
DER  
**CHIRURGIE**

VON  
DR. C. HUETER,  
WEIL. PROFESSOR DER CHIRURGIE IN GIESSEN.

Zweite sorgfältig durchgesehene Auflage

VON  
PROF. DR. HERMANN LOSSEN  
IN HEIDELBERG.

II. BAND.  
SPECIELLER THEIL

ERSTE ABTHEILUNG.  
Die chirurgischen Krankheiten des Kopfes.

MIT 108 ABBILDUNGEN.

LEIPZIG,  
VERLAG VON F.C.W. VOGEL.  
1883.

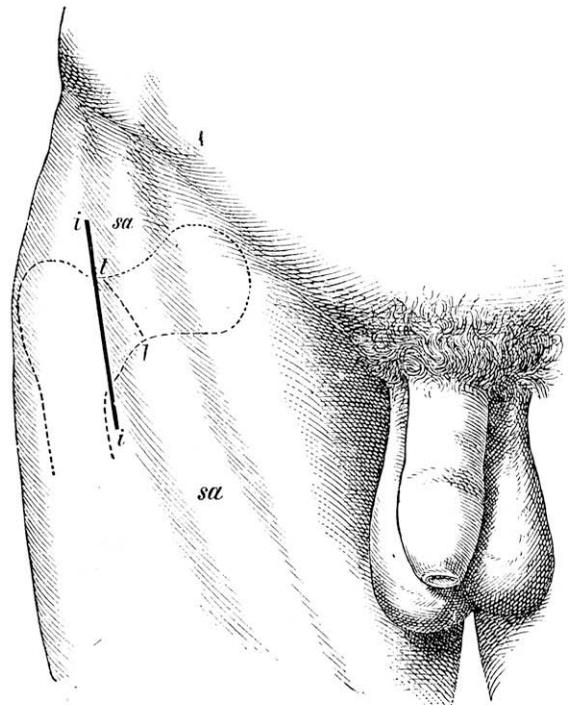
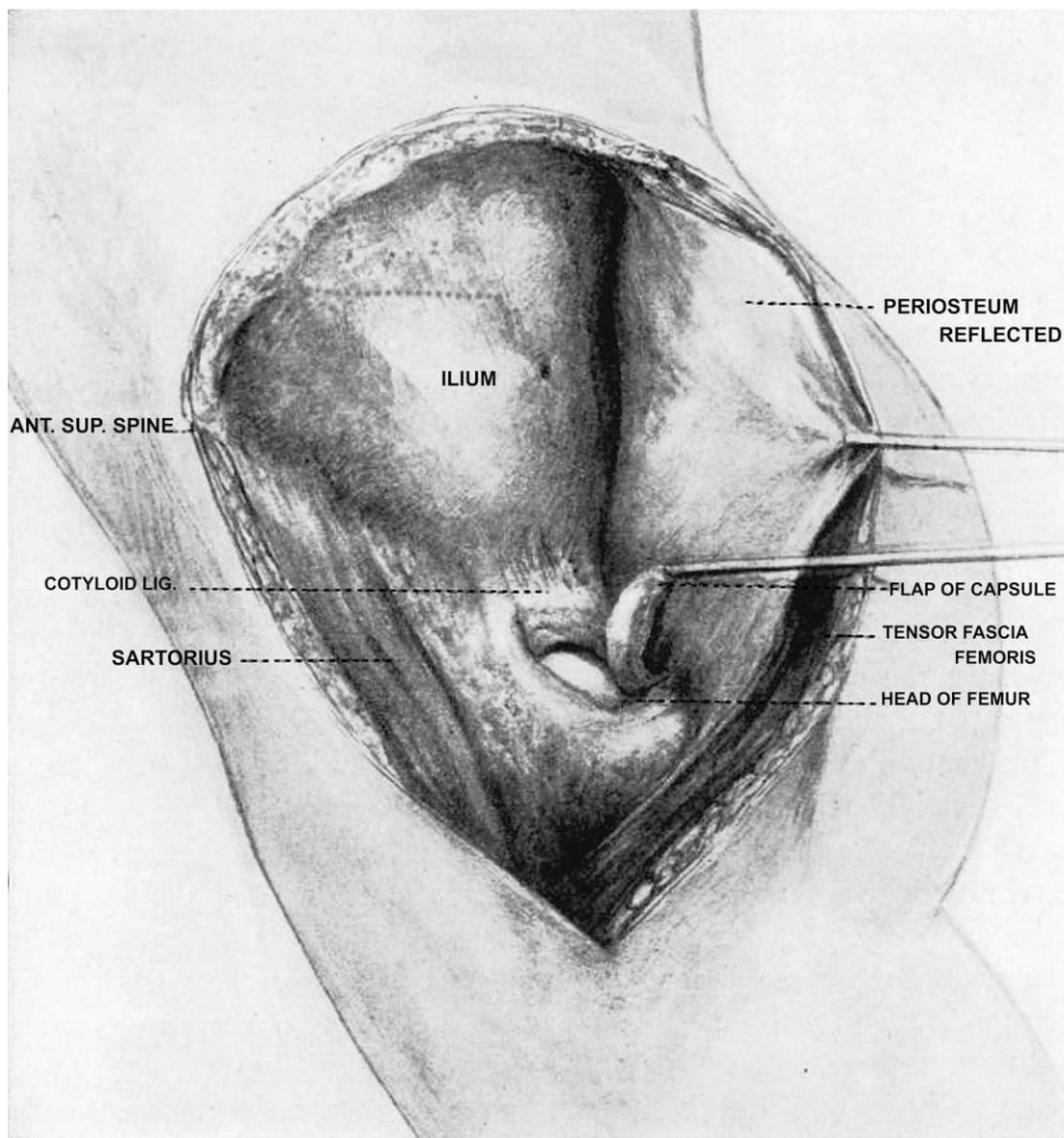


Fig. 1. Title page of "Grundriß der Chirurgie" and the original drawing illustrating the approach. (From C. Hueter, Grundriß der Chirurgie, 2nd edition. Leipzig: FCW Vogel; 1883.)

*Following the opening of the hip joint capsule, it is cut with the probe-pointed knife superiorly and inferiorly as much as possible; the femoral neck can be encompassed by the index finger superiorly and inferiorly within the capsule. ... The advantages of the anterior oblique approach are: (1) Only one muscle, the m. vastus ext. is injured; for this reason the leg keeps its tight connections to the pelvis which facilitates rehabilitation; (2) bleeding is so little, that no single ligature has to be done ...<sup>4</sup>*

Marius N. Smith-Petersen (1886–1953), a Norwegian-born American surgeon,<sup>1</sup> is credited with spreading the use of the anterior approach in the English-speaking world, and today the approach is commonly referred to as the “Smith-Petersen approach” because of his prolific use of the approach throughout his career. In his Moynihan Lecture in 1947,<sup>6</sup> Smith-Petersen recounted his original planning and execution of the anterior approach to the hip joint in 1917 (**Fig. 2**):



**Fig. 2.** The original approach by Smith-Petersen in 1917. (From MN Smith-Petersen. A new supra-articular subperiosteal approach to the hip joint. *J Bone Joint Surg Am* 1917;s2-15;595.)

*In connection with hip-joint surgery at the Massachusetts General Hospital Orthopedic Clinic, an incision has suggested itself to the writer, which seems to offer promise of usefulness in certain types of operations. The commonly used anterior incision does not give a very good exposure of the acetabulum; this structure is found at the bottom of an abyss-like hole, sometimes only felt, and in still other cases the operator is uncertain whether the structure he feels is the acetabulum or the supra-articular notch. If, however, the usual anterior incision be extended backward from the anterior superior spine along the crest of the ilium, the flap thus formed may be reflected downward by subperiosteal dissection, giving an excellent exposure of the superior portion of the capsule and of the acetabulum. ...*

*This incision has been used in the Massachusetts General Hospital Orthopedic Clinic in open reductions of congenital hip dislocations. The head of the femur is exposed by dividing the periosteum and the superior portion of the joint capsule; it is placed in the acetabulum without any difficulty as this is exposed very well indeed. After reduction and closure of the capsule the hip is quite firm in moderate abduction.<sup>7</sup>*

Following Hueter's original description and Smith-Petersen's continued use and development of the approach, the anterior approach to the hip has been used and re-described by many surgeons to treat various hip disorders.

### **Developmental Hip Dysplasia**

The surgical treatment of developmental dysplasia has relied heavily on the Hueter interval, commonly referred to by Smith-Petersen himself, and continues to be the main approach used to treat this deformity. As in the original description of the approach, the extended anterior, iliofemoral approach is ideal for the surgical treatment of acetabular dysplasia. The technique of enlarging the weight-bearing zone of the acetabulum by means of an extra-articular bony extension goes back to Franz König (1832–1910) and was described later by Marcel Lance, in 1925.<sup>8</sup> In this description, a shelf procedure consisted of fitting a corticocancellous autograft on the anterosuperior aspect of the joint capsule to increase the weight-bearing surface of the acetabulum and coverage of the femoral head, thus reducing pressure on the healthy acetabular cartilage. In the 1960s, a number of authors (among them Judet and Roy-Camille) modified the original technique

to improve graft placement and graft fixation. These modifications continued to use an incision similar to the Smith-Petersen approach and the Hueter interval.<sup>9</sup>

In 1961 Salter<sup>10</sup> successfully used the anterior approach for his innominate osteotomy in the treatment of congenital dislocation and subluxation of the hip. For this procedure the approach provides access to the inner and outer tables of the pelvis, enabling the surgeon to osteotomize the ileum from the sciatic notch completely. Pemberton<sup>11</sup> also described a pericapsular osteotomy via a Smith-Petersen approach in 1965. His osteotomy, better suited for the younger patient with an open triradiate cartilage and dysplasia, allows the acetabular roof to hinge on the open triradiate cartilage, providing anterior coverage.

The iliofemoral approach allows access to the inner and outer tables of the pelvis in addition to the hip joint, optimizing the ability to reorient the acetabulum. The periacetabular osteotomy, as advocated by Ganz<sup>12</sup> in 1988, also takes advantage of the anterior approach. Access to the inner table in the true and false pelvis allows the polygonal, juxta-articular osteotomy to be performed while preserving the vascular blood supply to the acetabular fragment, thus allowing an extensive acetabular reorientation to improve insufficient coverage of the femoral head and for medialization of the joint. This technique allows the continued treatment of residual hip dysplasia in young adults to prevent secondary coxarthrosis, even after the closure of the triradiate cartilage. Additionally, the modified Smith-Petersen approach allows a simultaneous anterior capsulotomy to visualize the hip joint and the labrum or to assess the hip dynamically before and after the osteotomy.

### **Fractures of the Hip**

Many surgeons have used the anterior approach in the treatment of various fracture patterns around the hip. Direct visualization of the femoral neck and easy access to the femoral is ideal for the treatment of femoral neck fractures or Pipkin fractures. In 1939 Cubbins and colleagues<sup>13</sup> reported on the use of a modified anterior approach to treat fractures of the femur neck using a transverse transection of the fascia lata below its insertion into the fascia lata and iliotibial band to gain access to the femoral neck. Fahey<sup>14</sup> described a modified anterior approach in 1949. He used the interval between tensor fasciae latae and sartorius muscle and transected the tensor at the lower border of the incision. When necessary, the tensor fasciae latae and gluteus medius

muscle were stripped subperiosteally from the iliac wing.

A few years later, in 1943, Levine<sup>15</sup> reported the successful treatment of a central fracture of the acetabulum via an anterior approach. More specifically Levine was the first to modify the Smith-Petersen approach to expose the inner table of the pelvis. The Judet brothers used the anterior approach frequently for arthroplasty procedure and later, in cooperation with Emile Letournel, used the approach for the treatment of pelvic fractures:

*Since 1954, we have paid particular attention to the study of fractures of the acetabulum. Because we were so disappointed with the results of closed treatment of these fractures, we decided to try open reduction. Our series included 173 patients of whom 129 were treated surgically ... . To reach the anterior aspect of the acetabulum, we used an ileoc-rural approach. This approach extends along the anterior half of the crest of the ileum as far as the anterosuperior iliac spine and the runs obliquely anteriorly and medially along the lateral aspect of the sartorius muscle for about fifteen centimetres.<sup>16</sup>*

Letournel then described an extension of the anterior iliofemoral approach for the treatment of acetabular fractures, that is, the extended iliofemoral approach:

*The incision is in form of an inverted J. Beginning at the posterior superior iliac spine, it follows the ileac crest as far as the anterosuperior iliac spine and from there descends straight toward the outer border of the patella half way down the thigh. ... This approach includes the tensor fascia lata of which the anterior border is followed. The dissection remains in the fibrous sheath of the muscle to avoid, as far as possible, dividing the branches of the lateral cutaneous nerve of the thigh.<sup>17</sup>*

The extended iliofemoral approach is still used today, but the indications for this extensive approach have decreased for many surgeons, who fear the morbidity associated with a devitalized gluteal flap secondary to injury to the superior gluteal artery. Nevertheless, a recent publication by Griffin and colleagues<sup>18</sup> has shown it to be safe and effective, with the major complication being heterotopic ossification.

This approach is not limited to use in fracture patients, because it is a well-known approach for type I and II hemipelvectomy in tumor surgery.<sup>19</sup>

Finally, with an increasing number of osteoporotic acetabular fractures being seen, Beaulé and colleagues<sup>20</sup> have described using the anterior approach to treat acetabular fractures with a total hip arthroplasty.

### ***Femoro-Acetabular Impingement***

In 1936 Smith-Petersen developed an acetabuloplasty operation through the anterior approach to relieve pain and restore function in what today might be considered osteoarthritis of the hip.<sup>21</sup> In this respect he anticipated the recent developments on femoroacetabular impingement surgery:

*A plastic procedure has been proposed for the relief of hip-joint conditions resulting from interference with the normal mechanics of the hip joint. Such conditions are "malum coxae senilis," "interapelveic protrusion of the acetabulum," "old slipped upper femoral epiphysis," "fractures of the the neck of the femur with malposition," "Legg-Calvé-Perthes disease," and "fractures of the acetabulum."<sup>21</sup>*

As surgical treatment for femoral acetabular impingement evolves, surgeons are using a variety of approaches to improve the femoral neck offset. The originators describe the use of the surgical dislocation,<sup>22</sup> and others have relied on arthroscopy as the surgical approach.<sup>23</sup> The anterior approach has also gained attention as a surgical technique to for these patients. Clohisy and colleagues<sup>24</sup> described a combination of open surgery and arthroscopy in which a mini-anterior approach was used to perform the osteochondroplasty of the femoral head after the joint was evaluated with arthroscopy.

### ***Other Arthritic Conditions***

Patients who have osteonecrosis or avascular necrosis of the femoral head usually are doomed to total hip arthroplasty once the femoral head has collapsed. To prevent further damage to the femoral head and its collapse, Hisashi and colleagues<sup>25</sup> described the use of the anterior approach to access the femoral neck and head for bone grafting of the femoral head. The anterior approach is ideal for this technique, and the excellent access to the femoral neck and head allows a window to be made in the femoral neck so that nonvascularized and/or vascularized bone grafts can be introduced into the femoral neck and head after debridement of the necrotic bone:

*Surgery involved curettage of necrotic bone, implantation of spongy bone, and application*

*of a vascularized pedicle bone graft. Grafts were taken from the ileum and included the circumflex iliac artery. A bony canal was made in the anterior femoral neck, from which the necrotic bone was curetted and to which the bone graft was applied.*<sup>25</sup>

When death of the femoral head was inevitable, arthrodesis was a more commonly accepted technique, and in 1950 Kirkaldy-Willis<sup>26</sup> described the ischiofemoral arthrodesis, consisting of bone grafting via the anterior approach for treatment of healed tuberculosis of the hip without gross destruction. Since then, in 1997, Matta and colleagues<sup>27</sup> also reported on a technique for hip fusion through the anterior approach with the use of a ventral plate.

### ***The Evolution of Anterior Approach Arthroplasty***

In addition to his work in the treatment of dysplasia, Smith-Petersen also focused on treating end-stage arthritis of the hip and developed a Vitallium-mold arthroplasty, after preliminary trials of several materials, including glass (1923), Viscoloid (1925), Pyrex (1933), and Bakelite (1938). He described his rationale for using the Hueter interval for such an implant:

*A joint has two surfaces which must be so shaped as to be able to function without interference or impingement through the greatest possible arc. Consequently, in the case of the hip joint, it is necessary to expose the acetabulum and its adjacent structures, as well as the femoral head and neck. In the past the various approaches to the hip joint have failed to properly expose the acetabulum, and the surgeon's efforts have been directed mainly at partial reconstruction of the femoral head. Reconstruction of the acetabulum demands intrapelvic exposure of this side of the joint. The approach to such an exposure necessitates extensive dissection; since this can be performed along structural planes, it is not destructive.*<sup>28</sup>

Continuing with this philosophy, the Judets<sup>29</sup> reported the use of the anterior approach for hip hemiarthroplasty in 1950, when they described a "resection-reconstruction" as being the

*excision of the pathologic femoral head and its replacement by an artificial head, made of a synthetic plastic material, which is firmly fixed to the upper end of the femur. This study*

*is based on 300 cases, the earliest of which dates back some three and a half years. ... To obtain good movement later we believe that it is essential to avoid all damage to muscle and bone. We therefore use Hueter's vertical incision, which extends about 15 centimetres down from the anterior-superior iliac spine, passes between tensor fasciae latae and sartorius, then lateral to rectus femoris and down to the capsule.*<sup>29</sup>

In 1955, O'Brien<sup>30</sup> from Saint Louis described the insertion of a femoral head prosthesis via the straight anterior approach: "Since November, 1951, we have employed the Fred Thomson prosthesis almost exclusively. ... Hueter's anterior straight incision, to be discussed here, does not require muscle cutting or detachment, and no postoperative immobilization is needed."<sup>30</sup>

At first the anterior approach was used to minimize muscle damage, but some surgeons found the approach limiting. While reporting on the insertion of a stemmed medullary femoral component using a modified anterior approach, Luck<sup>31</sup>, from Los Angeles in 1955, described how the Hueter approach hindered the placement of such a prosthesis. The skepticism expressed by Luck lingered for years, and with Charnley's<sup>32</sup> reports of success using the transtrochanteric approach, the Hueter approach was used less frequently.

Surgeons interested in the development of the modern resurfacing techniques, such as Wagner,<sup>33</sup> saw significant advantages to using of the anterior approach. In 1978 Wagner described his rationale for using the anterior approach for resurfacing:

*Although total joint replacement using any of the well tested variants of total prosthesis today, represents an effective means of operative correction in severe hip disability of many etiologies it has several inherent shortcomings. The major disadvantage result from the sacrifice of the femoral head and neck, so that should the prosthesis fail no completely satisfactory alternative exists. ... An anterior approach is used and considered the key to a successful procedure. For hip joint resurfacing in difficult cases the anterior approach is essential as it allows optimum exposure of both acetabulum and femoral head and neck, provides maximum soft tissue release, and allows preservation of the important posterior retinacular vessels. In addition the muscles are separated in the interspace between femur and gluteal innervation and vascularization which is important for wound healing and subsequent function.*

*Particularly in cases of severe deformity and/or contracture the anterior approach is the key to successful operation.*<sup>33</sup>

As total hip arthroplasty continued to evolve, the Judets<sup>34</sup> again took up the baton. In 1985 they described the procedure of a total hip arthroplasty through an anterior approach with the assistance of an orthopedic table:

*The anterior approach to the hip is first between the tensor muscle of fascia lata and the sartorius muscle, then laterally to the vastus externus. Deinsertion of the fascia lata from the ileum is necessary in only slightly more than one half of the cases, and it is always limited. Access to the capsule is wide and, provided one works on an orthopedic operating table, the maneuvers required to dislocate the joint and expose the femoral head and neck, then the cotyloid cavity, are simple. Closure is easy and because the trochanter has not been sectioned, early rehabilitation is possible.*<sup>34</sup>

Light and Keggi<sup>35</sup> advocated the splitting of the tensor fasciae latae for straightforward, effective exposure for total hip arthroplasty, an approach they dubbed an “anterior approach for hip arthroplasty”:

*Our anterior approach employs a curved transverse or short straight skin incision with or without a small proximal incision, or stab wound, to allow for the precise passage of femoral reamers and prosthetic components, and occasionally an additional small distal incision for the passage of acetabular instruments. The primary skin incision is similar to the proximal incision of a Watson-Jones*

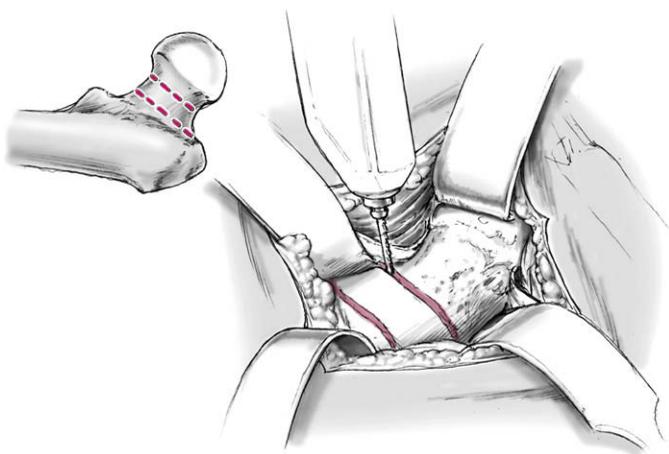
*approach or the distal portion of a Smith-Peterson incision and allows exposure of the underlying tensor fasciae latae muscle. Slitting the anterior fibers of the tensor fascia latae easily exposes the anterior hip joint capsule.*<sup>35</sup>

Recently they reported on using the split approach with the addition of a second and third incision in more than 2000 patients.<sup>36</sup> Other variations of the anterior approach have been reported also. In 2003 Berger<sup>37</sup> popularized the idea of minimally invasive total hip arthroplasty. His two-incision approach combines a small anterior approach for cup insertion and a second transgluteal incision for the insertion of the femoral implant. The failures of the technique in other hands cannot be blamed to the meticulously elaborated nailing technique developed by Kuentscher<sup>38</sup> that obviously served as a blueprint for the second incision site of Berger’s technique.

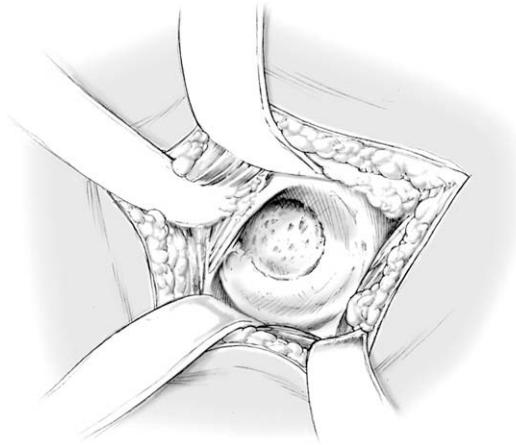
With the advent of minimally invasive total hip arthroplasty, the anterior approach, as proposed by the brothers Judet<sup>34</sup> using an orthopedic traction table (Fig. 3), has gained popularity through the reports by Siguier and colleagues<sup>39</sup> and Matta and colleagues.<sup>40</sup> Nevertheless, the need for using an orthopedic table seems to have hindered the technique’s wider acceptance.

The authors and colleagues have started to investigate the use of an minimally invasive anterior approach for conventional total hip arthroplasty without the use of an orthopedic table (Figs. 3–5).<sup>41–46</sup>

Several studies have indicated that minimally invasive posterior, transgluteal, and anterolateral approaches have no significant advantages over more conventional approaches. This result might be anticipated, because the theoretical benefits



**Fig. 3.** In situ osteotomy of the femoral neck via an anterior approach for minimally invasive total hip arthroplasty. (From Rachbauer F, Krismser M. Minimal-invasive Hüftendoprothetik über den anterioren Zugang. Oper Orthop Traumatol 2008;20:245; with permission.)



**Fig. 4.** Exposure of the acetabulum for minimally invasive total hip arthroplasty. (From Rachbauer F, Krismer M. Minimalinvasive Hüftendoprothetik über den anterioren Zugang. *Oper Orthop Traumatol* 2008;20:245; with permission.)

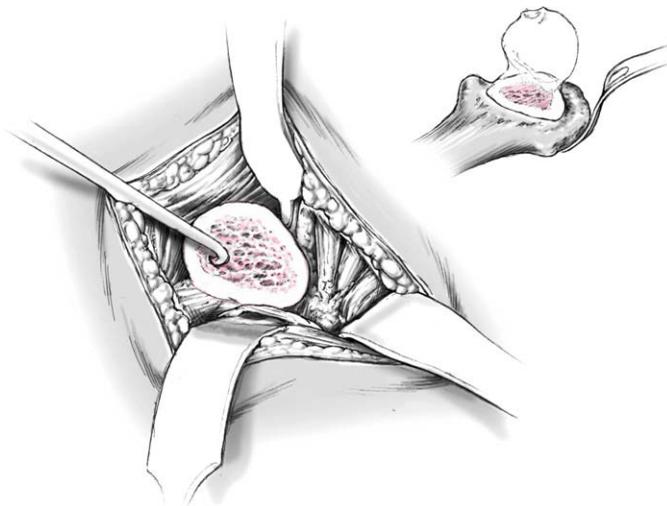
from a minimally invasive approach using these surgical routes of access are limited, essentially, to a shorter skin incision. Even though there still is no universally accepted definition for “minimally invasive total hip arthroplasty,” the aim remains clear: a focus on minimizing tissue trauma to accelerate rehabilitation, thus giving a definition by purpose. Because it is a muscle-sparing, not a muscle-splitting, approach, the anterior approach has been used consistently for the implantation of a hip prosthesis.

To fulfill the promises of reducing soft tissue trauma, the concept of tissue preservation must be applied to each of the layers around the hip joint, the skin, the muscles, the joint capsule and

the nerves, and vessels within. An optimal approach should deliver a short skin incision; prevent muscle splitting and/or detachment, and provide possible preservation of the joint capsule. The anterior approach allows these goals to be accomplished.

To approach the acetabulum, posterior incisions require splitting the gluteus maximus muscle and tenotomy of the external rotators and part of quadratus femoris. Lateral approaches split, detach, and crush the gluteus minimus and medius muscles. Splitting of the gluteus maximus muscle may lead to partial denervation, because splitting cuts through portions of the inferior gluteal nerve. Lateral approaches often can lead to lesions of branches of the superior gluteal nerve with possible weakening of the gluteal abductors. Furthermore, in a large number of patients, the reattached abductor muscles do not heal onto the greater trochanter. Ruptures of insufficiently reattached muscle are a known medium-term complication of transgluteal approaches.<sup>47</sup>

For access to the femoral canal, the greater trochanter must be osteotomized or the femur must be rotated internally or externally. Anterior and lateral approaches allow the preservation of the external rotators as they follow their natural course. The necessary further step is levering the entrance of the femur to the level of the skin. Double-incision approaches try to obviate levering by entering the femoral canal through the gluteal muscles, accepting as a necessary consequence any collateral damage to the split gluteal muscles and risking possible detachment of the piriformis muscle.<sup>48</sup> Visual accessibility of the femur is compromised also. The extent of leverage might be reduced by splitting or



**Fig. 5.** Exposure of the femur for minimally invasive total hip arthroplasty. (From Rachbauer F, Krismer M. Minimalinvasive Hüftendoprothetik über den anterioren Zugang. *Oper Orthop Traumatol* 2008;20:246; with permission.)

detaching the tensor fasciae latae muscle. To lever the femur, posterior approaches mandate detachment of external rotators and proximal adductors. Lateral approaches require tenotomy of the external rotators, whereas anterior approaches allow their preservation.

The use of an orthopedic traction table has been advocated to facilitate delivery of the femur through an anterior approach. Orthopedic tables in trauma units serve to reduce dislocations of fracture ends by traction. As in lateral and posterior approaches, levering the femur for implantation of the femoral component does not mandate traction. Therefore, the orthopedic table serves as an operative assistant to hold the leg and is dispensable.

Additionally, the orthopedic table may not overcome insufficient release of the proximal femur despite its elongated lever arm, as evidenced by reports of ankle fractures and knee sprains.<sup>39,40,49</sup> The key to successful delivery lies in exact anatomic knowledge of the insertion and direction of action of the external rotators, including their relation to the joint capsule and the gluteal muscles. A stepwise release starting with capsulotomy (not capsulectomy) and, when necessary, proceeding with the release of the conjoint tendon of the obturator internus and gemelli tendons allows sufficient exposure of the proximal femur. Very rarely is the release of the piriformis tendon needed.

Anterior approaches are prone to lesions of the lateral cutaneous femoral nerve. To lower that risk, an incision site located more laterally on the belly of the tensor fasciae latae muscle has been advocated.

The anterior approach is a safe, reliable, and feasible technique for total hip arthroplasty, permitting optimal soft tissue preservation. Since Hueter first described this interval, many surgeons have approached the hip anteriorly to perform a myriad of surgical procedures. The anterior approach allows optimal muscle preservation, and it is the only truly internervous approach to the hip. An appreciation for the evolution of the anterior approach to the hip will help the orthopedic community understand these advantages and why so many have used this approach in the treatment of hip pathology and for the implantation total hip arthroplasty.

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