

**materialise**

innovators you can count on

## Materialise aMace

### Planning report v1

Case No: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

This planning report contains:

- Analysis of the preoperative situation based on the provided CT scan
- Implant design with screw proposal for this patient case

*CUSTOM-MADE DEVICE*

Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

## PROPOSAL – DO NOT USE DURING SURGERY

### Message to the surgeon

Dear Dr. XXX,

This report contains the planning for your **patient 'XXX' (ID XXX)**.

We seek your feedback on the proposed visualisations and drafted implant design.

Please approve and/or comment each of the topic-related questions via the comment window in SurgiCase and/or phone call.

An overview of the questions is provided on the last slides of this report.

Kind regards,  
Your Materialise Clinical Engineer

PROPOSAL

Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

## PROPOSAL – DO NOT USE DURING SURGERY

## Case info

- ▶ Patient: Male, 82y
- ▶ Side to treat: **Left hemi-pelvis**
- ▶ CT scan date: DD/MM/YYYY
- ▶ CT data received: DD/MM/YYYY
- ▶ Surgery date: To be confirmed



CT Scoutview (01/09/2017)

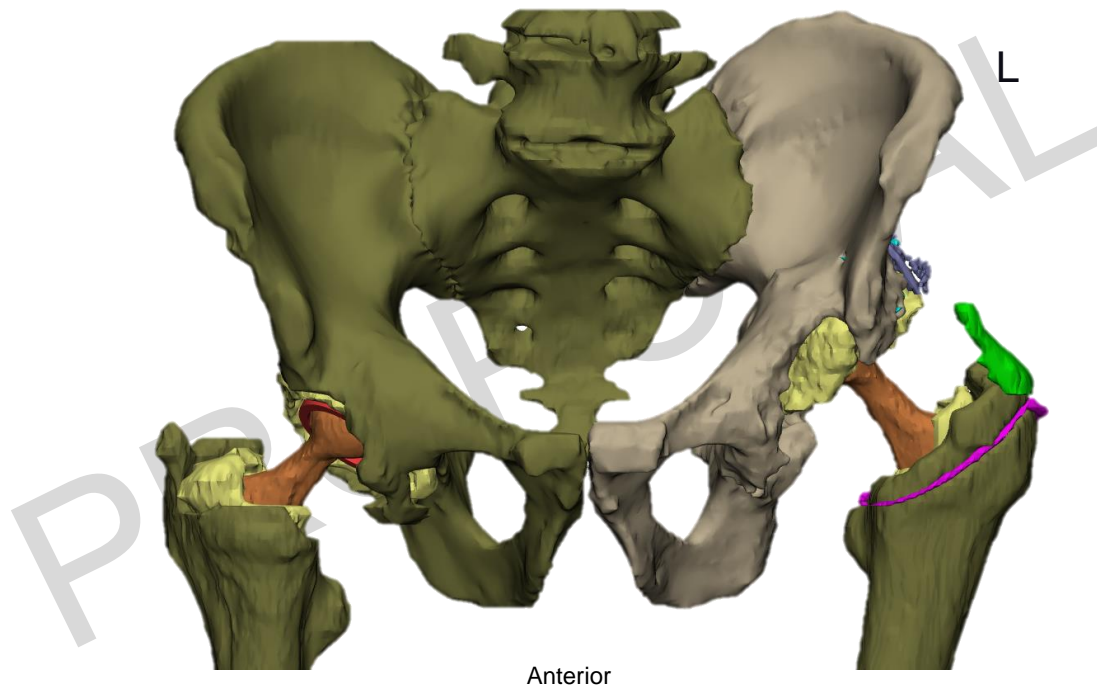
1

Do you have a **surgery date** in mind?

Materialise addresses great importance to the full protection of privacy and personal health information. Personal information is anonymized via a unique patient number and/or case number. Accordingly, patient data can be consulted by the surgeon by use of the prescription form. This report contains confidential information and is meant for the operating surgeon only.

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## Preoperative situation






Anterior

Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

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## Right side: overview

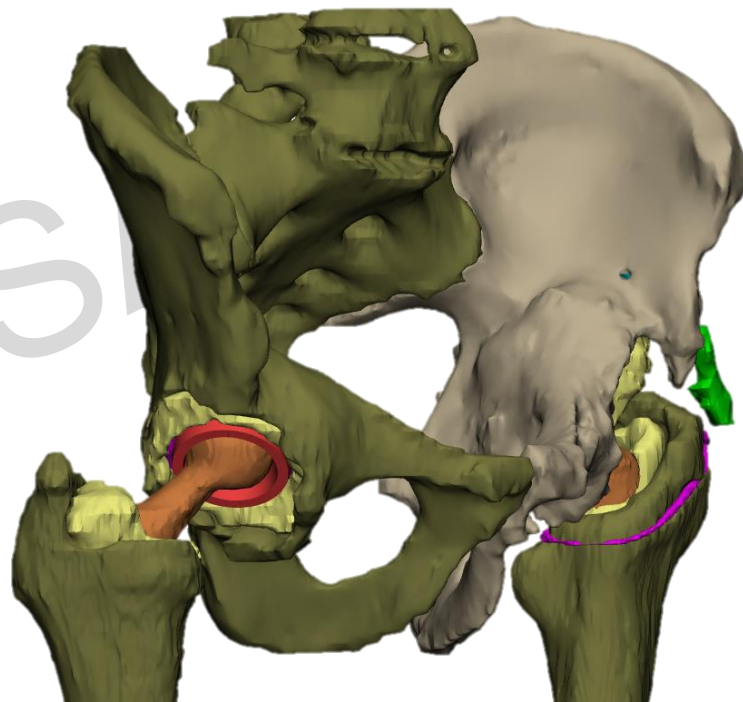
-  Cemented hip stem
-  Cement
-  Liner



Anterior



Lateral



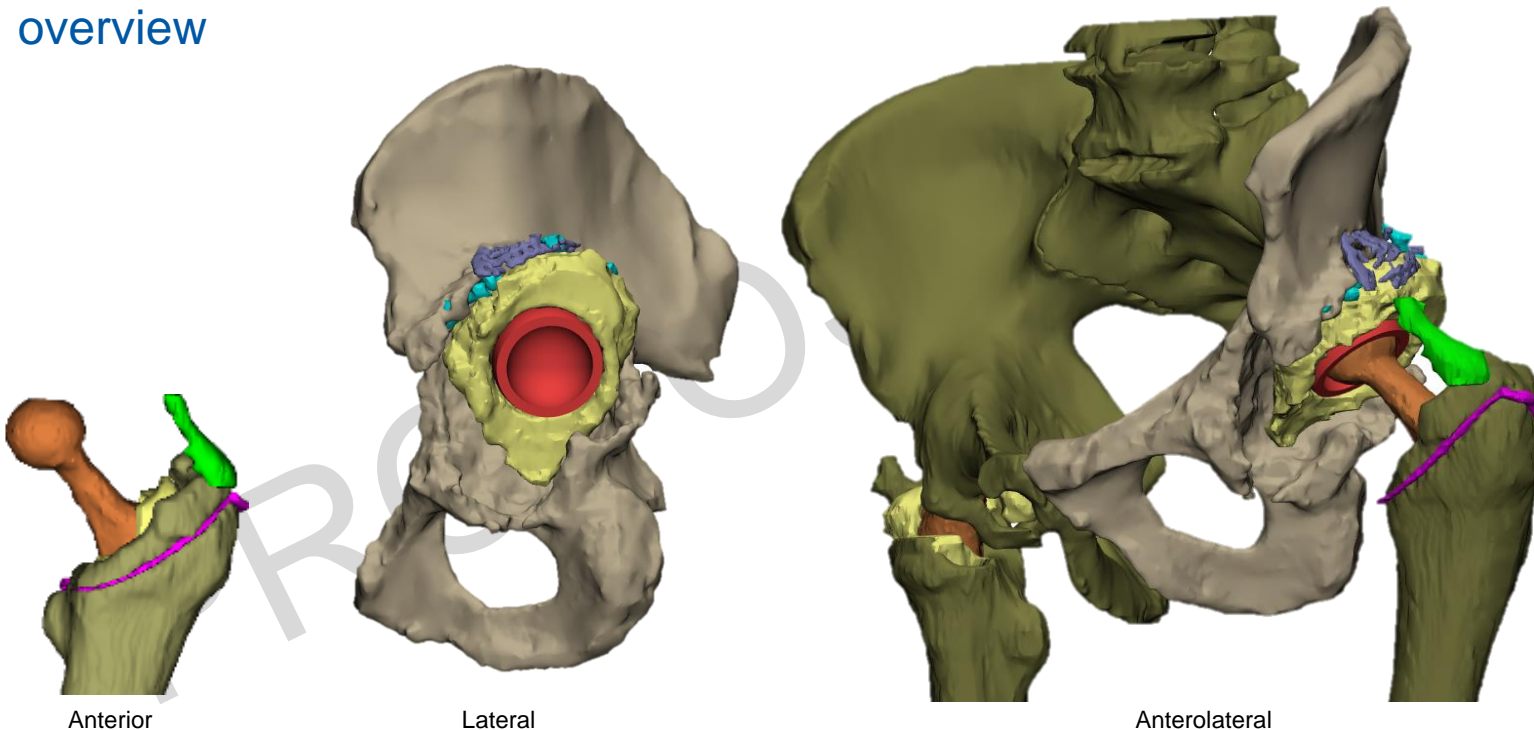
Anterolateral

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Surgeon: Dr. XXX  
Hospital: XXX

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## Left side: overview

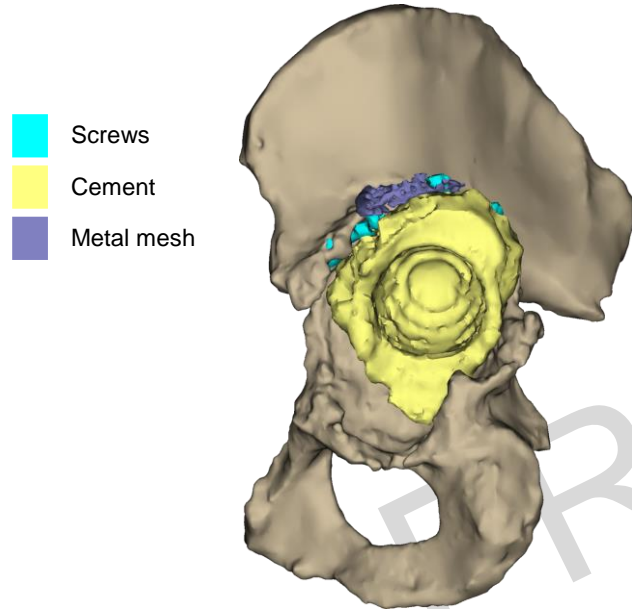
- Cemented hip stem
- Cement
- Bone Fragment
- Cerclage wire
- Screws
- Liner
- Metal mesh






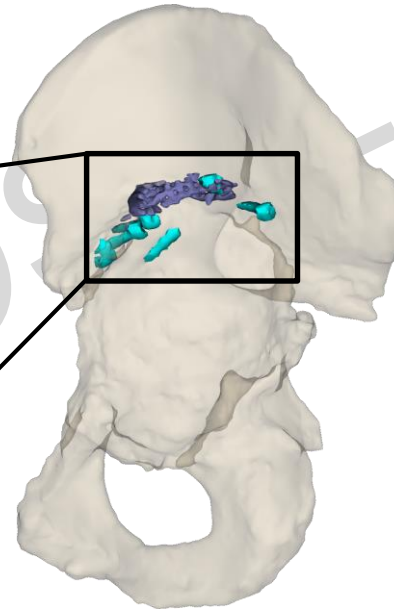
Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

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## Left side: present components



-  Screws
-  Cement
-  Metal mesh



- 1 screw is fixating the metal mesh (no 5).
- 1 screw is loose (no. 6).
- 4 screws are partially embedded in the bone (no. 1 to 4) .

### Acetabular preparation:

All components should be removed prior to implant insertion.

2

Do you agree with the acetabular preparation as presented?



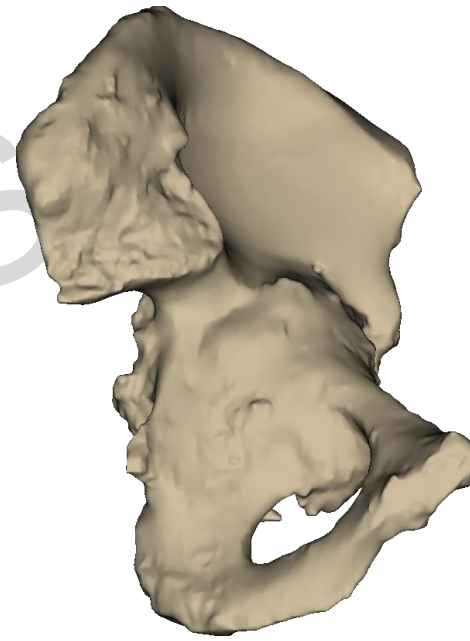
Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

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## Left side: bone defect



Lateral



Medial

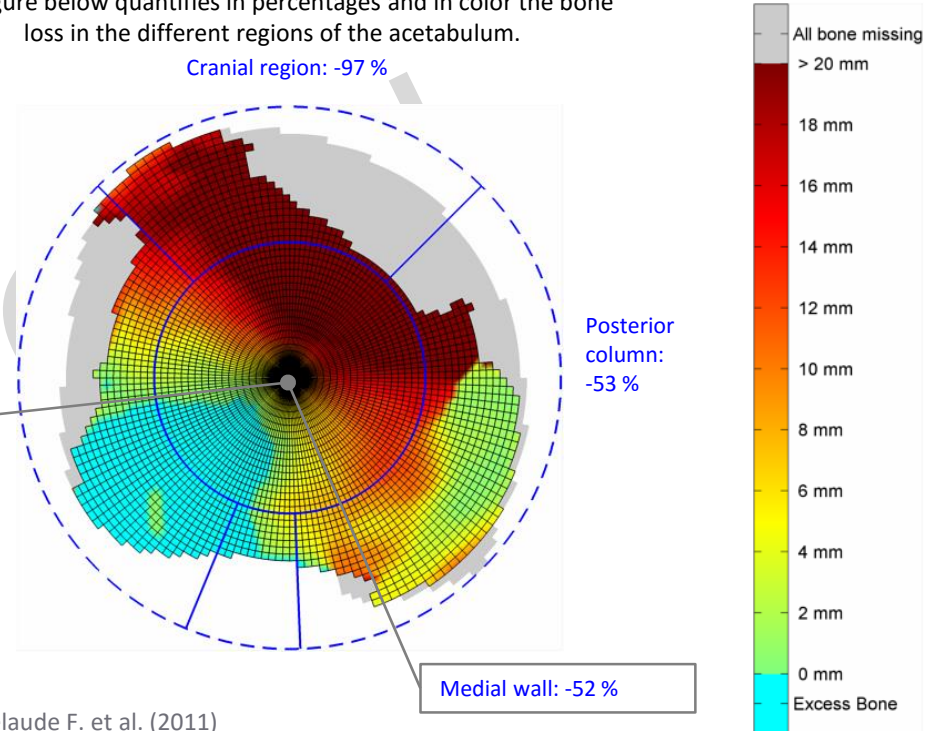
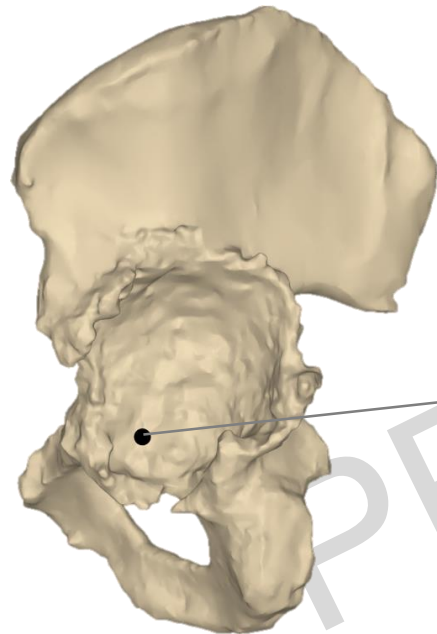


Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

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# Acetabular Bone Loss

The figure below quantifies in percentages and in color the bone loss in the different regions of the acetabulum.



Analysis based on [Gelaude F. et al. \(2011\)](#)

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 Surgeon: Dr. XXX  
 Hospital: XXX

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## Defect classification



Defect classification according to: *Paprosky W.G. et al. (1994)*

### Left hemi-pelvis classification

- |   |   |
|---|---|
| • <b>Cranial region</b>                     | totally degraded; nearly missing                                    |
| • <b>Anterior column</b>                    | severely degraded   |
| • <b>Medial wall</b>                        | severely degraded   |
| • <b>Posterior column</b>                   | severely degraded; bone deformation present                         |
| • <b>Original anatomical acetabular rim</b> | Fully deformed, and thus absent from at least nine to five o'clock. |
| • <b>Joint centre displacement</b>          | Displacement of the joint center is larger than 20mm (34 mm).       |

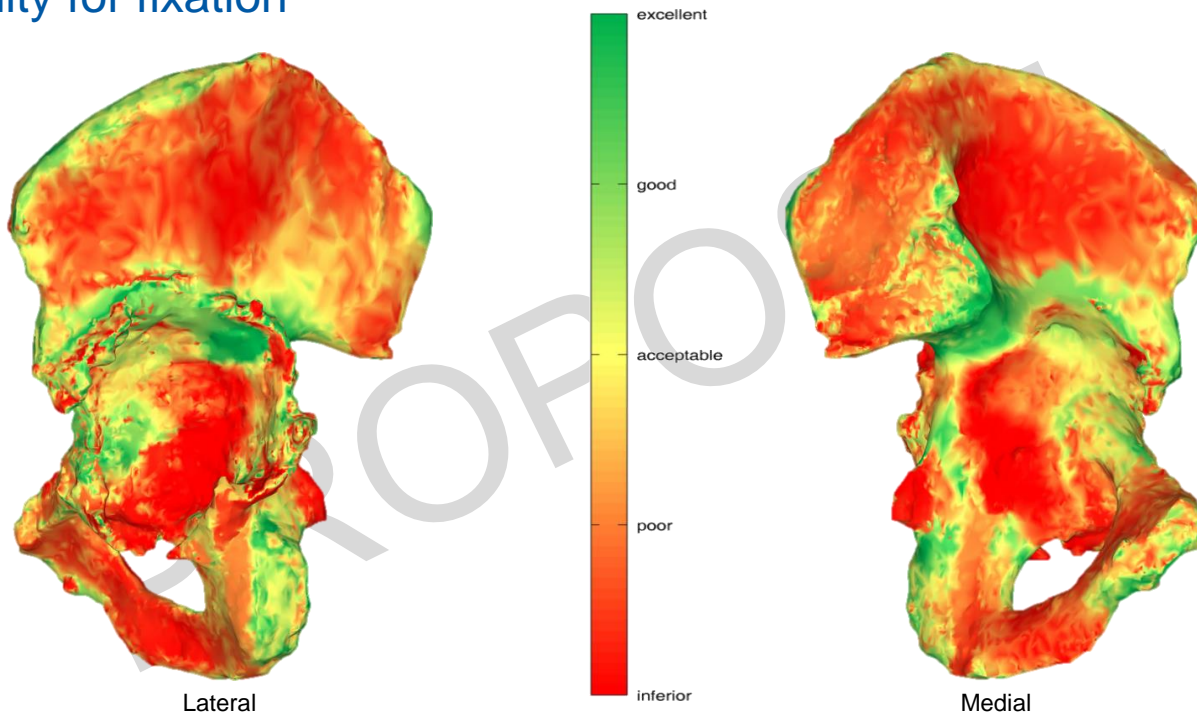
3

Please confirm the defect classification

Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

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## Bone quality for fixation



Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

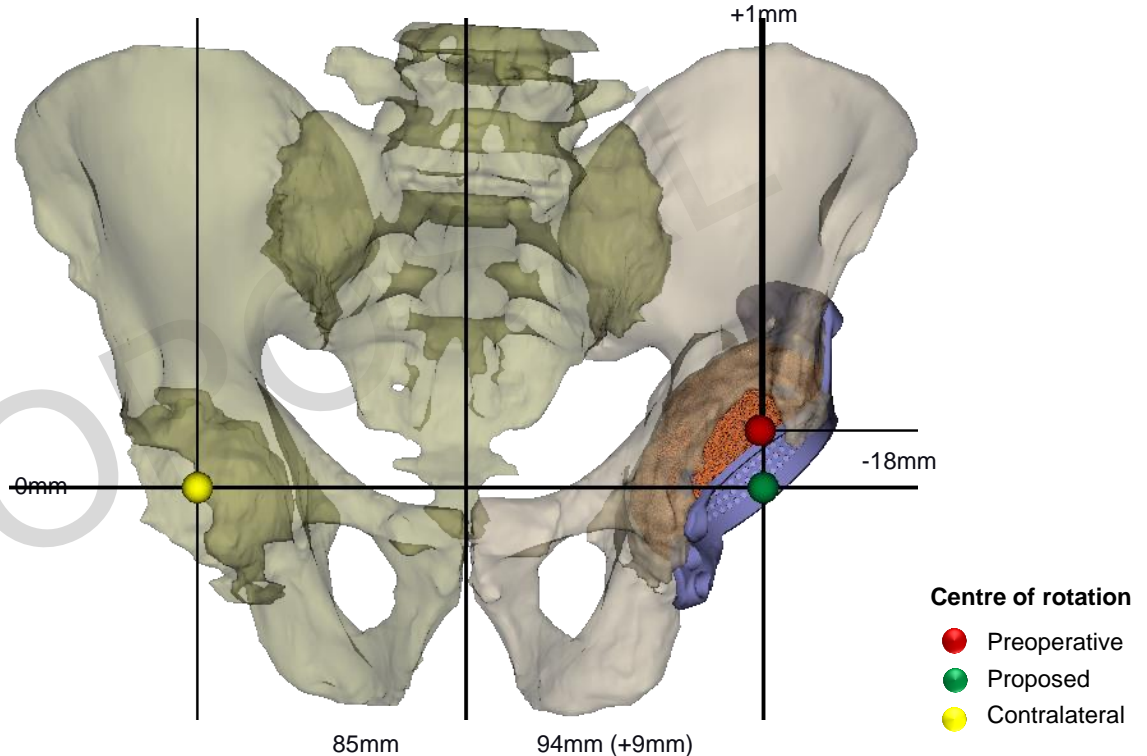
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## Implant design

### Cup

Inclination **40°**  
AV angle **20°**  
Inner Diameter **61mm**  
Cup/Liner diameter **57mm**

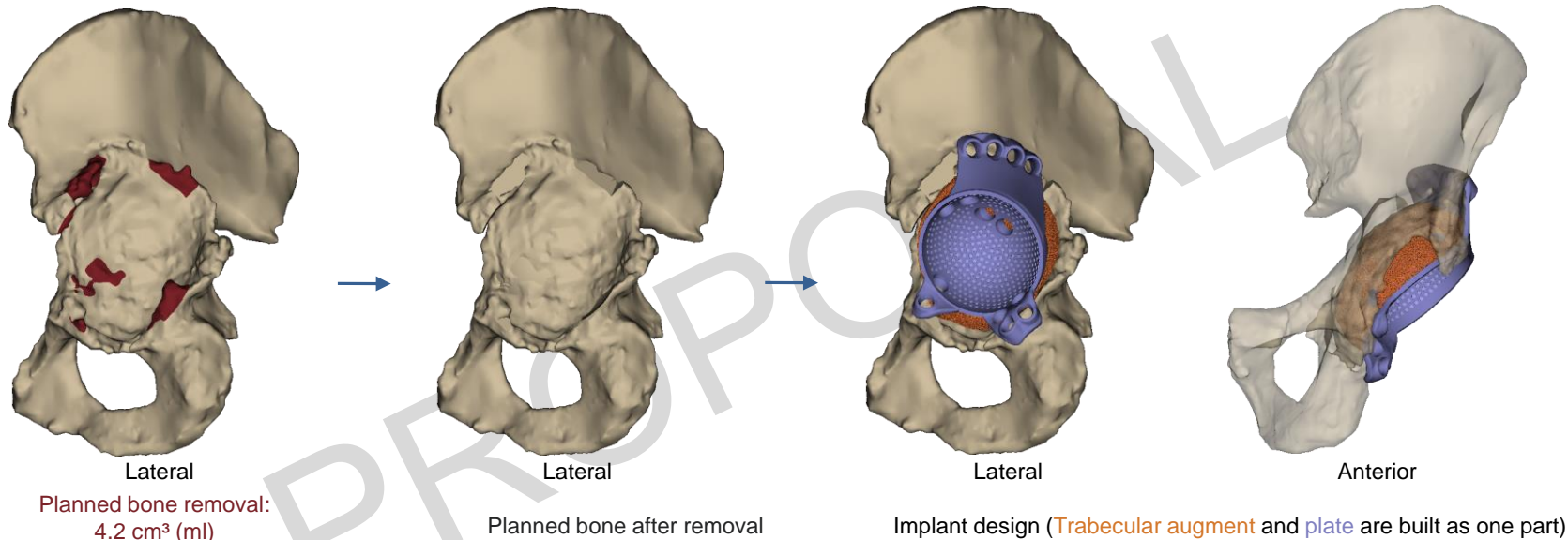
- 4 Do you agree with the position of the proposed **Centre of Rotation**?
- 5 Do you agree with the proposed **inclination** and **anteversion**?
- 6 A **cup/liner component** of max **57mm** outside diameter can be cemented in the implant. Is this OK?



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 Hospital: XXX

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## Preparation and reconstruction



7

Some **bone removal** is needed for proper implant insertion. Is this OK?

8

Do you agree to use a **posterolateral approach**?  
 If no, please specify. Is the **plate outline** compliant with your surgical exposure?

9

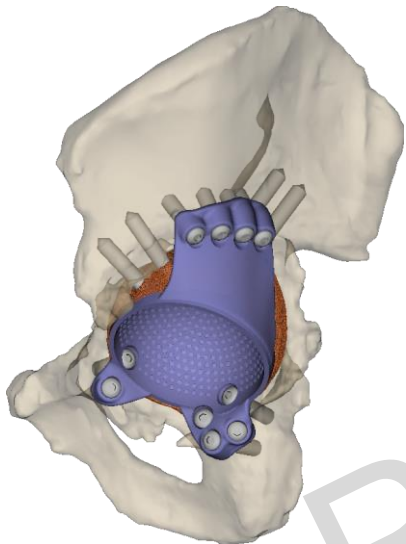
Is the shape of the **trabecular augment** OK?  
 To enable insertion some clearance will be foreseen, which can be filled with morselized bone.



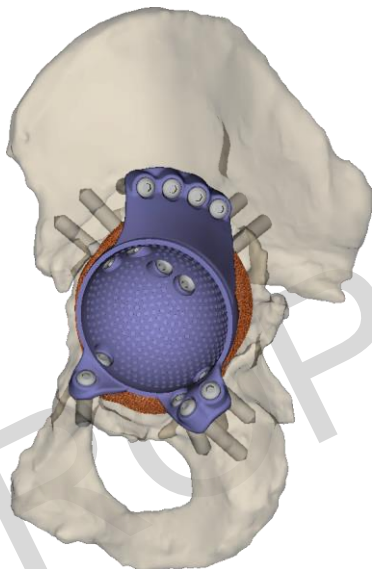
Case: XXX  
Surgeon: Dr. XXX  
Hospital: XXX

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## Screw proposal



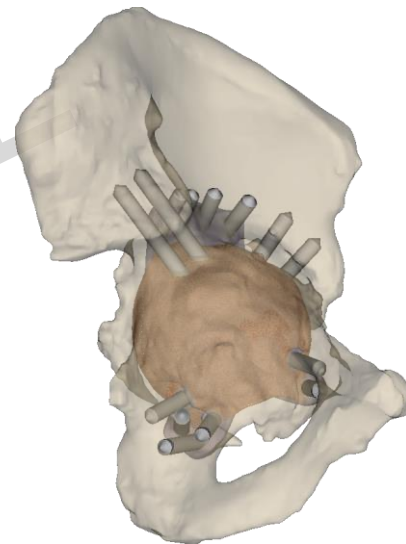
Direct lateral



Lateral



Lateral



Medial

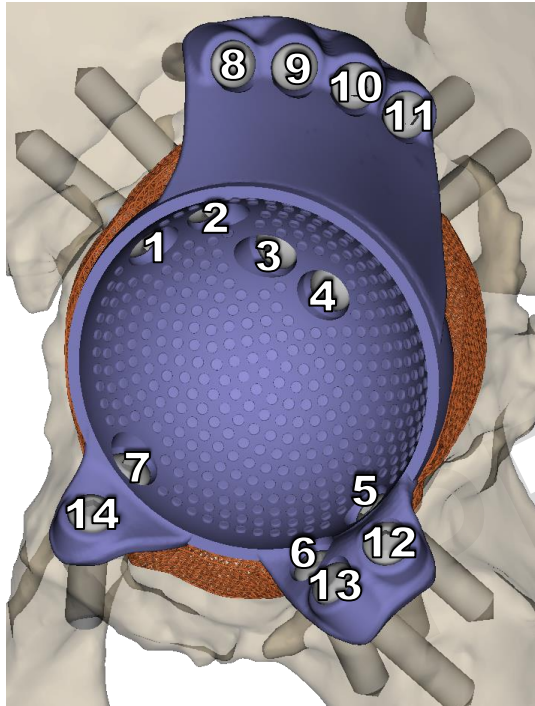
10

Do you have any remarks concerning the **screw positioning**?  
See also the **attached 3D animation**.

Case: XXX  
 Surgeon: Dr. XXX  
 Hospital: XXX

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## Screw proposal



Screw	Length (mm)
1	31
2	36
3	60
4	60
5	30
6	30
7	27
8	28
9	26
10	27
11	32
12	36
13	40
14	31



The use of titanium cancellous bone screws ( $\varnothing 6.5\text{mm}$ ) is recommended. The selected screws must have a maximal head height of 4.8 mm and a head diameter between 7.85 mm and 8 mm.

The use of a flexible drill is recommended. By default the aMace guides are designed to be compatible with a 3.2 mm drill. Note that the drillbit will not be provided by Materialise.



Please specify the **drill bit diameter** corresponding to your choice of screws.



Case: XXX  
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### Important information

- ▶ We will need both the **patient prescription form** and **quote** filled out and sent over to us in order to produce and deliver the implant.
- ▶ Materialise NV delivers a **custom implant and custom accessories (trial implant, bone model and drill guides)**. We do **not provide any other components or instrumentation**, such as screws, liner or drill instrumentation. These need to be provided by the hospital.
- ▶ Indicate if **additional administrative preparation** is needed to **receive/process custom implants** at your hospital.
- ▶ Note that it is highly recommended to **perform the surgery within 6 months of the CT scan date**.
- ▶ The implant will be produced in titanium (alloy **Ti6Al4V**). Please indicate if this poses any problems.
- ▶ All components are delivered **non-sterile** and **need to be cleaned and sterilised at hospital facility**. For this purpose the implant will be delivered at least one day ahead of surgery. Indicate if more time is needed, and please specify your **material responsible's contact details**.

Case: XXX  
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Hospital: XXX

## PROPOSAL – DO NOT USE DURING SURGERY

## Questions for the surgeon

1

**Surgery date** not yet defined. Do you have a date or time period in mind?

2

Do you agree with the **acetabular preparation planning** as presented regarding components removal?

3

Please confirm the **defect classification**. Additional visualisation can be provided if needed.

4

Please provide feedback on the proposed **Centre Of Rotation**.

5

Do you agree with the proposed **inclination** and **anteversion**?

6

The design is compatible with a **cup/liner component** with maximum outside diameter of **57mm**. Which liner component do you want to use? Please specify the **type** and **size**.  
(Note that the cup/liner component is not provided by Materialise NV.)

Case: XXX  
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Hospital: XXX

## PROPOSAL – DO NOT USE DURING SURGERY

## Questions for the surgeon

7

Do you agree with the proposed **bone removal** required to enable proper implant insertion?

8

Do you agree to use a **posterolateral approach**? If no, please specify your surgical approach. Is the **plate outline** compliant with your surgical exposure?

9

Is the shape of the trabecular **augment** OK? To enable insertion, some clearance will be foreseen which can be filled with morselized allografts.

10

Do you have any remarks concerning the **screw positioning**? (screws are not provided by Materialise NV)  
The use of titanium cancellous bone screws (Ø6.5mm) is recommended. The selected screws must have a maximal head height of 4.8 mm and a head diameter between 7.85 mm and 8 mm.

11

By default the aMace guides are designed to be compatible with a **3.2 mm drill**. Please specify the drill bit diameter corresponding to your choice of screws.

Materialise aMace

**MANUFACTURER INFORMATION**

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BELGIUM



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