

I veri problemi del bone loss acetabolare

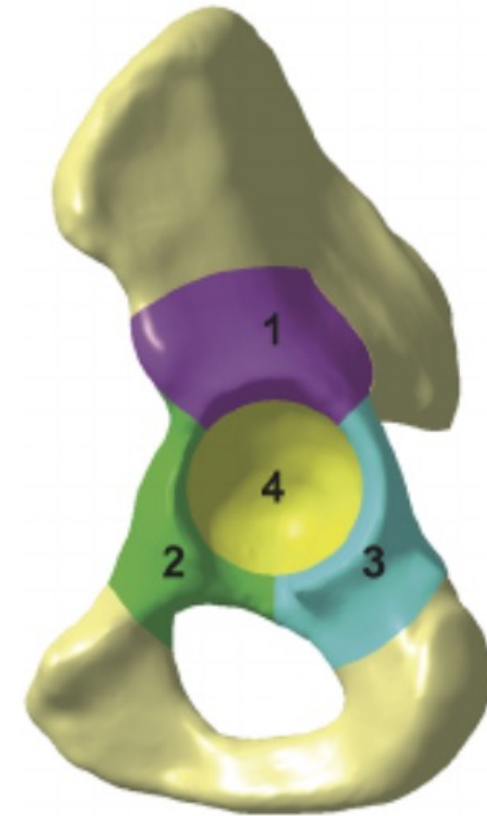
Prof. Francesco Traina

Chief of the Hip and Knee Department - Istituto Ortopedico Rizzoli
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Bone loss is not biomechanically equal everywhere

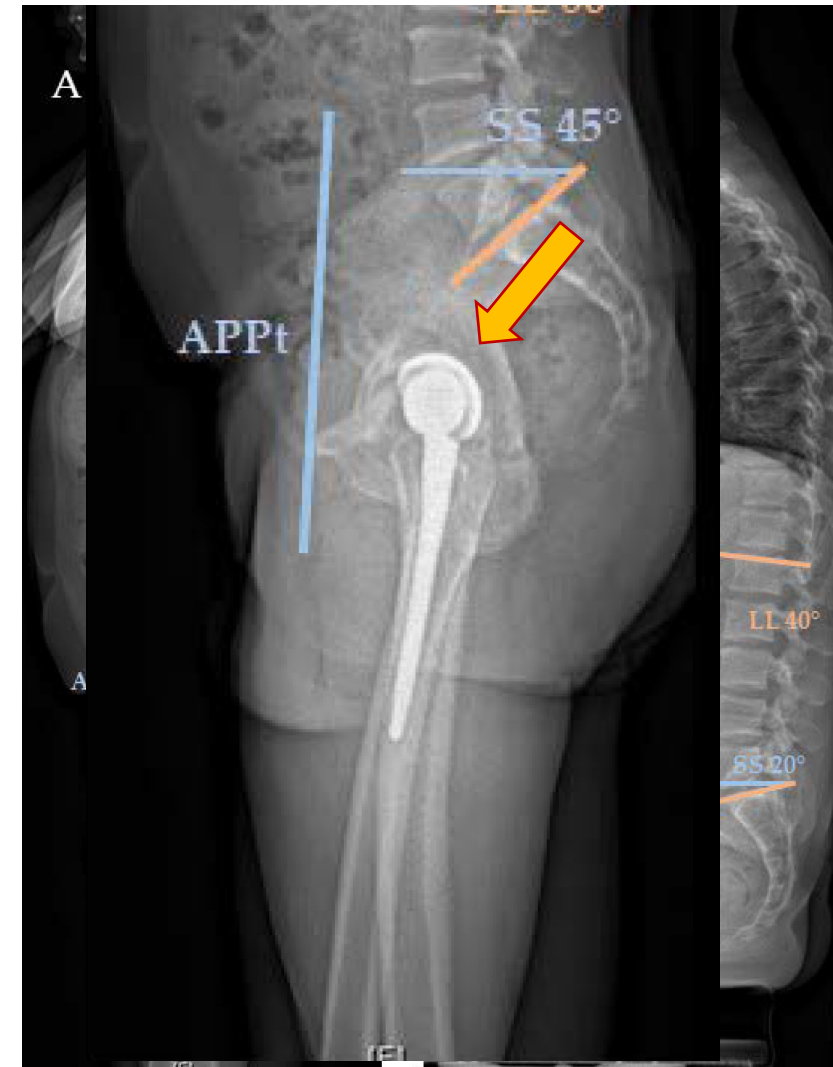
- Contained or uncontained bone loss is very different
- A posterior column (3) is much more difficult to address respect an anterior (2)
- Bone grafting in the upper acetabulum (1) is very little successful since is heavily loaded if left alone



Bone loss is not biomechanically equal everywhere

Posterior column and load

- In a standing position the peak of load is on the posterior-superior column
- Bone grafting under High load is subject to reabsorption and could lead to implant failure
- Implant –host bone direct contact should be achieved as much as possible in this area.



A new classification of acetabular bone loss

PLOS ONE

RESEARCH ARTICLE

Quantitative assessment of acetabular bone defects: A study of 50 computed tomography data sets

Ronja A. Schierjott^{1,2*}, Georg Hettich¹, Heiko Graichen³, Volkmar Jansson², Maximilian Rudert⁴, Francesco Traina^{5,6}, Patrick Weber², Thomas M. Grupp^{1,2}

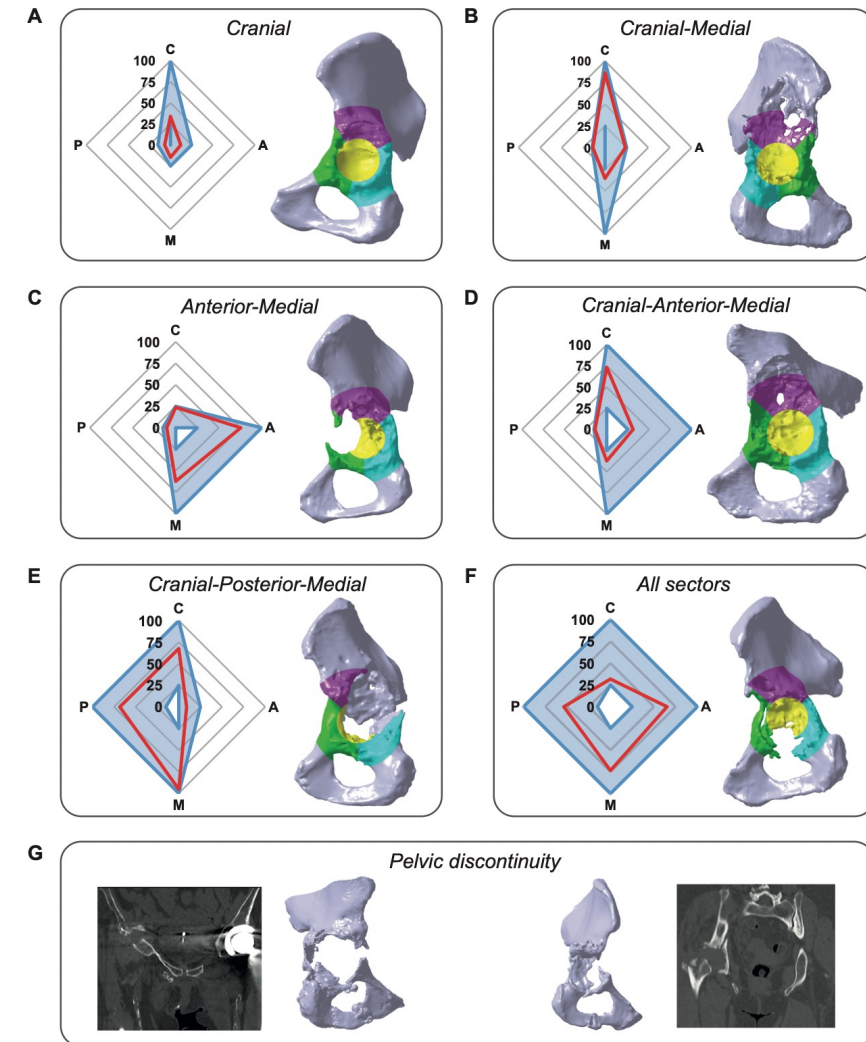
Journal of
Orthopaedic
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Method for quantitative assessment of acetabular bone defects

Georg Hettich ✉, Ronja A. Schierjott, Heiko Ramm, Heiko Graichen, Volkmar Jansson, Maximilian Rudert, Francesco Traina, Thomas M. Grupp, ... See fewer authors ^

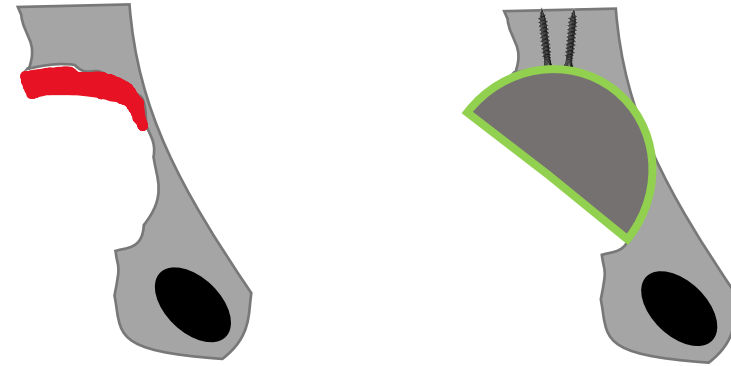
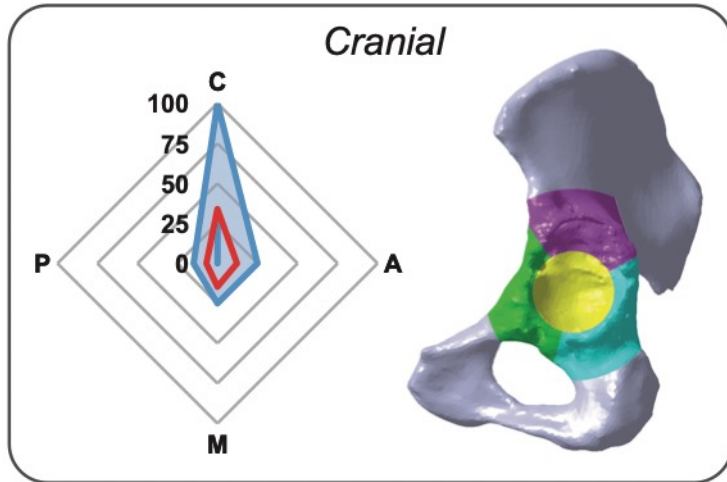
- Preoperative
- Quantitative
- Topographic
- Help to chose the strategy before surgery



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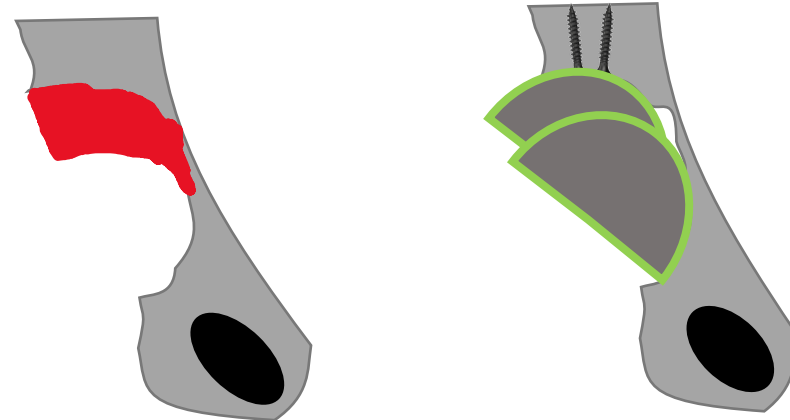
Cranial acetabular bone loss: easy solution

Less than 25%



- Large cup 2 screws or press fit cup

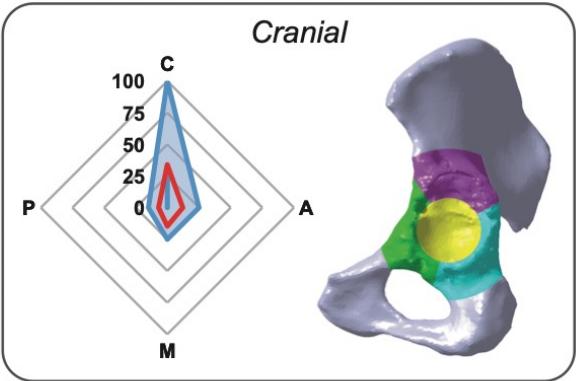
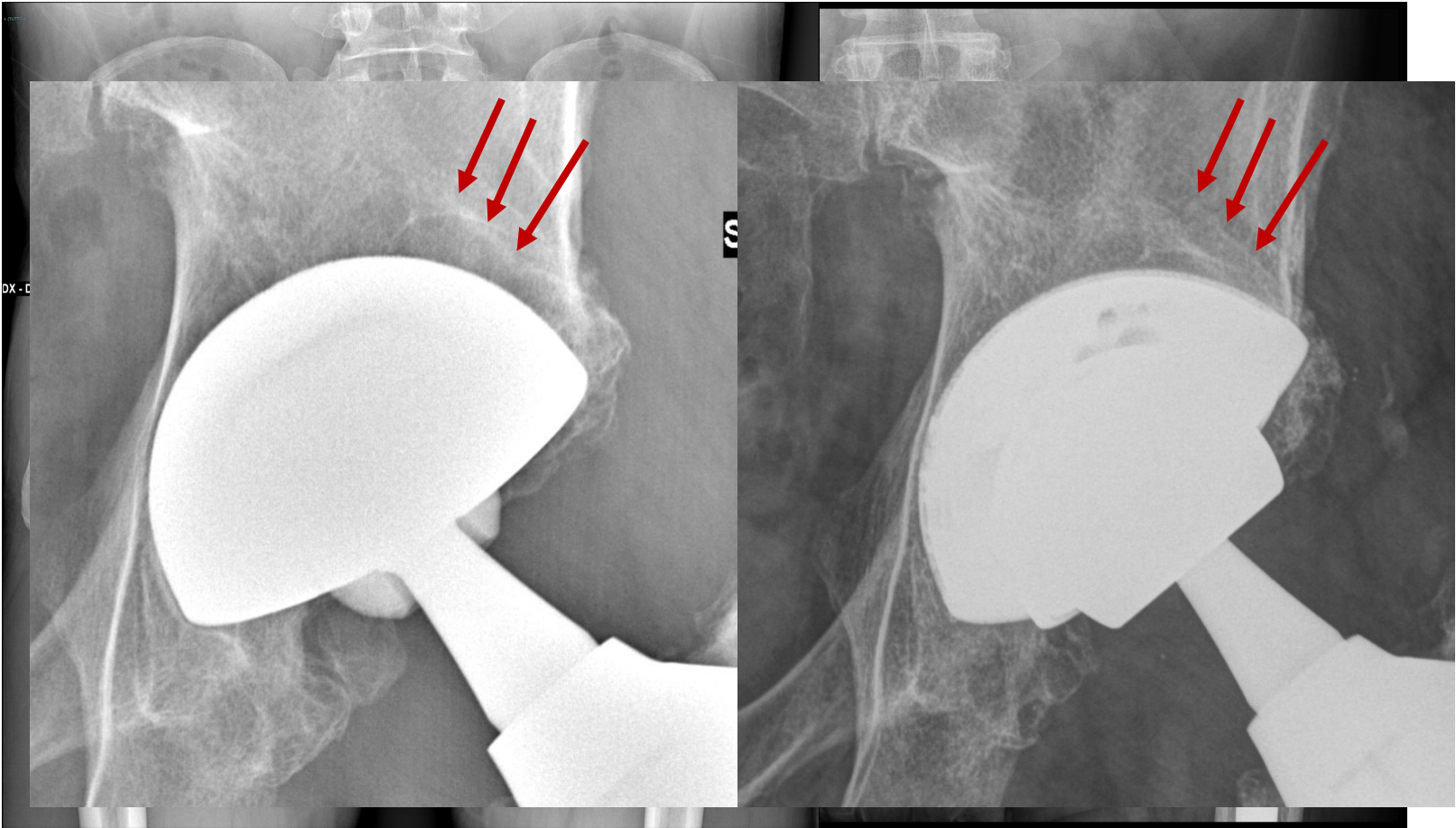
More than 25%



- Polar augmentation 2 screws

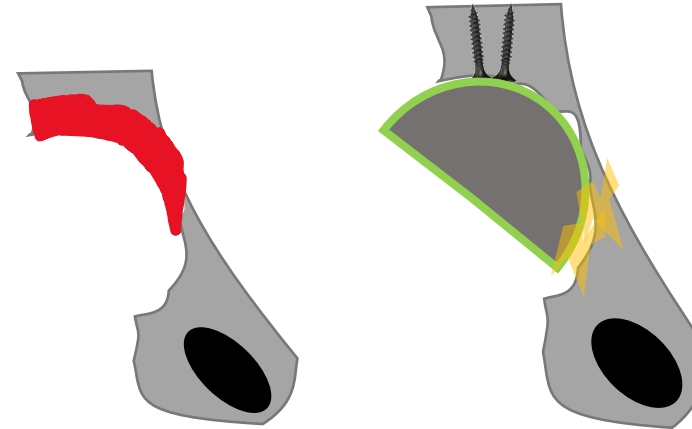


Cranial acetabular bone loss: easy solution

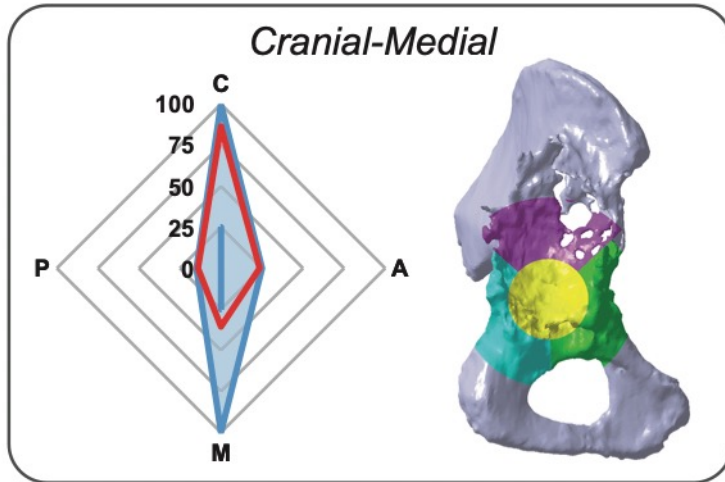


Cranial-Medial acetabular bone loss: almost easy solution

Less than 25%



- Large cup 2 screws medial bone grafting



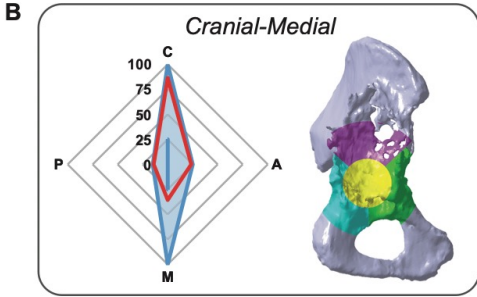
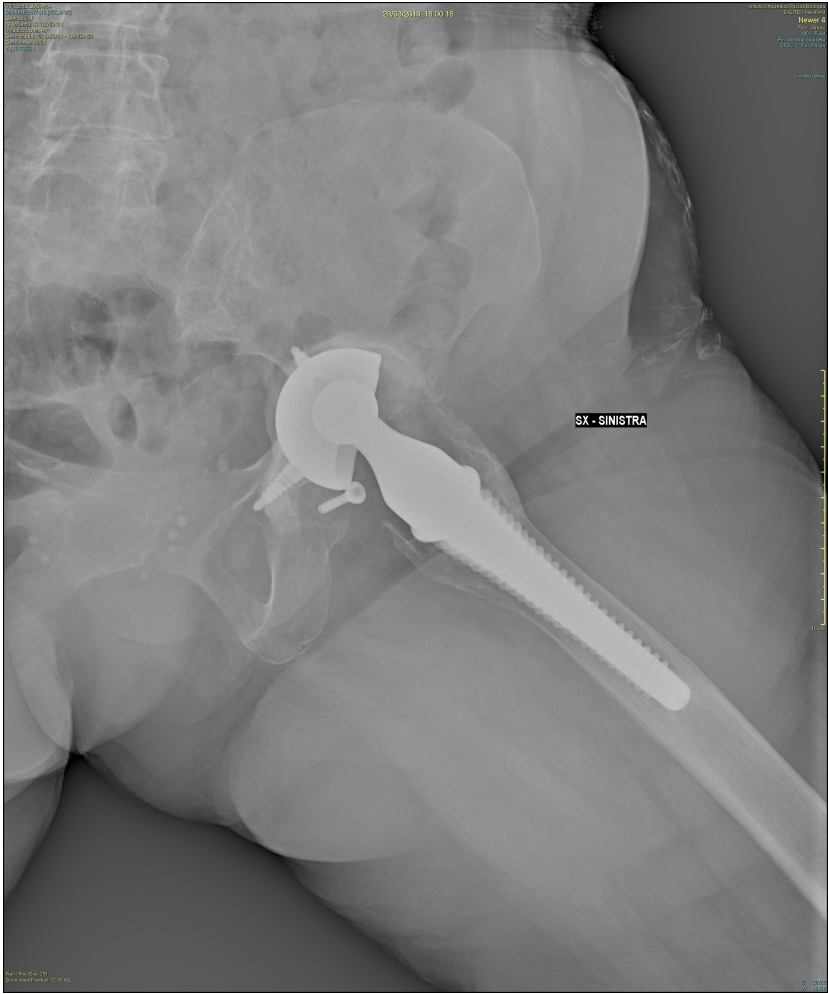
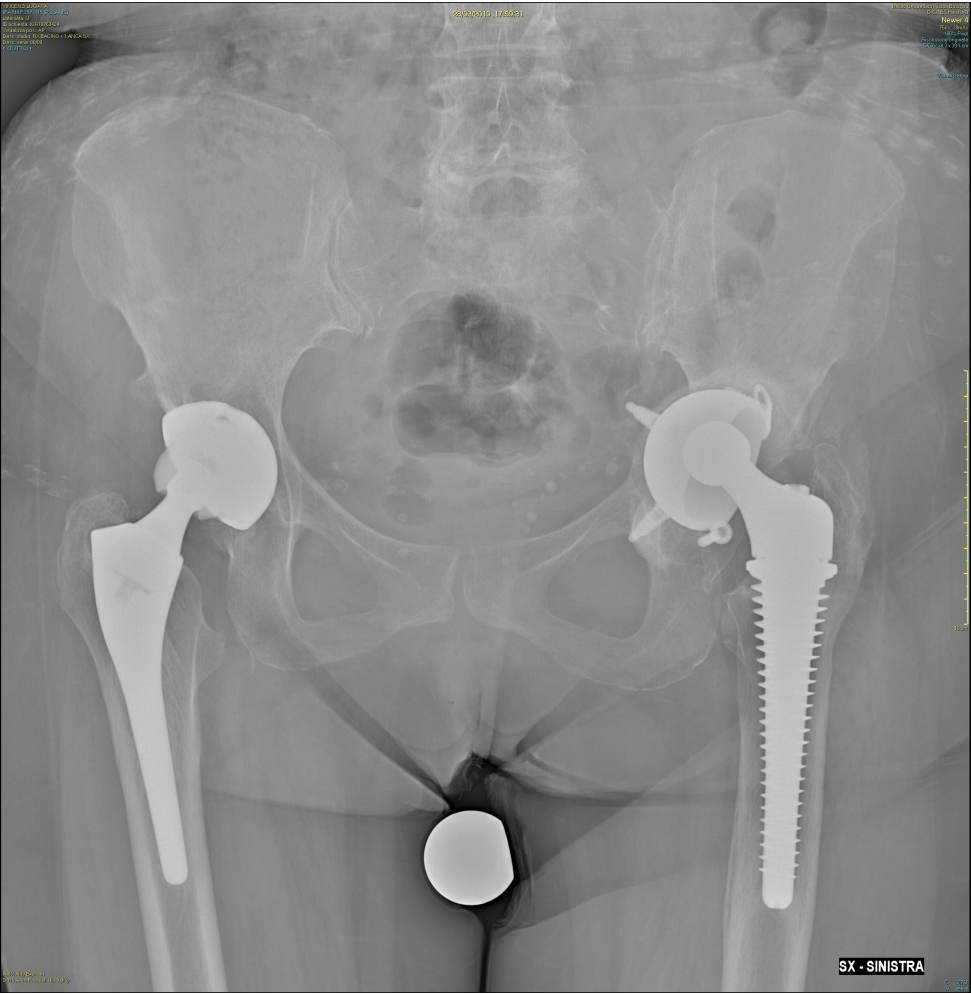
More than 25%



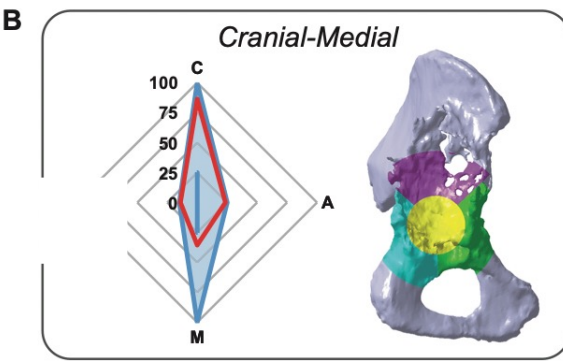
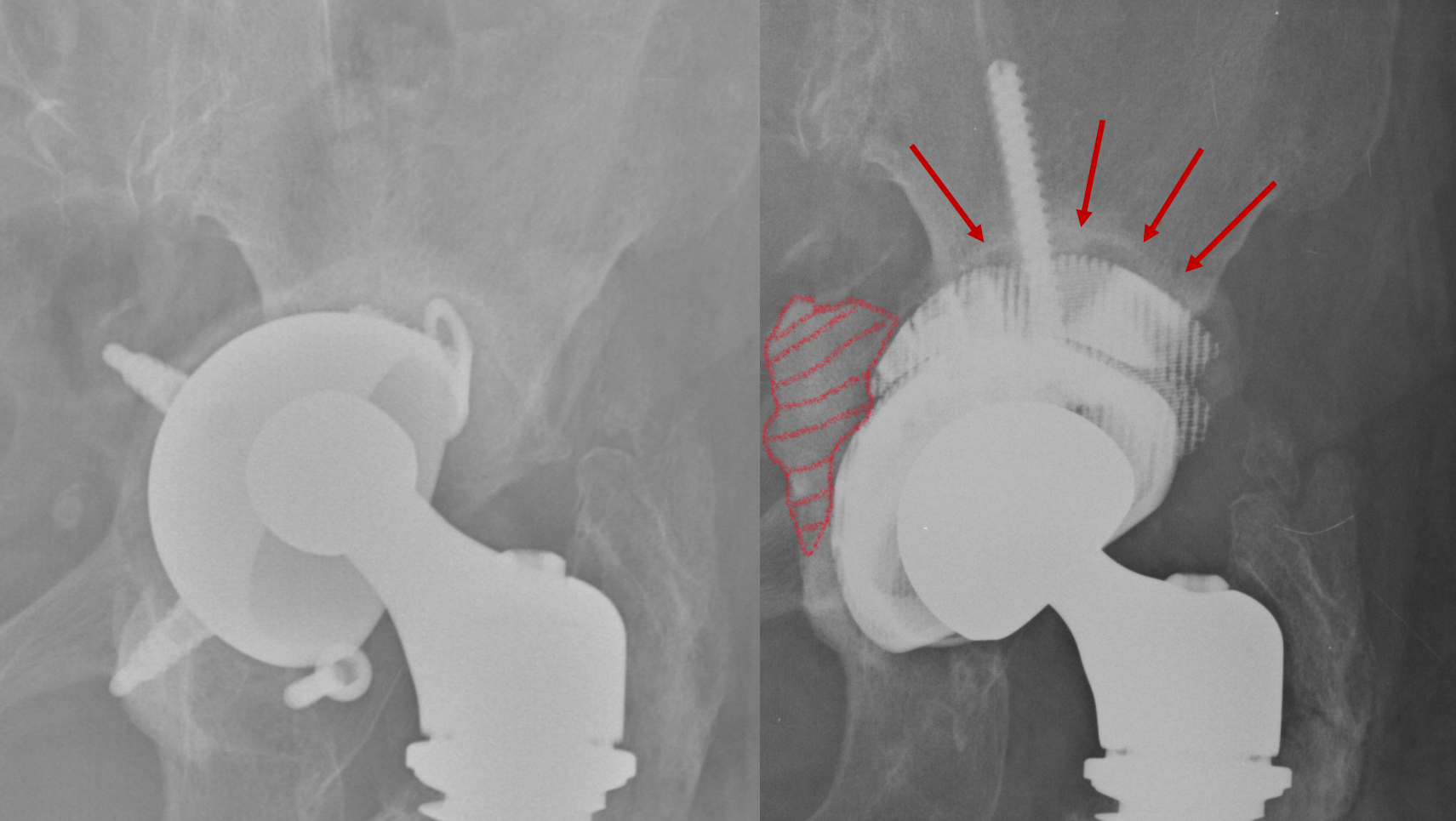
- Polar augmentation 2 screws medial bone grafting



Cranial-Medial acetabular bone loss: almost easy solution

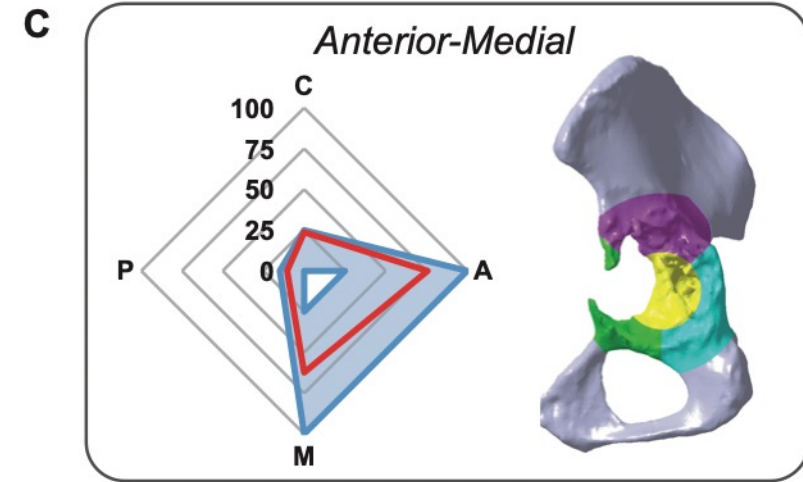
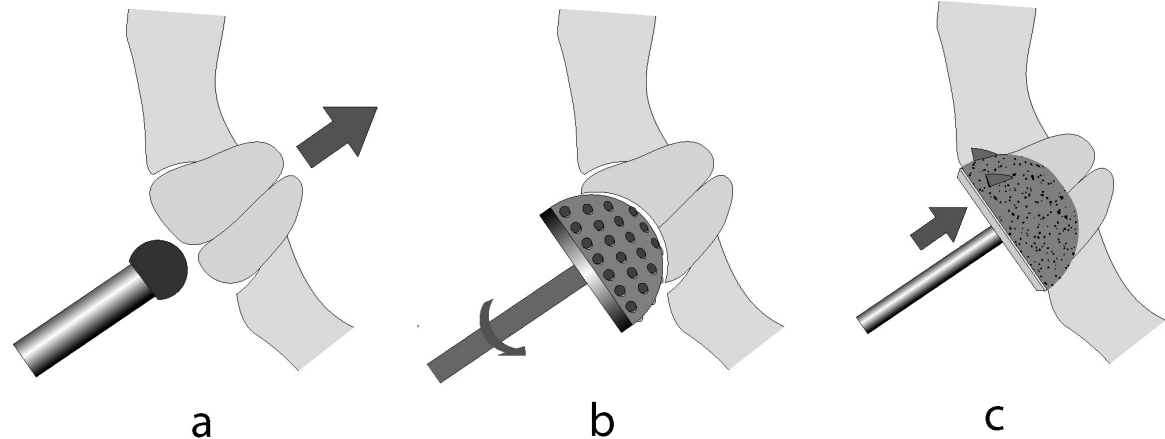
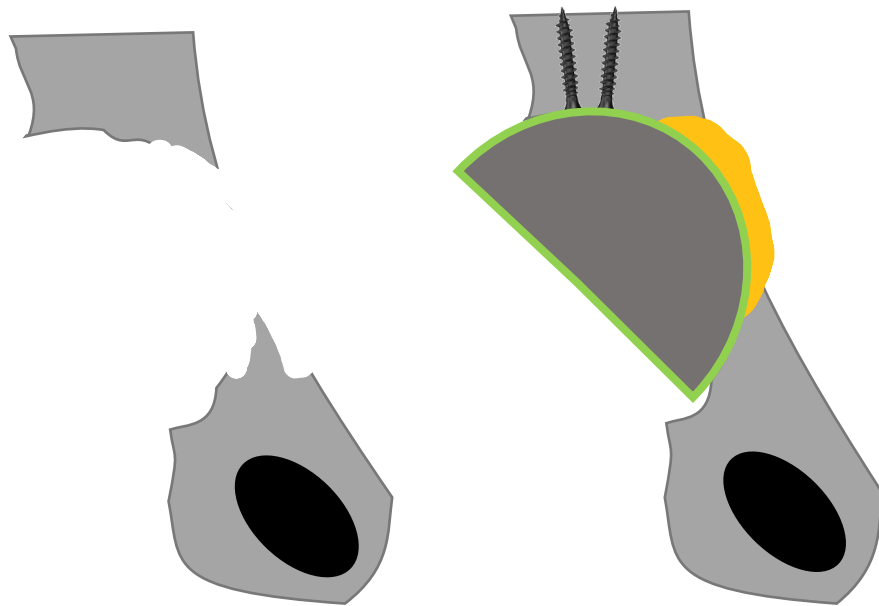


Cranial-Medial acetabular bone loss: almost easy solution

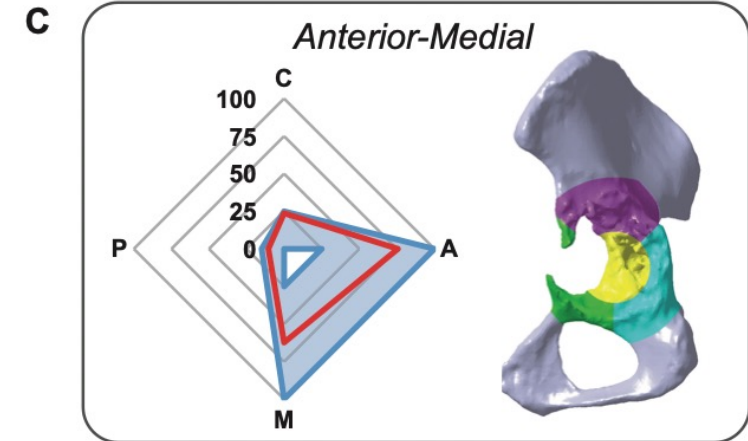
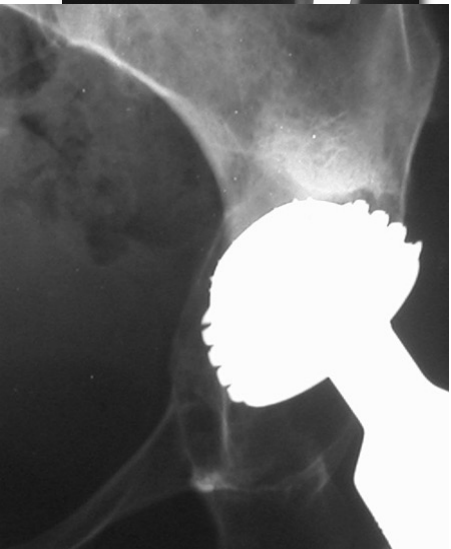
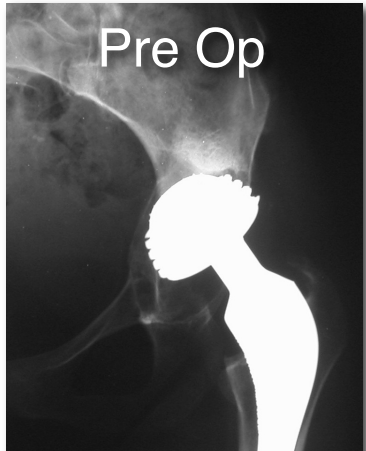


Anterior-Medial acetabular bone loss: almost easy solution

- Bone grafting, cup with 2 screws



Anterior-Medial acetabular bone loss: almost easy solution



International Orthopaedics (SICOT) (2005) 29: 135–139
DOI 10.1007/s00264-005-0640-z

ORIGINAL PAPER

F. Traina · F. Giardina · M. De Clerico · A. Toni

Structural allograft and primary press-fit cup for severe acetabular deficiency

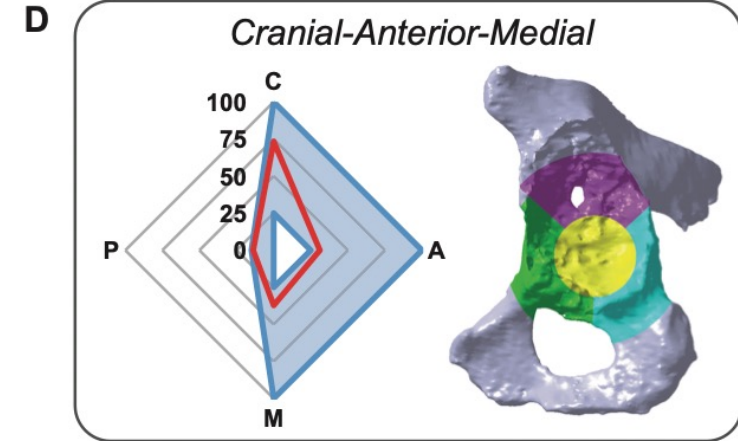
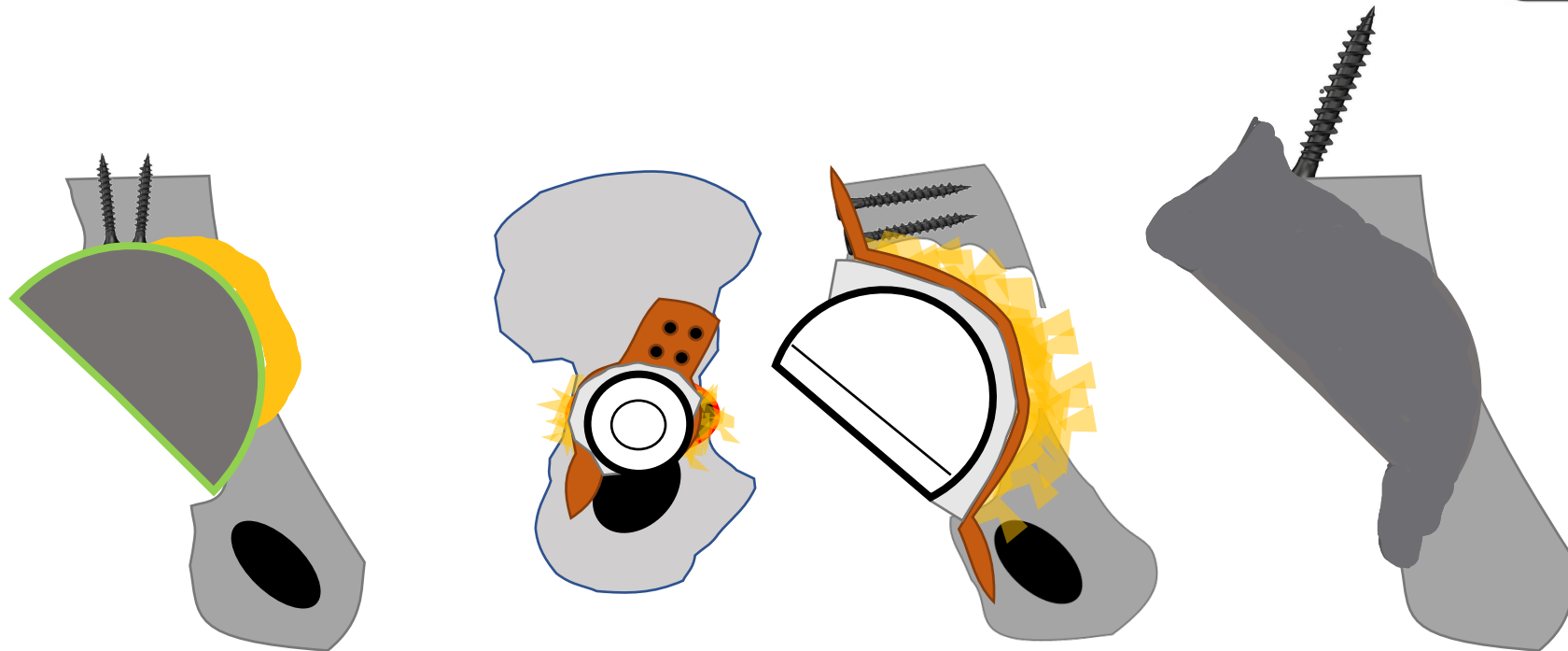
A minimum 6-year follow-up study



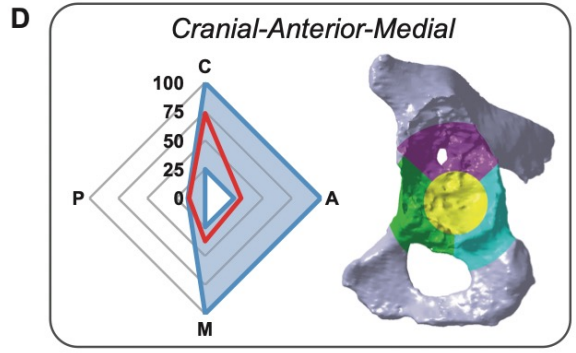
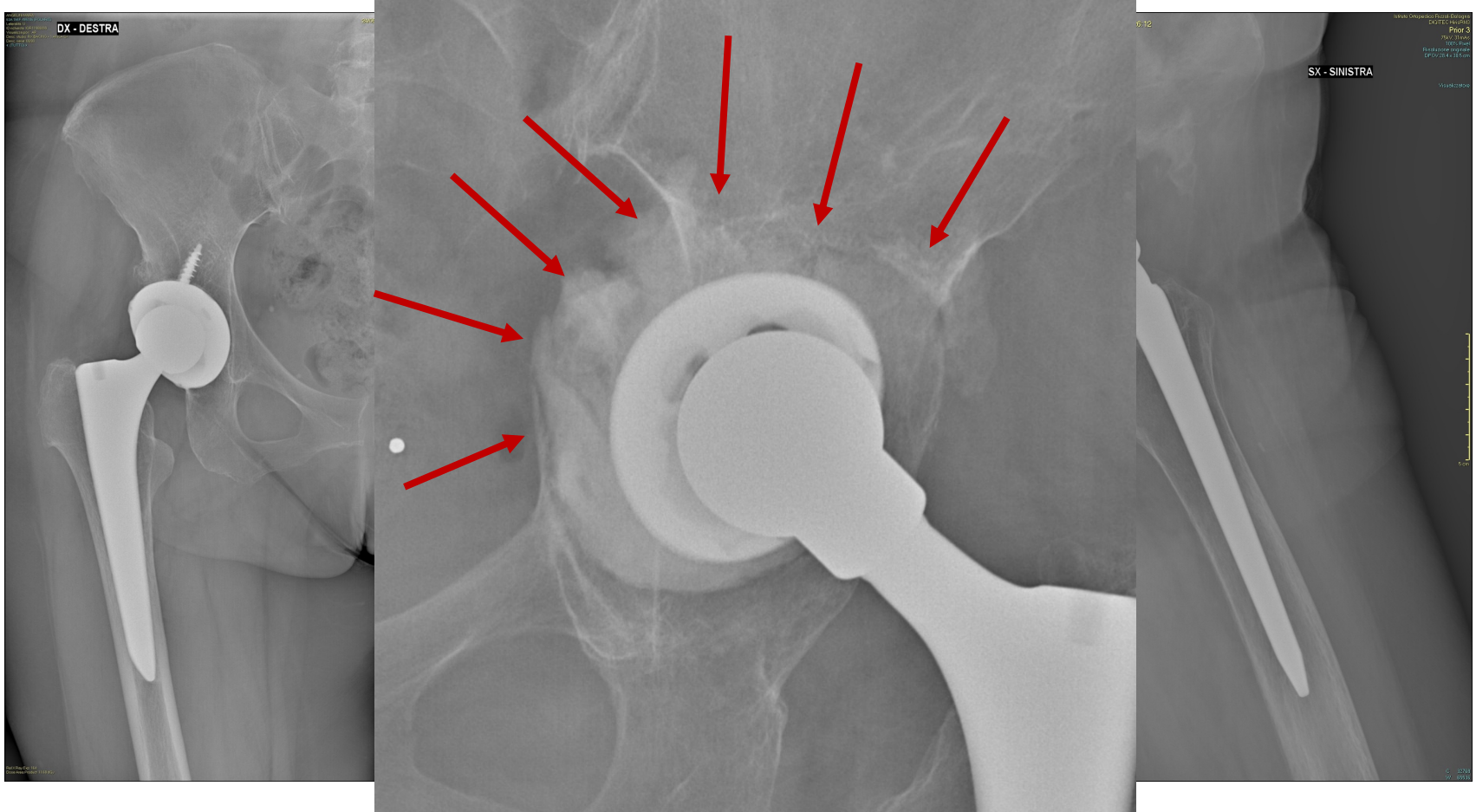
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Cranial-Anterior-Medial acetabular bone loss: not an easy solution

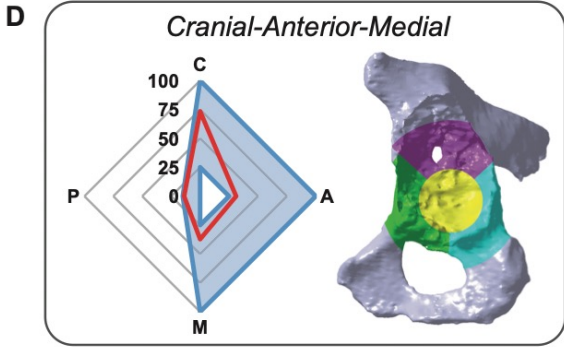
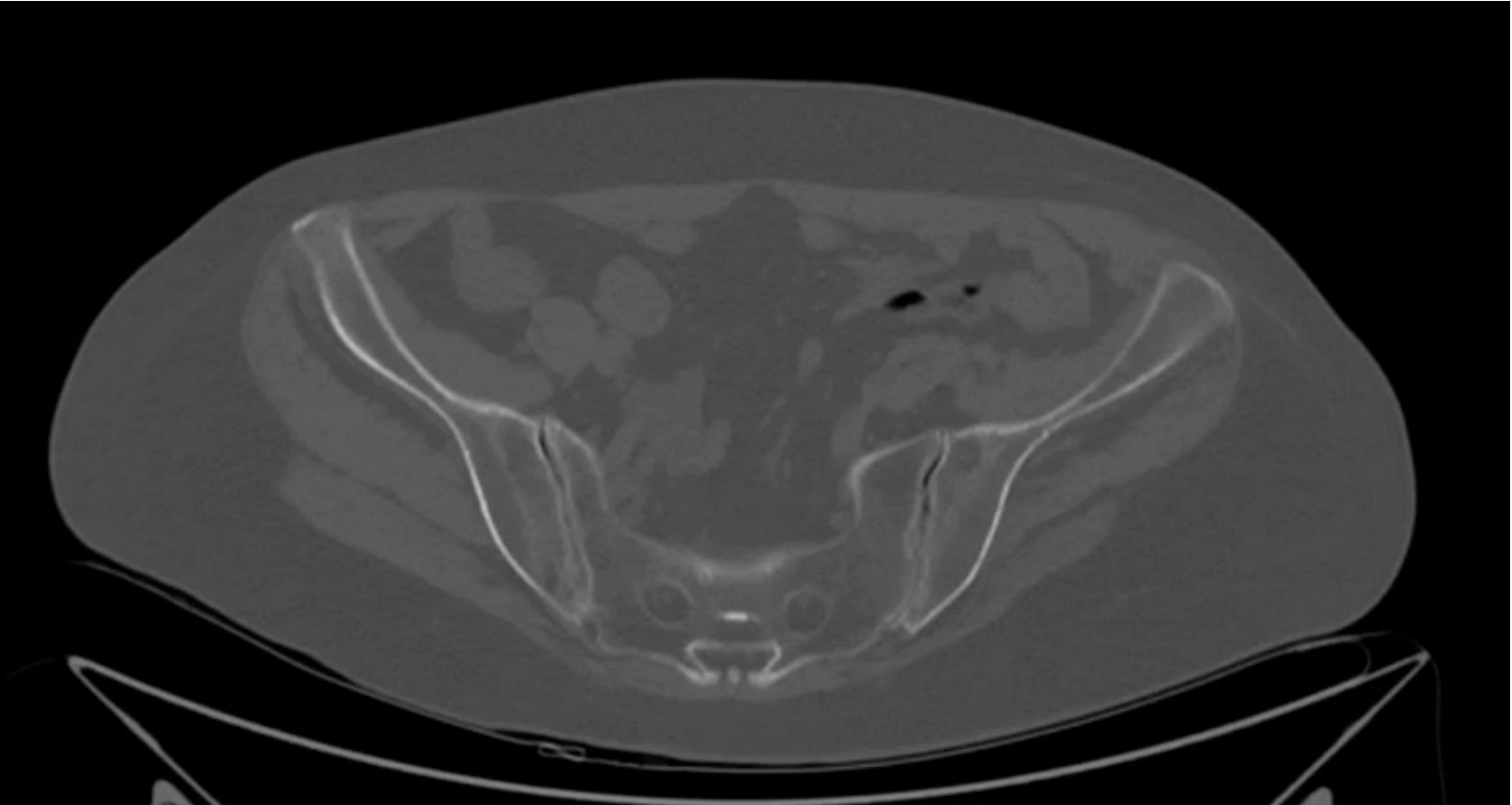
- Large cup 2 screws medial and anterior bone grafting, massive bone graft
- Cage grafting cemented cup
- Custom made



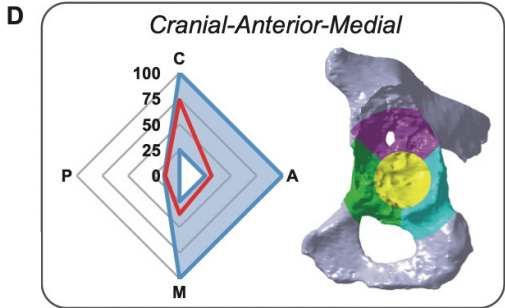
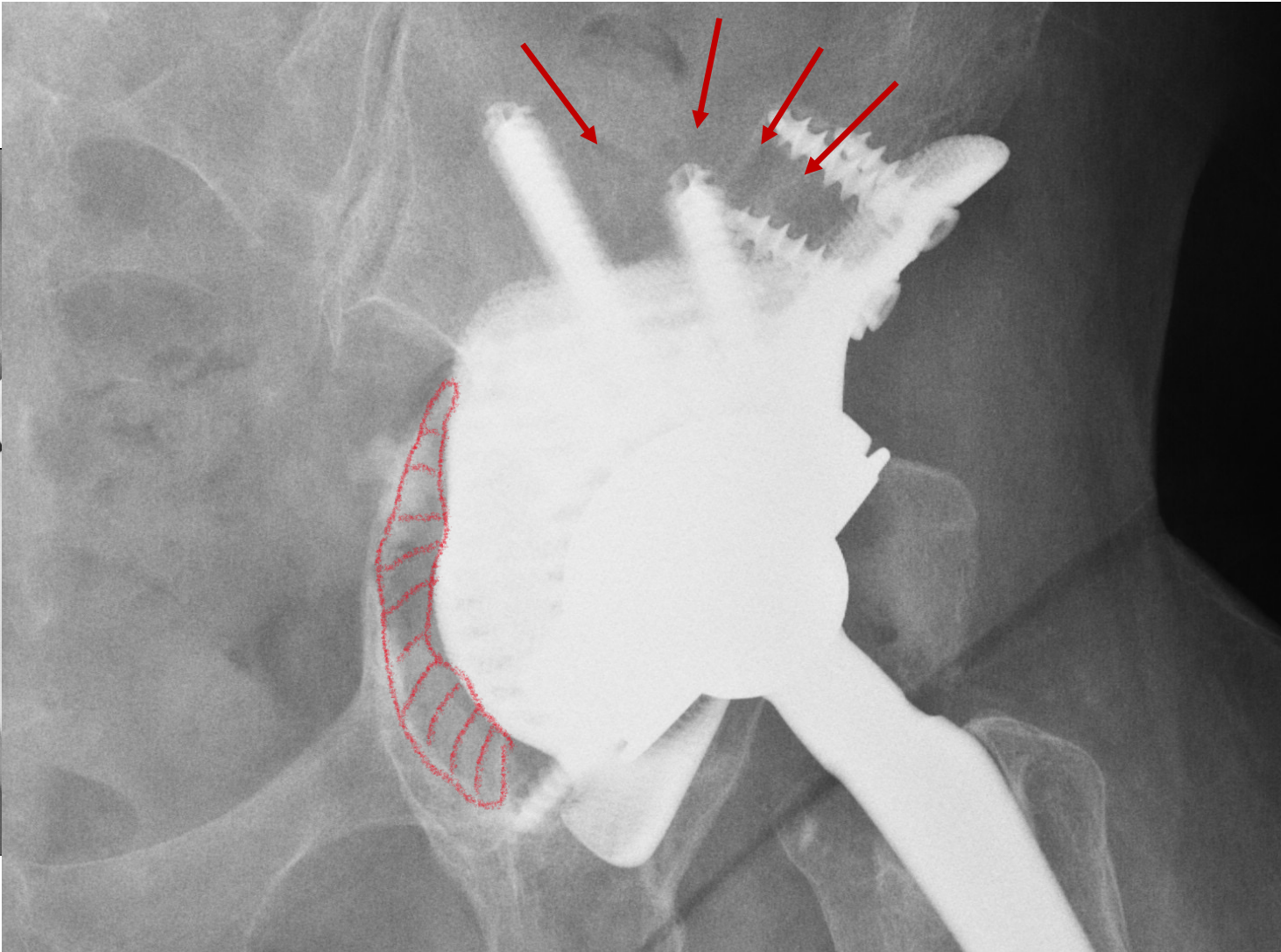
Cranial-Anterior-Medial acetabular bone loss: not an easy solution



Cranial-Anterior-Medial acetabular bone loss: not an easy solution



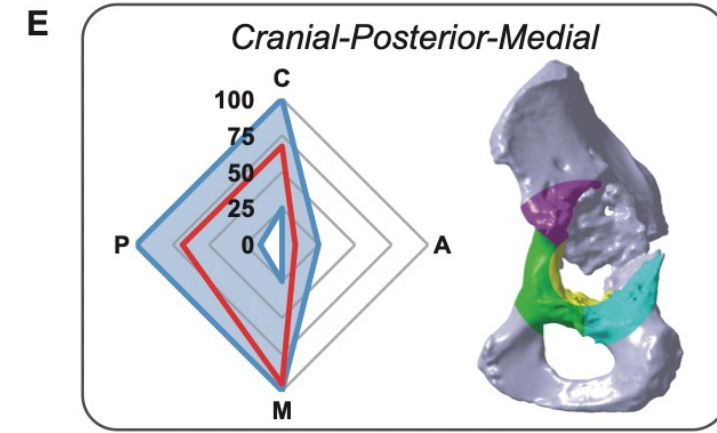
Cranial-Anterior-Medial acetabular bone loss: not an easy solution



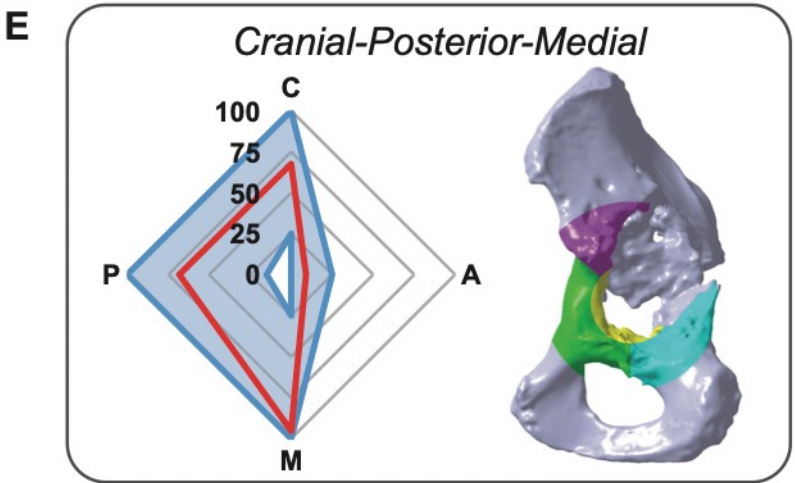
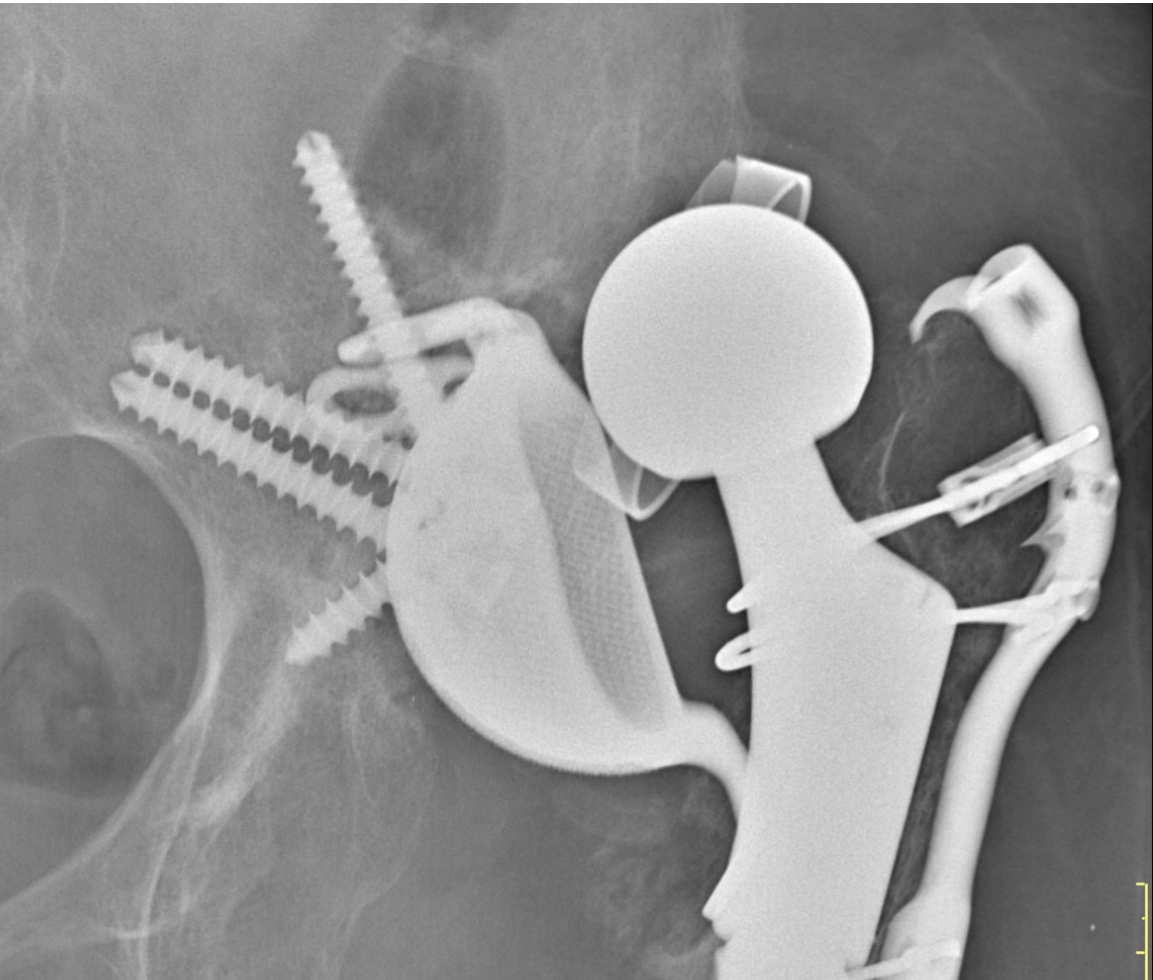
Cranial-Posterior-Medial acetabular bone loss: a demanding surgery

One of the most difficult cases to treat
Posterior column fundamental for cup stability

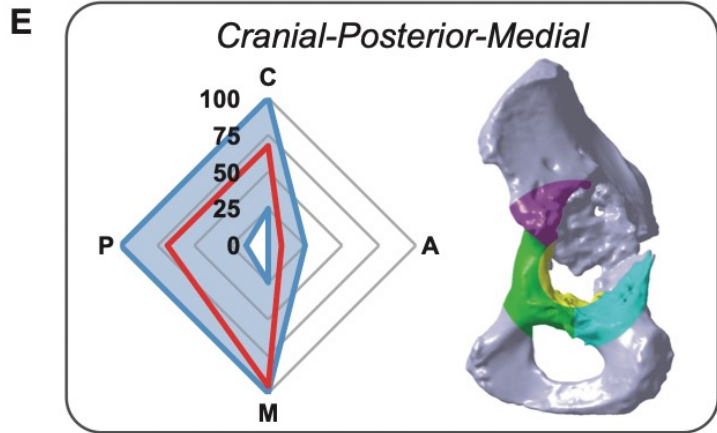
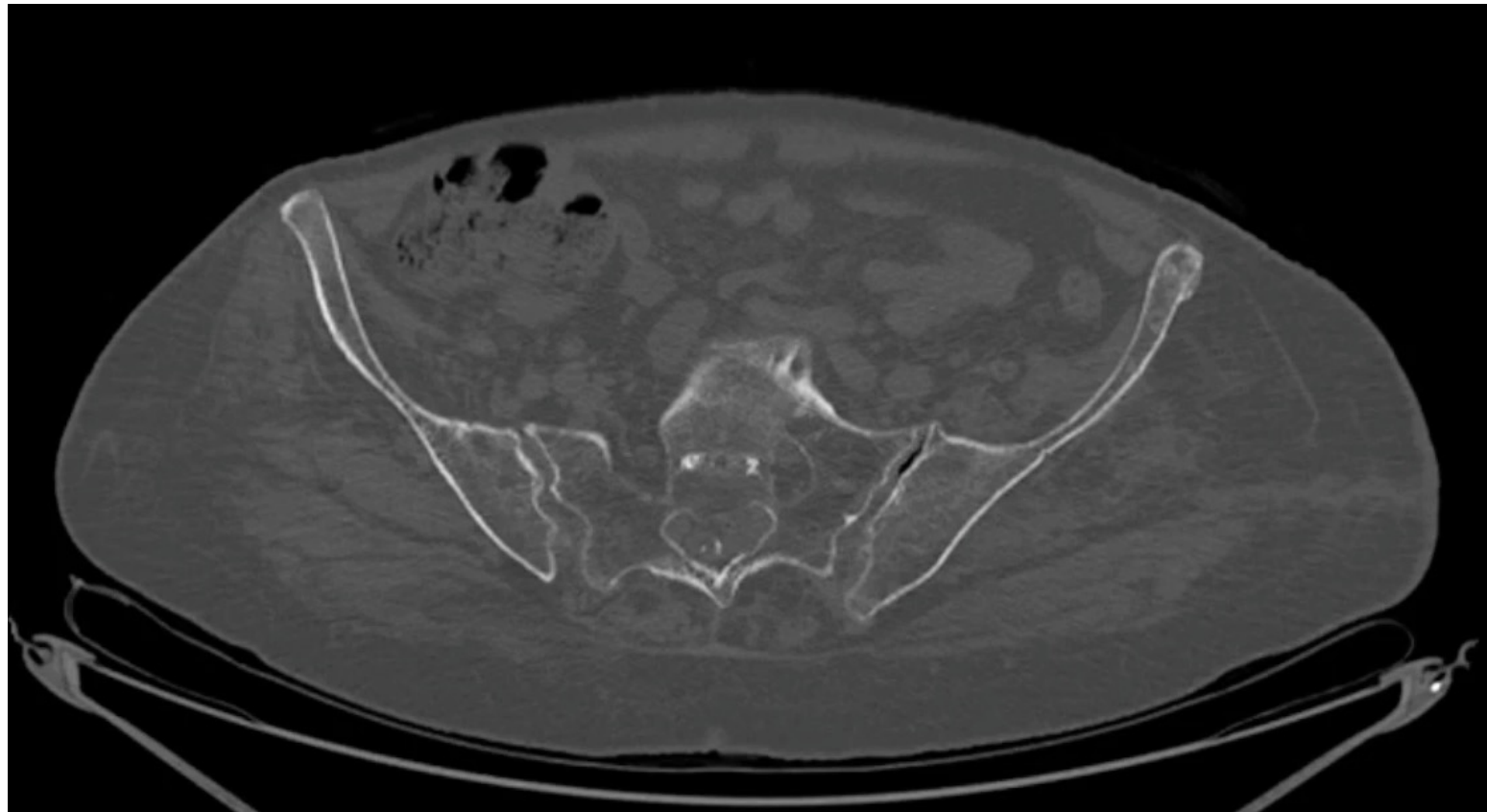
- Custom made prosthesis
- Cage grafting cemented cup
- Massive bulk bone graft
- Massive bulk bone graft



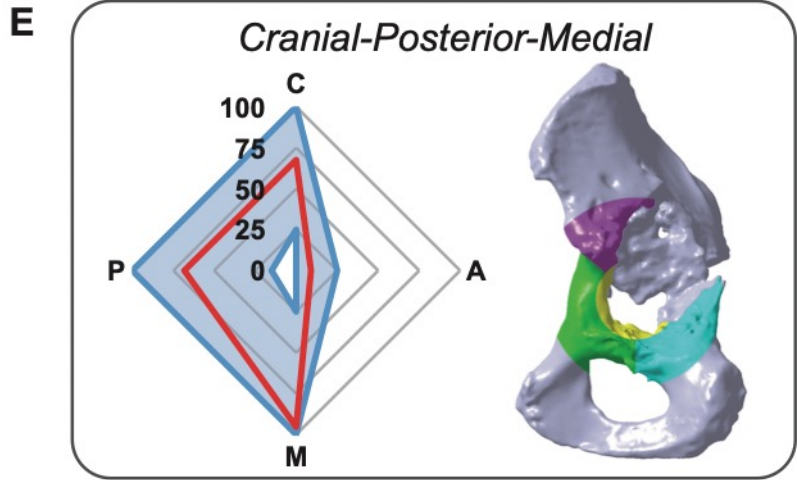
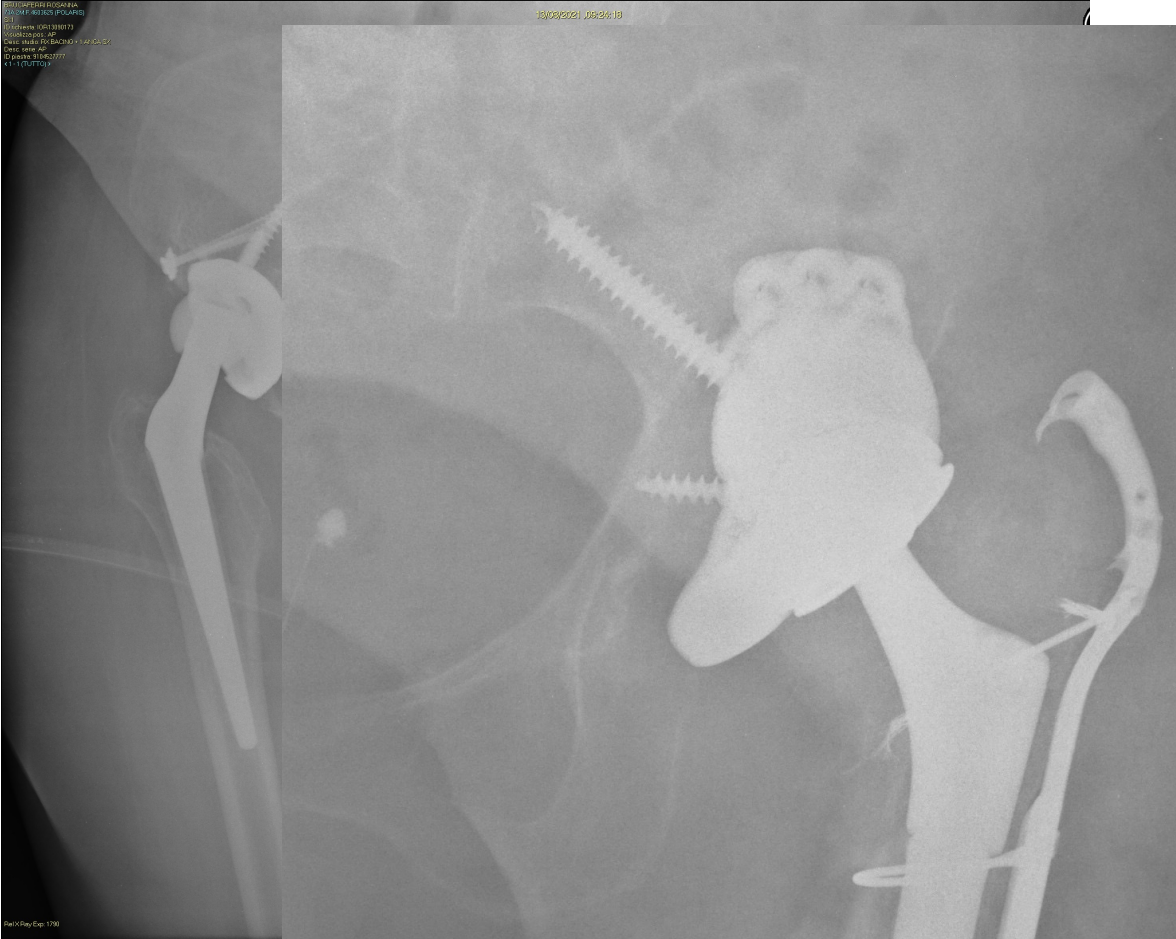
Cranial-Posterior-Medial acetabular bone loss: a demanding surgery



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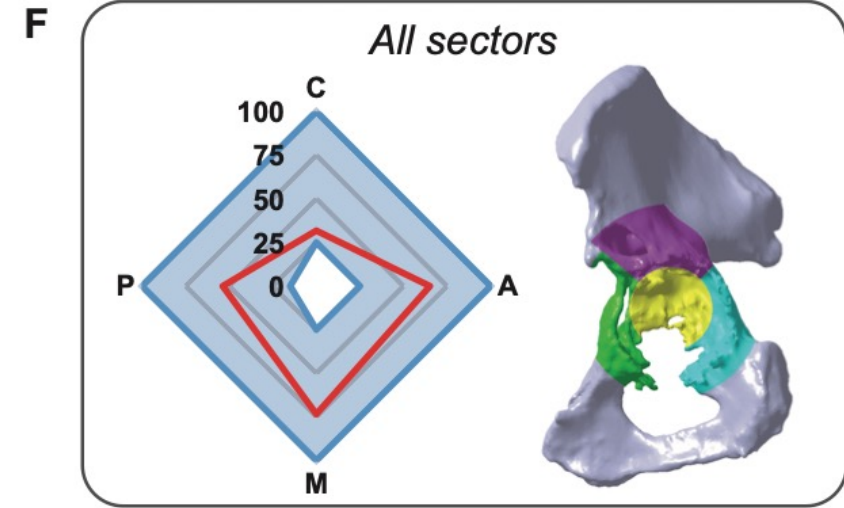


Cranial-Posterior-Medial acetabular bone loss: a demanding surgery



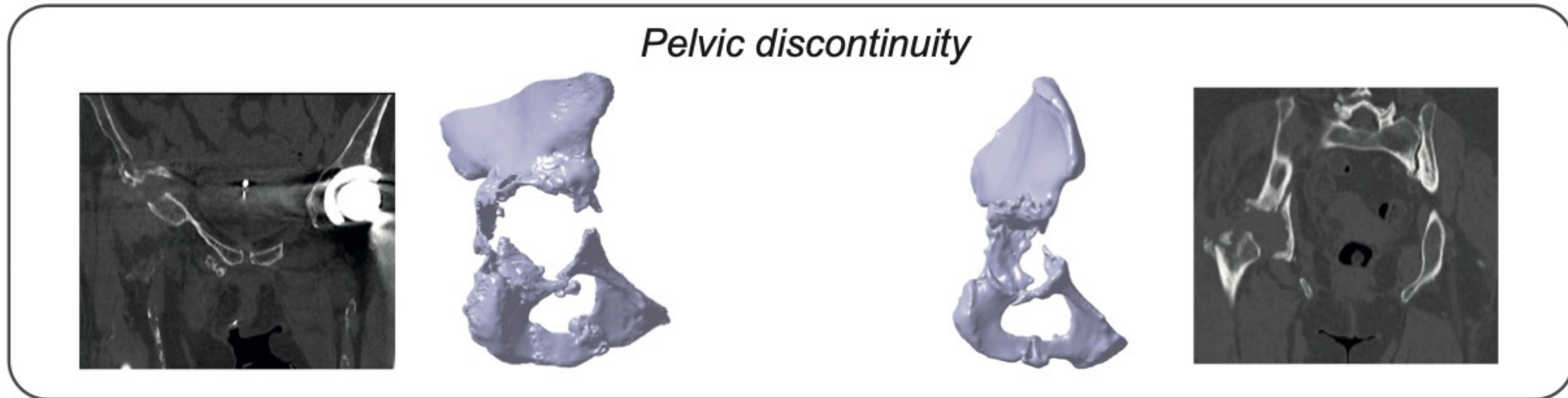
Pelvic discontinuity: a very demanding surgery

Challenge procedures, they require a a revision system to achieve primary stability could be either a cage a revision cup with augments or a custom made prosthesis

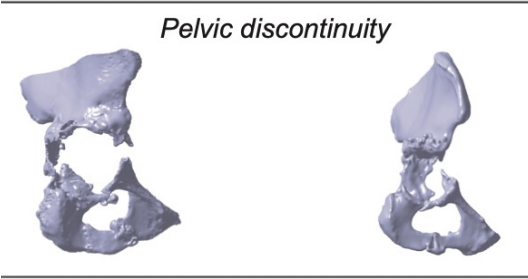


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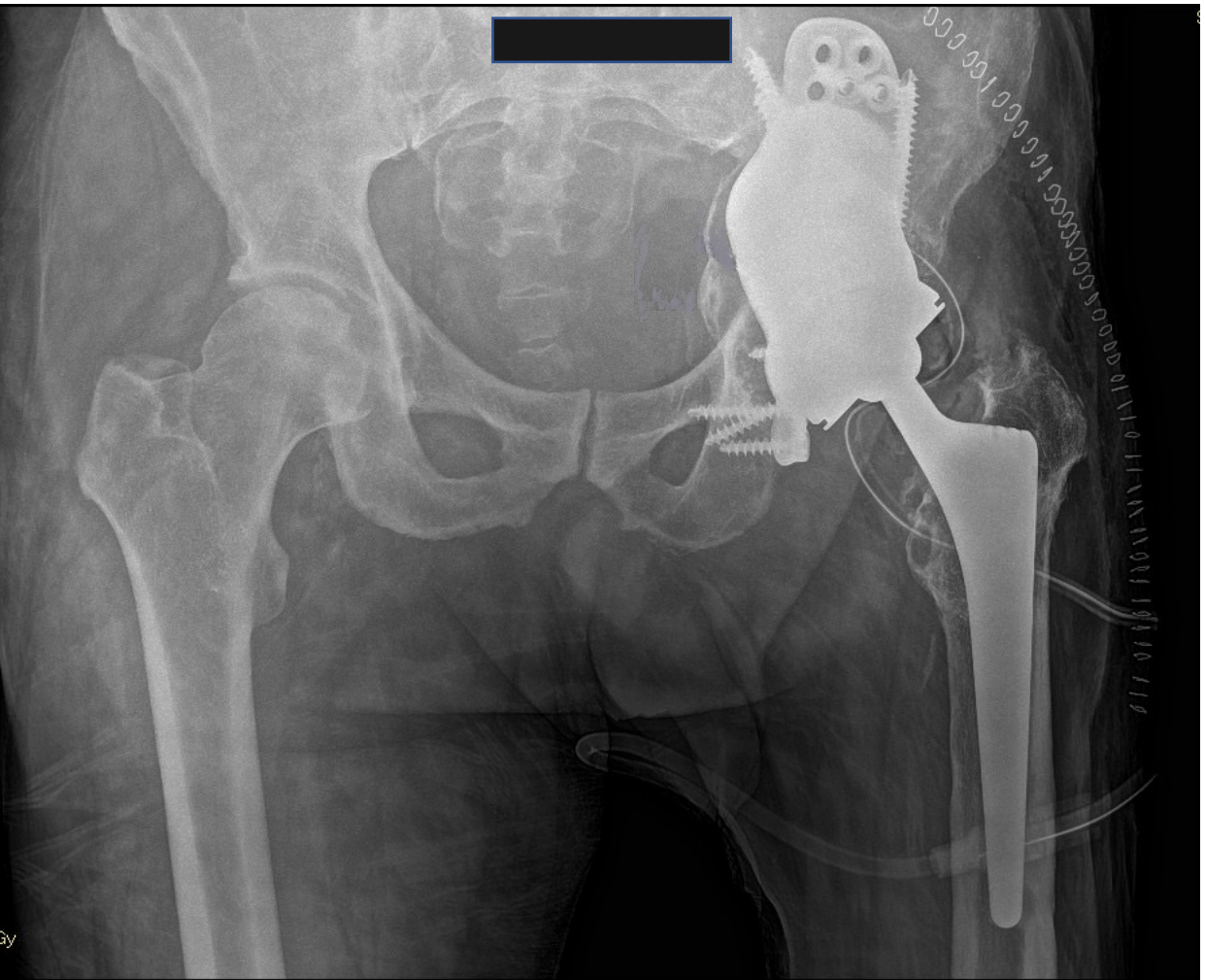
Pelvic discontinuity



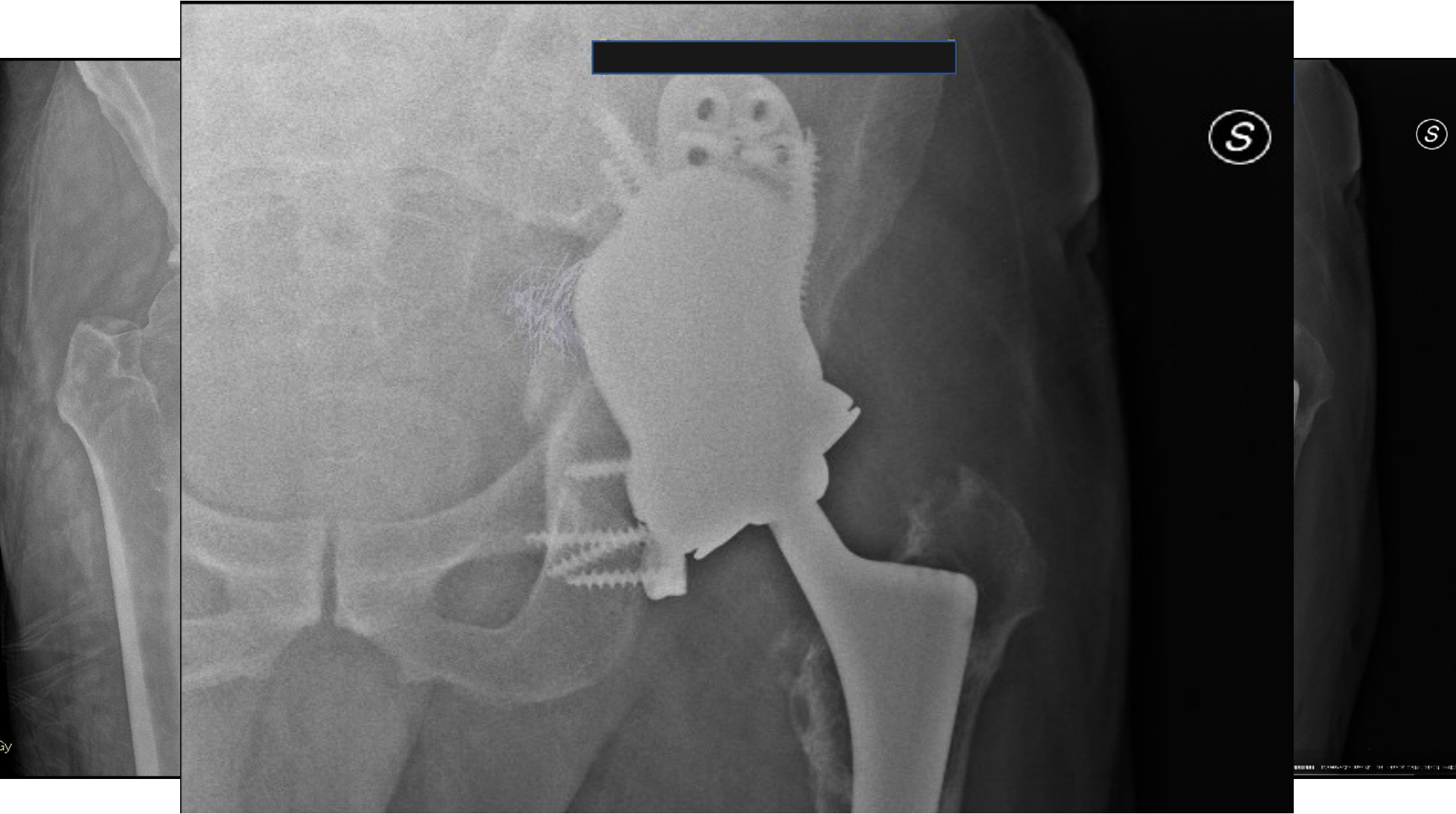
Pelvic discontinuity: a very demanding surgery



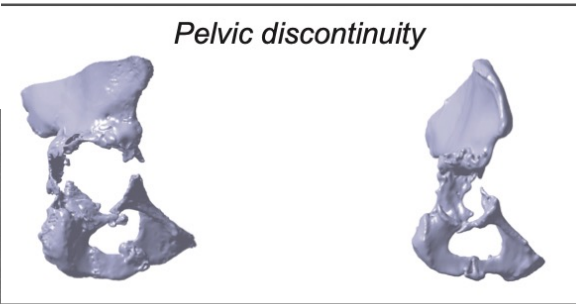
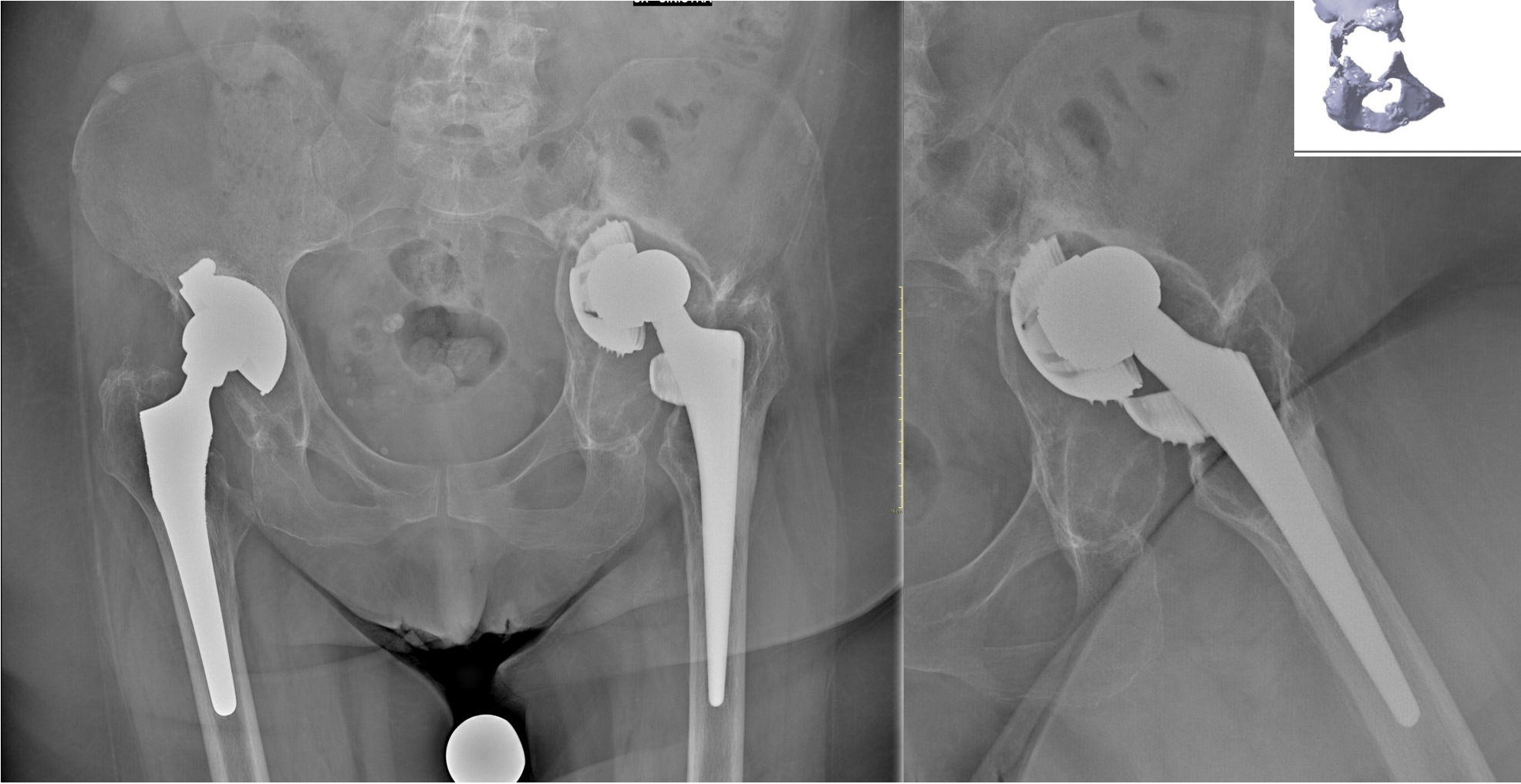
Pelvic discontinuity: a very demanding surgery



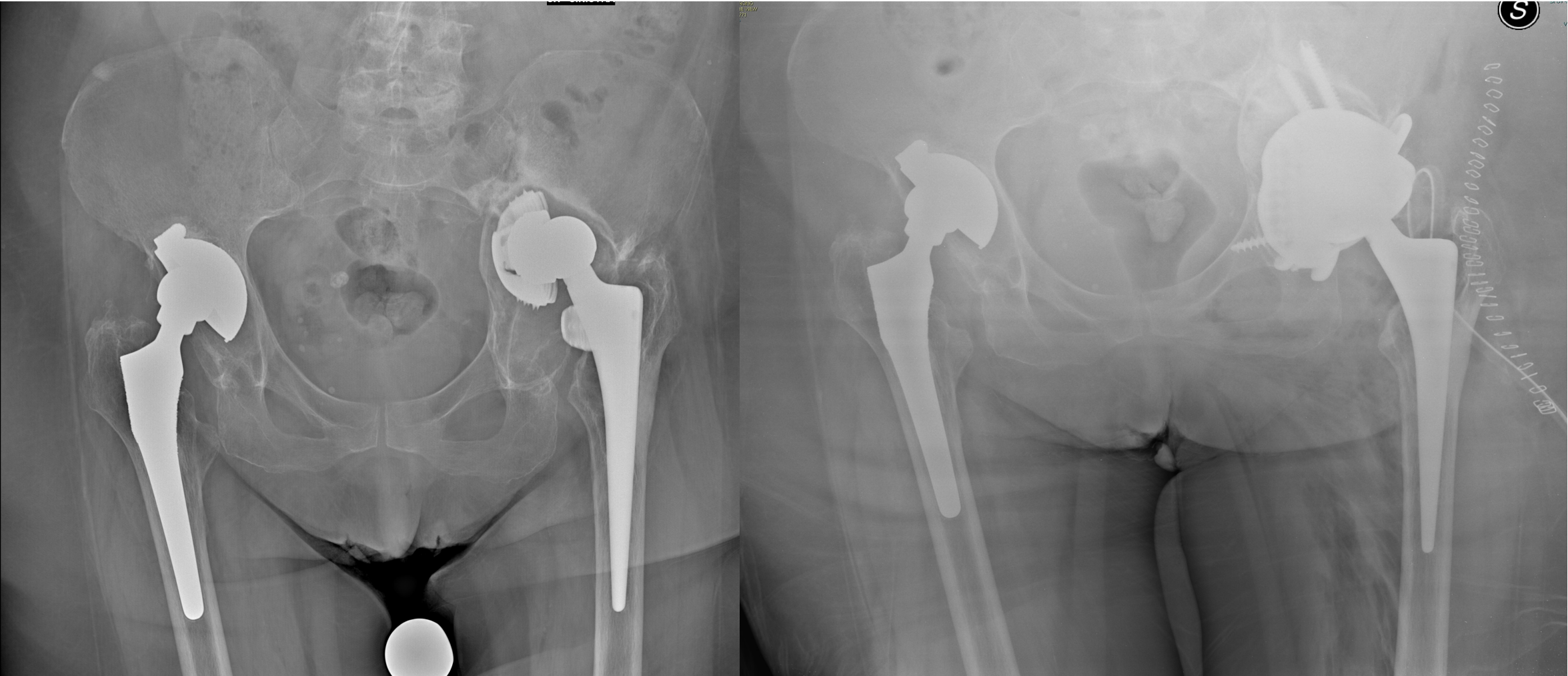
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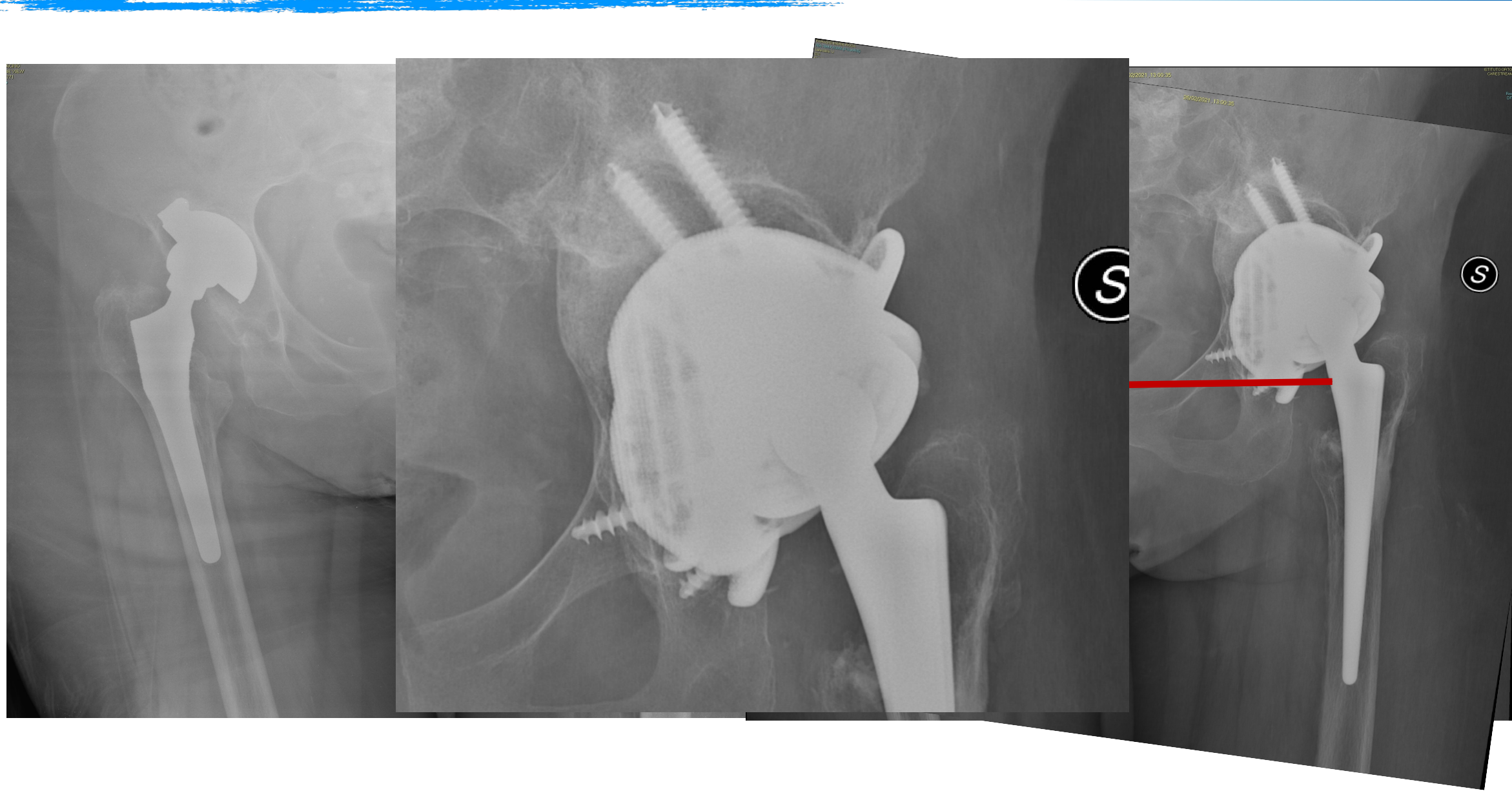
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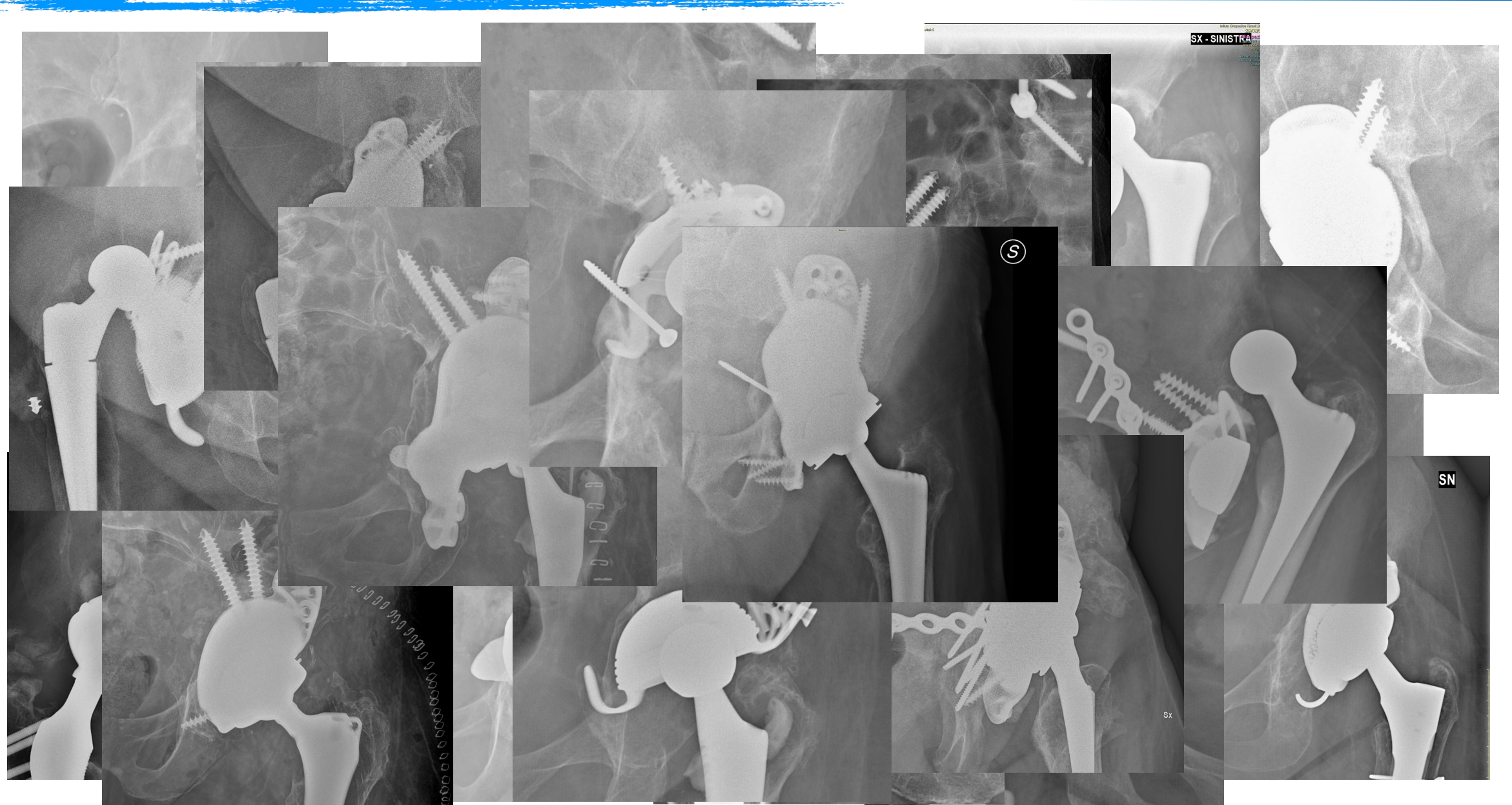
Pelvic discontinuity: a very demanding surgery



Pelvic discontinuity: a very demanding surgery



Pelvic discontinuity: a very demanding surgery



Take-home message

- Bone loss is the real problem in acetabular revisions
- A quantitative and topographic classification is useful
- Pre op plan is mandatory to chose the correct strategy
- Goal is to restore hip biomechanics
- Modular cups are very versatile
- Custom made cups are useful for major revisions





Thank you