



SURGICAL TECHNIQUE

ADDENDUM

Ref 99.98.12BIKINI

Rev. 00

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1 INTRODUCTION

This document describes the surgical technique to perform a total or partial Hip arthroplasty using the AMIS (Anterior Minimally Invasive Surgery) BIKINI incision. This document represents an addendum to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

The AMIS Bikini technique is recommended for surgeons who have properly mastered the standard AMIS technique.

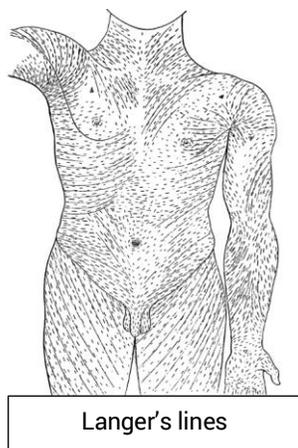
Dedicated AMIS Bikini instruments have been designed to enable the surgeon to perform an optimized and reproducible implantation via a Bikini incision, further minimizing the risk of soft tissue damage respect to the traditional AMIS instruments.

NOTE

Please note that the instrument trays needed to perform a standard AMIS approach are always needed to perform the AMIS BIKINI Incision technique in addition to the specific BIKINI Add-on complement.

1.1 THE AMIS BIKINI incision: the evolution of the AMIS approach

The AMIS Bikini incision represents an evolution of the AMIS approach that follows the same intermuscular pathway with an inguinal skin incision performed within the skin fold of the "bikini line", or frontal groin crease. It results in an aesthetically pleasing cosmetic scar along the natural "Langer's lines" of the skin, that can be hidden when wearing underwear or swimwear (e.g., a bikini).



The AMIS BIKINI incision combines all the benefits of the AMIS technique with the additional advantage of the groin crease incision which are:

- Better cosmetic/aesthetic appearance.^{1,2,3,4}
- Lower rates of delayed wound healing (also indicated patient with a high BMI).^{1,2,3,4}



Six weeks post-op

Six months post-op

2 PATIENT SELECTION

NOTE

For the patient selection not described in this addendum, please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

The inguinal skin incision is particularly indicated in case of High BMI patient because of the Lower rates of delayed wound healing.^{1,2,3,4}

3 PREOPERATIVE PLANNING

NOTE

For the preoperative planning please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

4 THE AMIS BIKINI APPROACH

4.1 MOBILE LEG POSITIONER

4.2 PATIENT POSITIONING

NOTE

For the AMIS mobile leg positioner and patient positioning please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

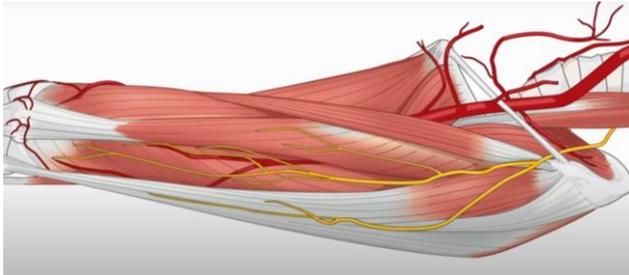
4.3 SURGICAL EXPOSURE

NOTE

For the steps not described in this addendum, please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

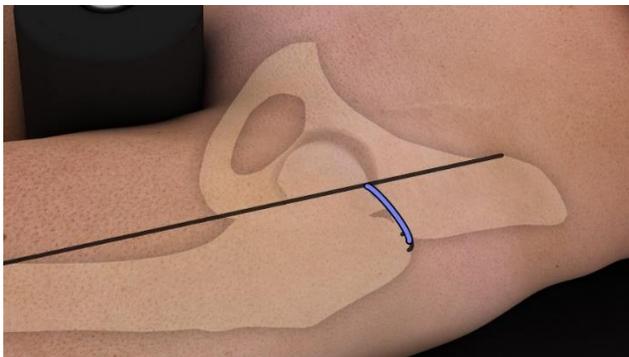
4.3.1 SKIN INCISION

It is crucial to understand the precise muscle position by carefully palpating the TFL (Tensor Fasciae Latae) before performing the incision. This will identify where to perform the skin incision, avoiding the Lateral Femoral Cutaneous Nerve (LFCN).



In yellow: Lateral Femoral Cutaneous Nerve

When defining the incision, the top of the greater trochanter (GT) and the Hueter's line are identified and marked. The incision starts at the GT level and continues parallel to the skin fold up to the Hueter's line.



AMIS Bikini incision

The incision is shifted with respect to the groin crease incision and is generally 6 to 8 cm long.

TIP

In line with the **soft tissue sparing concept**, a slightly longer skin incision should be preferred compared to a small incision with an excessive use of retractors.

The subcutaneous tissues are gently incised by the electrocautery knife along the fat lobules.

A dedicated autostatic retractor, the AMIS Bikini Beckmann, is positioned to open the incision borders.



Dedicated AMIS BIKINI Beckmann

Due to the orientation of the incision, the anterior branch of the LFCN will be visible under the skin fat layer.



Anterior Branch of the LFCN

Palpate the TFL again to identify the region in which it bulges the most.

The aponeurosis is incised for 1 cm and then opened with dissecting scissors in the direction of the fibers distally and

proximally. The dissection runs parallel to the lateral femoral cutaneous nerve, which reduces the risk of damaging it.



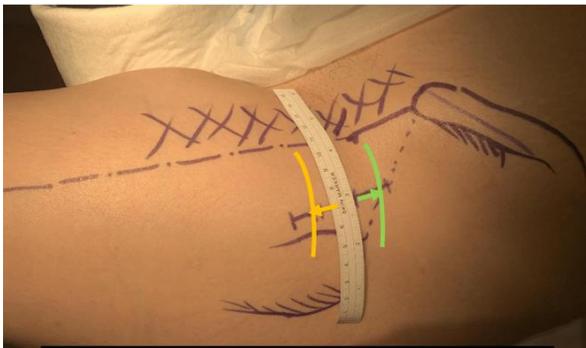
Aponeurosis covering the rectus femoris and its incision

NOTE

With the Bikini approach, the Tensor Fasciae Latae is generally reached in a more lateral way than with the standard AMIS approach

NOTE

Coxa vara and Coxa valga hip anatomies require to shift the incision respectively proximally or distally with respect to the original incision landmark.



Coxa vara  & Coxa valga  incision shift

4.3.2 INTERMUSCULAR APPROACH

4.3.3 ARTICULAR APPROACH

NOTE

For the intermuscular and the articular approach please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

5 FEMORAL NECK OSTEOTOMY

NOTE

For the femoral neck osteotomy please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

6 ACETABULAR STAGE

NOTE

For the steps not described in this addendum, please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

The use of the dedicated **Bikini Charnley Blades** instead of the standard ones helps avoiding soft tissue injury, especially at epidermis and dermis level.



Dedicated AMIS BIKINI Charnley Blades

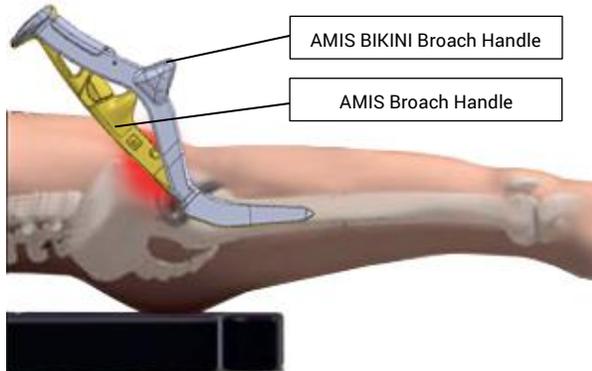
7 FEMORAL STAGE

NOTE

For the steps not described in this addendum please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).



AMIS BIKINI Broach Handle



AMIS BIKINI BROACH HANDLE VS AMIS Broach Handle

The dedicated **AMIS Bikini Broach Handle** design has been optimized to further allow for:

- Less impingement
- Better rotational stability (control of anteversion while broaching)
- Less capsular release necessary
- Less hyperextension necessary

This results in a possible reduction of the risk of femoral

fracture related to the femoral exposure.



Broaching with a Standard AMIS Broach Handle



Broaching with AMIS BIKINI Broach Handle

8 REDUCTION

NOTE

For the reduction procedure please refer to the AMIS surgical technique

9 WOUND CLOSURE

NOTE

For the wound closure please refer to the AMIS surgical technique (ref. 99.98.12 or ref 99.98.12US).

10. References

1. Menzies-Wilson, Richard & Mahalingham, Karupiah & I, Tamimi & Field, Richard. (2019) "Retrospective cohort study comparing the functional outcomes of direct anterior approach hip arthroplasty. Oblique "bikini"vs longitudinal skin incision".
2. Menzies-Wilson, Richard & Mahalingham, Karupiah & I, Tamimi & Field, Richard. (2019)." Functional Outcomes of direct anterior approach hip arthroplasty: Oblique 'bikini' versus longitudinal skin incision. 10.1177/2210491719890883.
3. Leunig, Hutmacher, Ricchiardi, Impellizzeri, Rüdiger, Naal. (2018)" Skin crease 'bikini' incision for the direct anterior approach in total hip arthroplasty: a two- to four-year comparative study in 964 patients. Bone Joint J.
4. Manrique, MD, Paskey, BS a, Tarabichi, MD, Restrepo, MD, Foltz, PhD Hozack, MD. (2019) "Total Hip Arthroplasty Through the Direct Anterior Approach Using a Bikini Incision Can Be Safely Performed in Obese Patients". J Arthroplasty

Part numbers subject to change.

NOTE FOR STERILIZATION

The instrumentation is not sterile upon delivery. Instruments must be cleaned before use and sterilized in an autoclave in accordance with the regulations of the country, EU directives where applicable, and following the instructions for use of the autoclave manufacturer. For detailed instructions, please refer to the document "Recommendations for cleaning, decontamination and sterilization of Medacta International orthopaedic devices" available at www.medacta.com.



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MEDACTA.COM



Medacta International SA

Strada Regina - 6874 Castel San Pietro – Switzerland

Phone +41 91 696 60 60 - Fax +41 91 696 60 66

info@medacta.ch

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