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Case Report

Use of Silver-Coated Femoral Megaprosthesis in a Patient with Revision Hip Arthroplasty Associated with Osteomyelitis: A Case Report

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Introduction

The use of megaprostheses constitutes a salvage therapeutic alternative in non-neoplastic conditions, with the main indication being the loss of bone stock in failed hip arthroplasty (HA). The metallic modification of implants emerges as an alternative to reduce the associated risks of periprosthetic infection (PI). Objectives: To describe a clinical case of using silver-coated megaprosthesis as salvage treatment in a patient with a history of revision HA and osteosynthesis associated with bone stock deficit due to osteomyelitis.

Clinical Case

A 64-year-old woman with a history of breast cancer, bilateral avascular necrosis of the femoral heads, bilateral HA, and left HA revision due to aseptic loosening. In February 2020, she presented with a Vancouver C periprosthetic fracture that required fixation with osteosynthesis. In January 2021, she consulted for a middle-third ipsilateral thigh fistula, leading to implant removal and spacer placement with cement on three occasions. Intraoperative cultures were positive for Klebsiella Pneumoniae, managed with Ertapenem for 8 weeks. Due to bone defect, in January 2023, total femur arthroplasty with silver-coated megaprosthesis was performed, with favorable clinical evolution to date.

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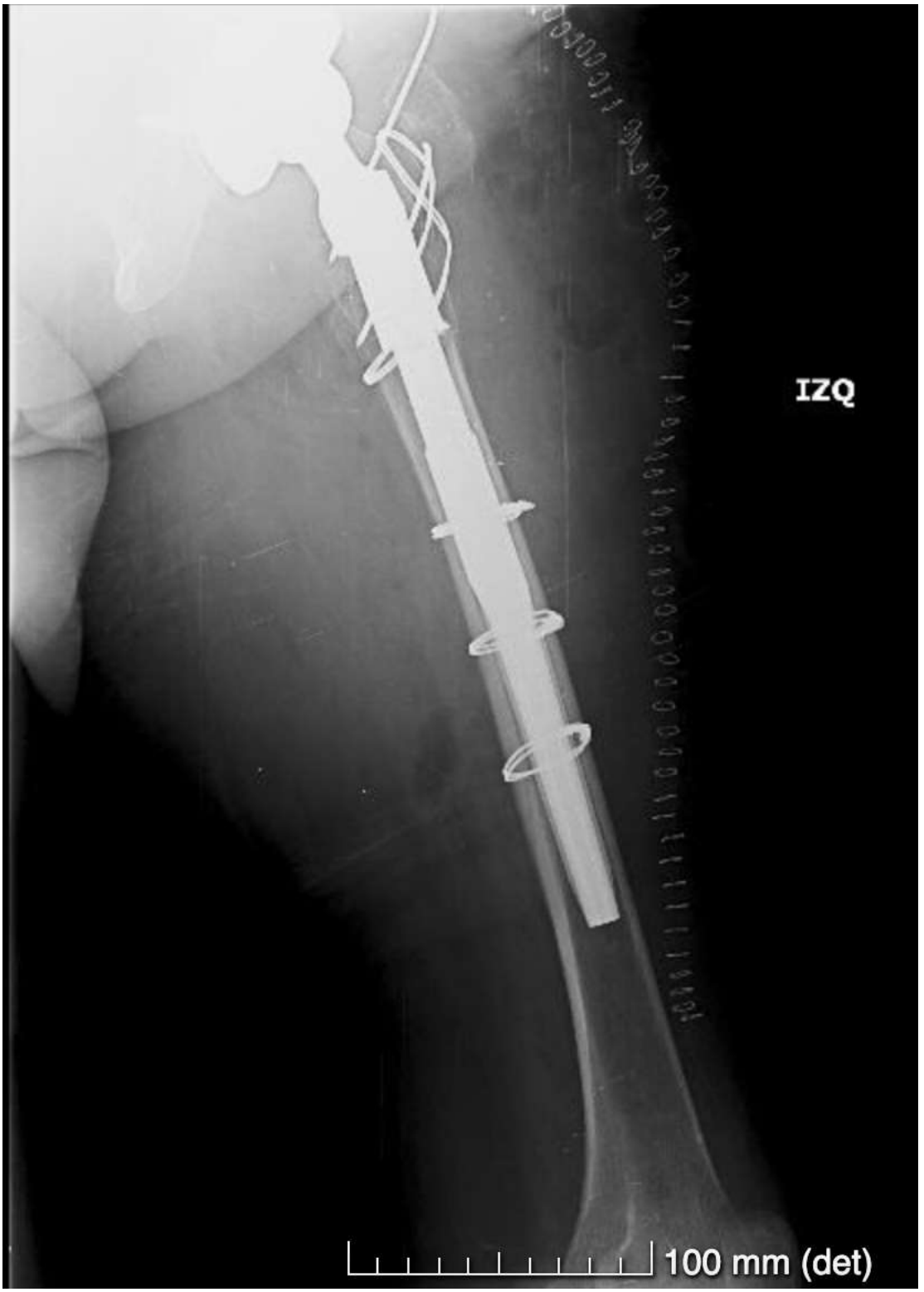

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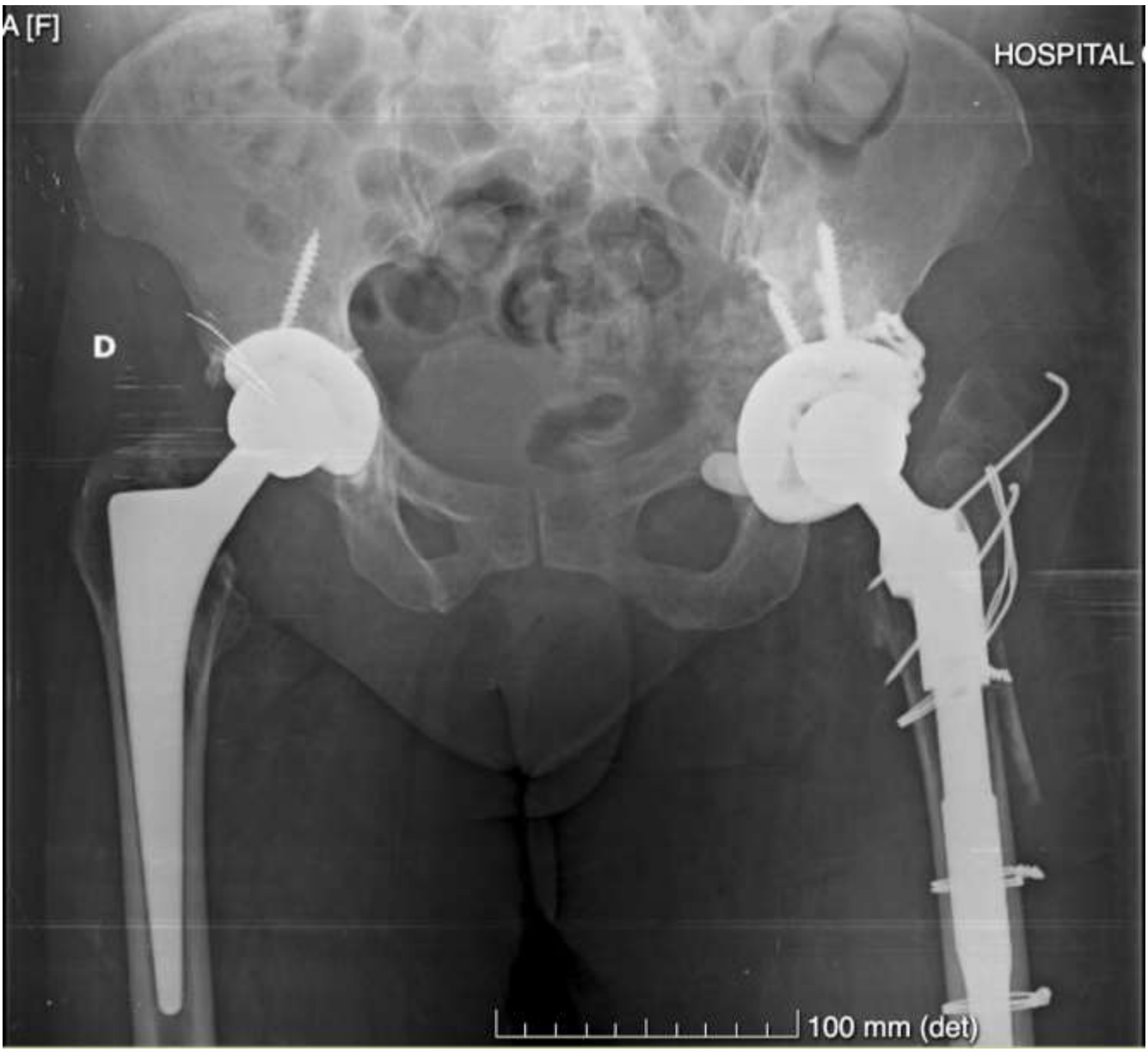

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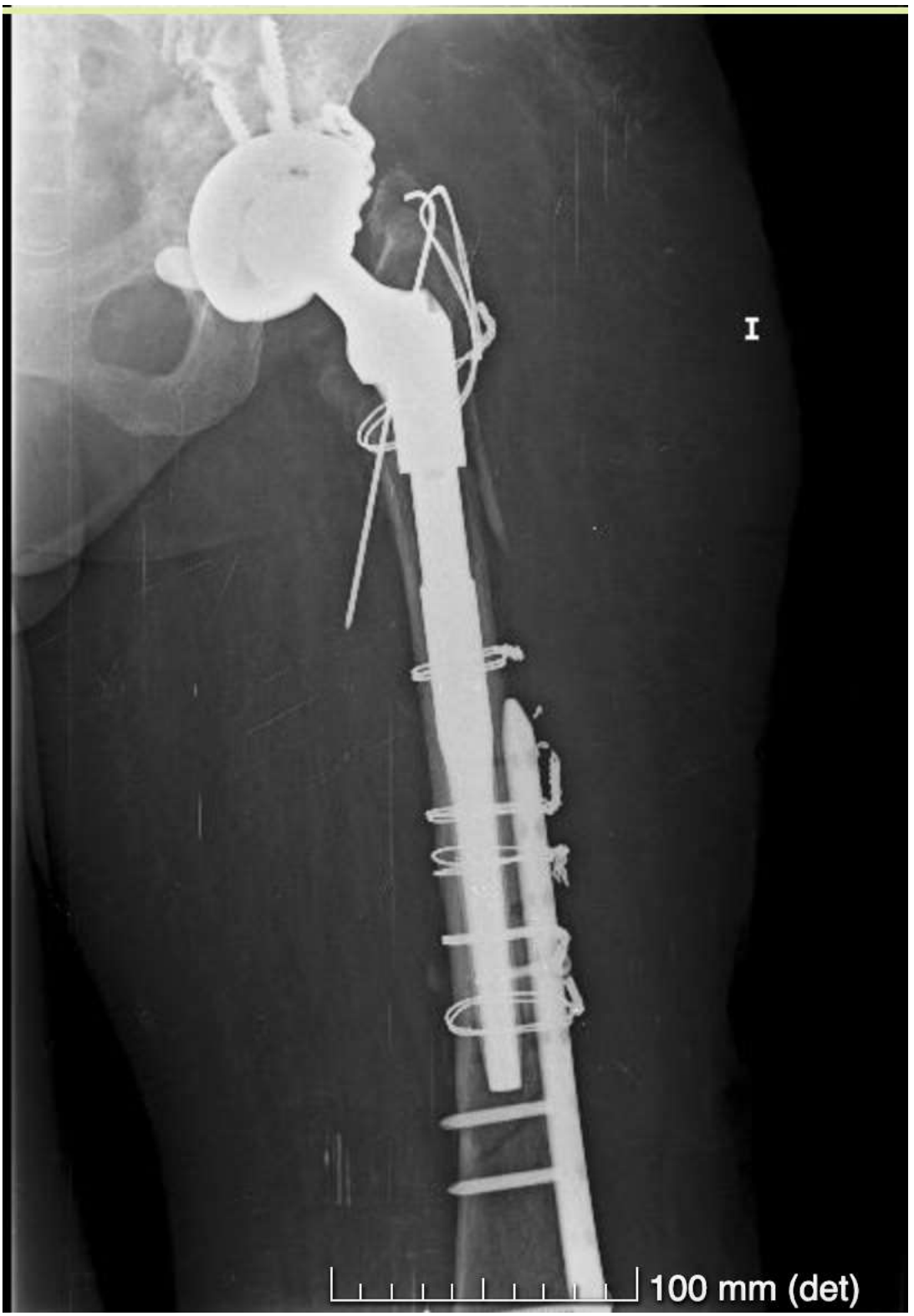

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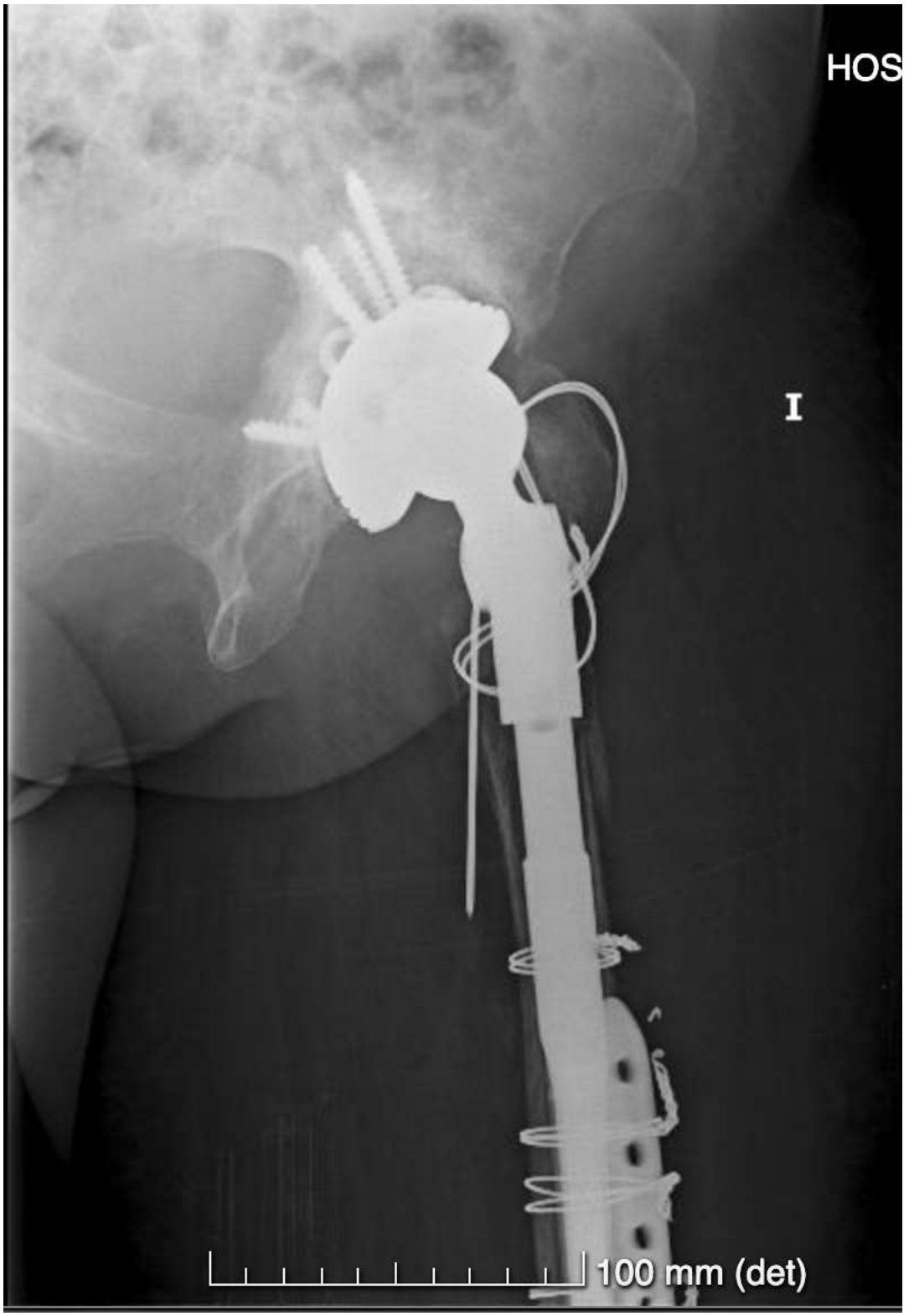

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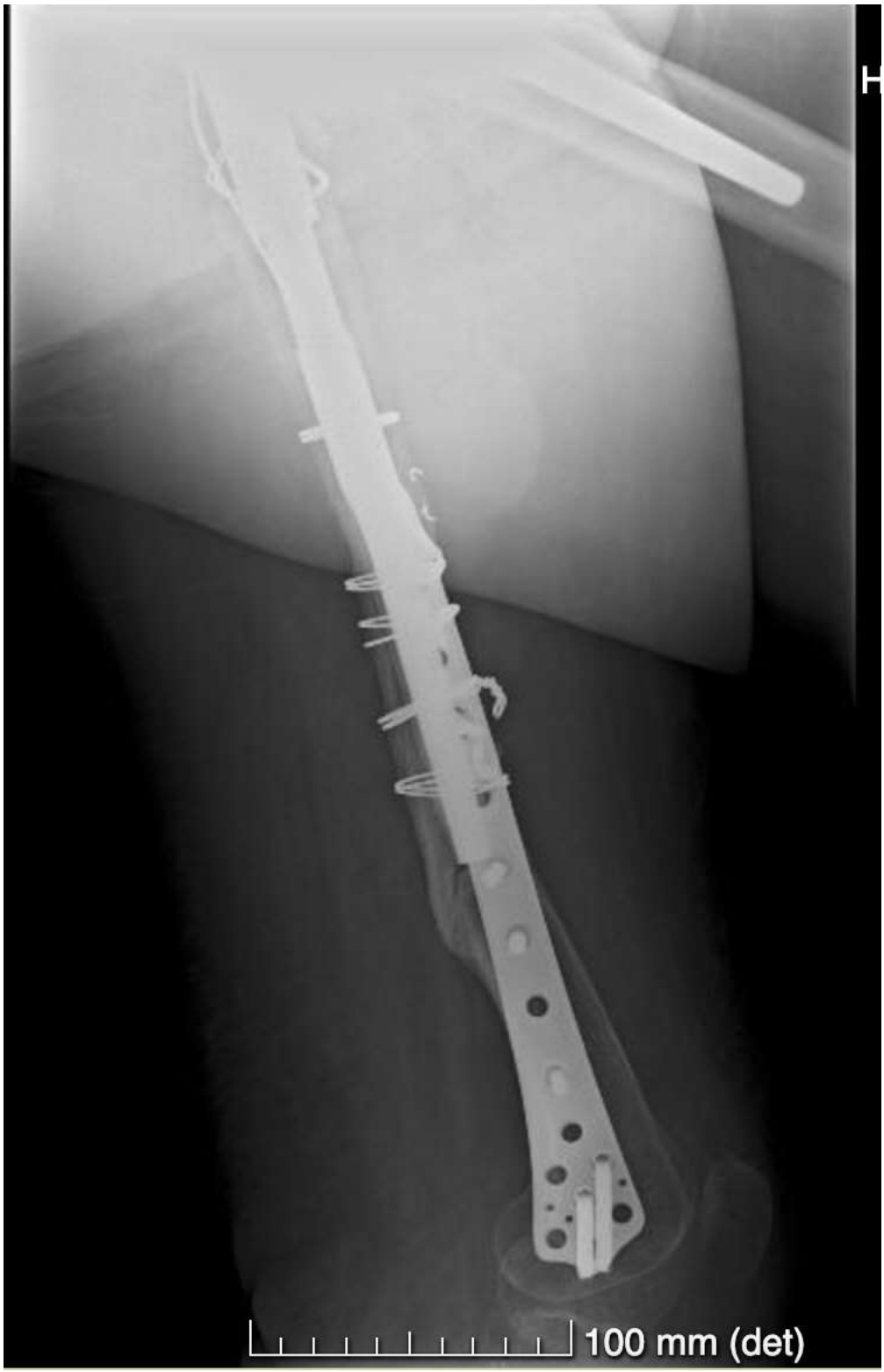

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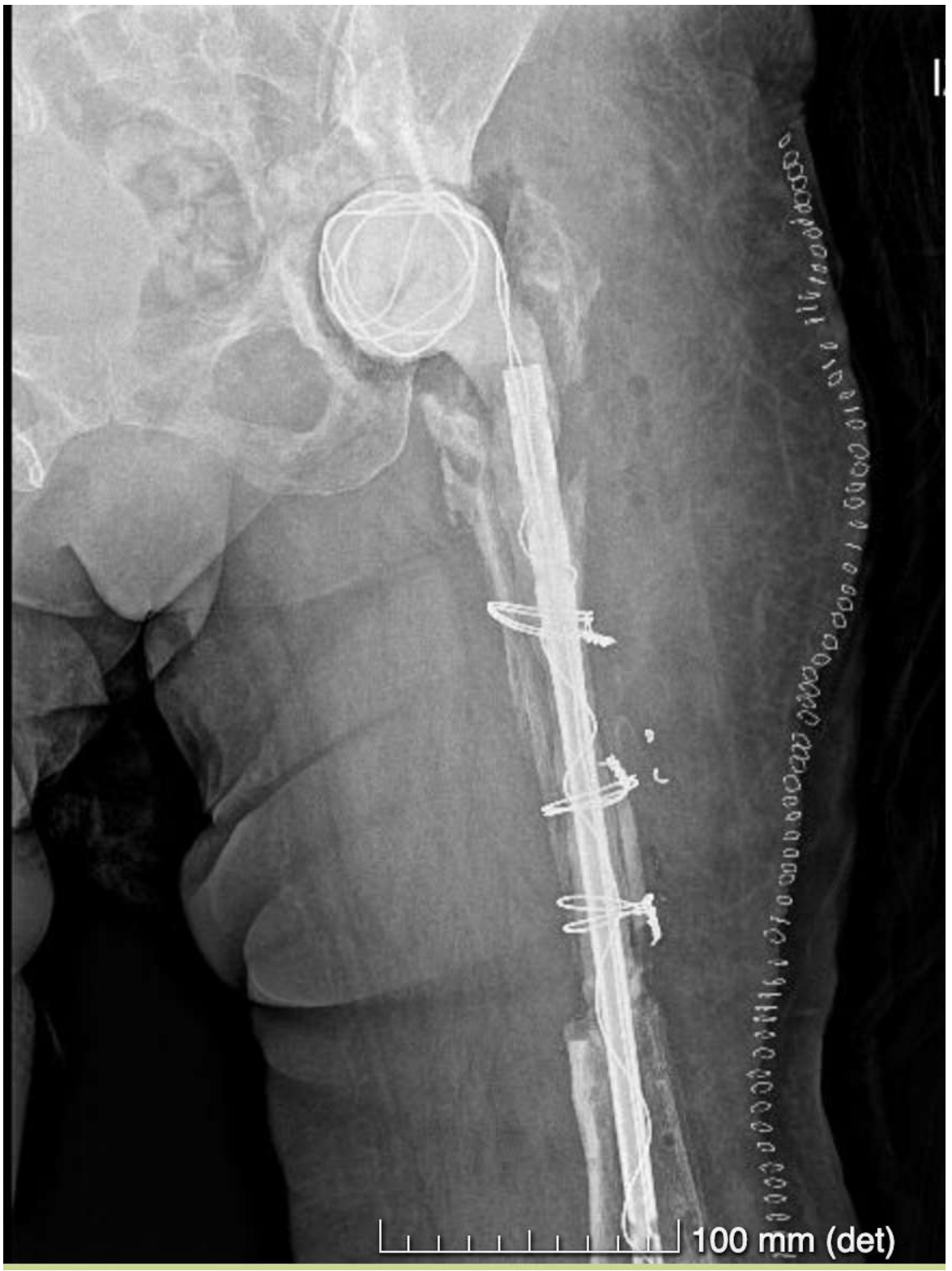

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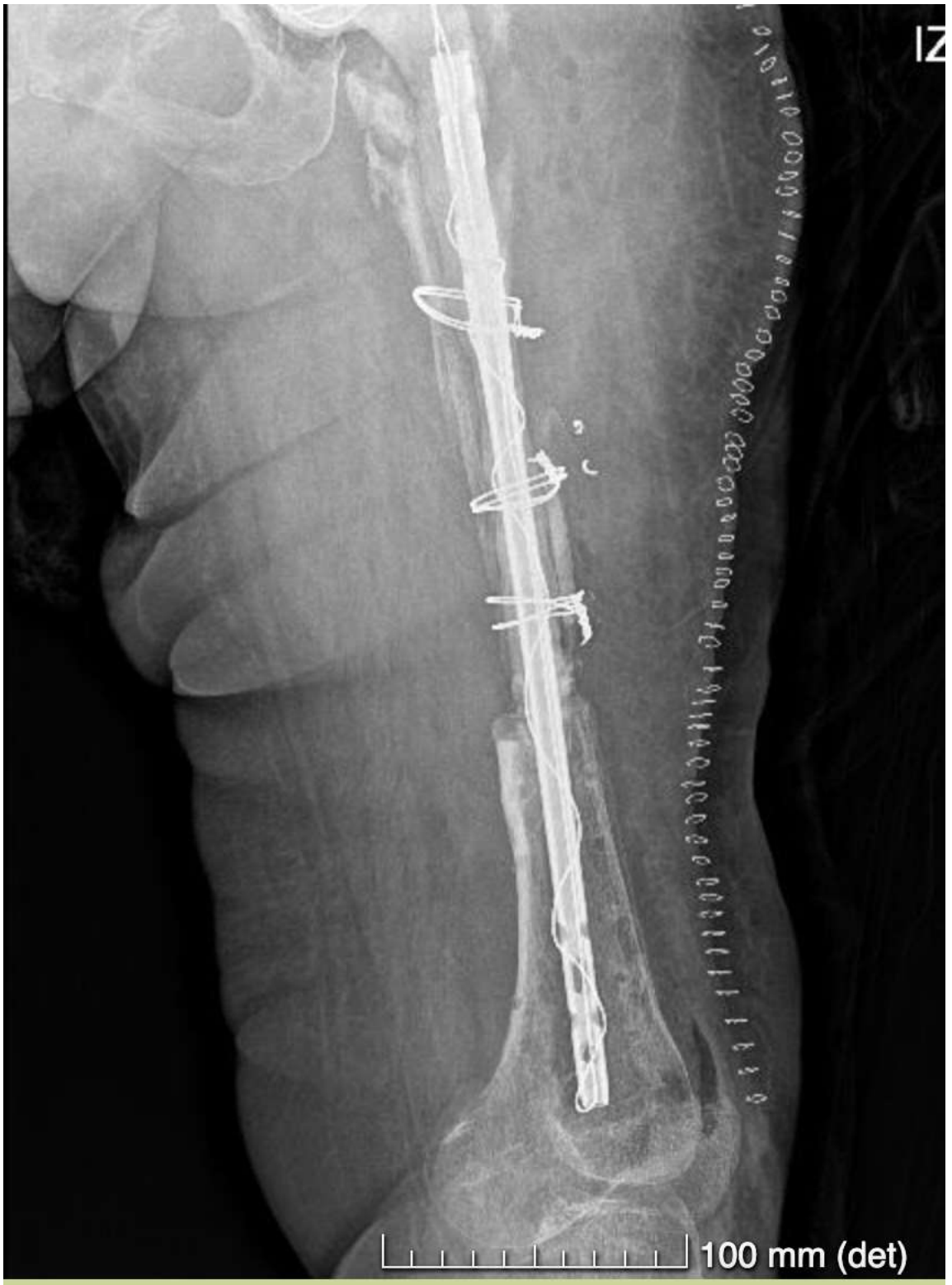

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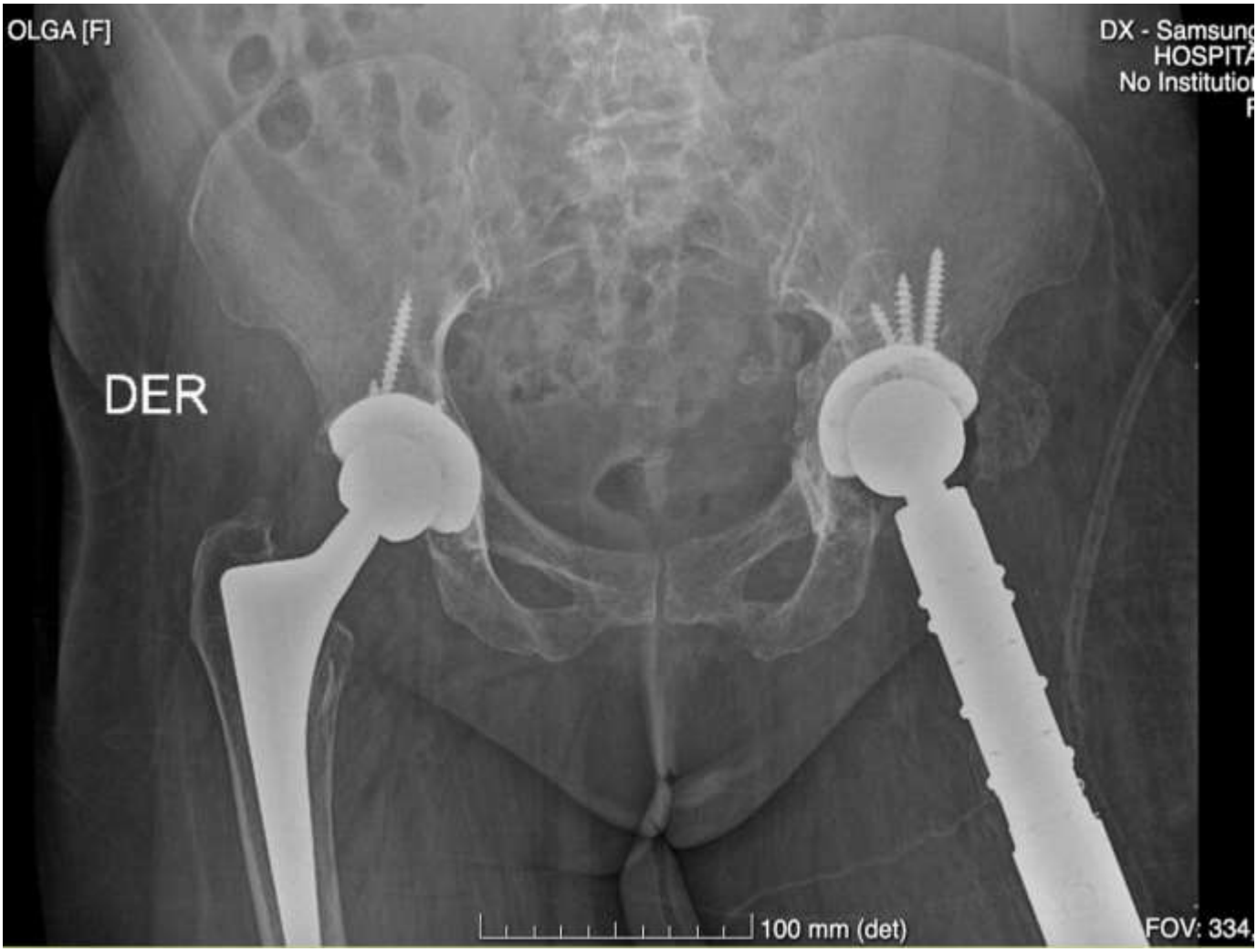

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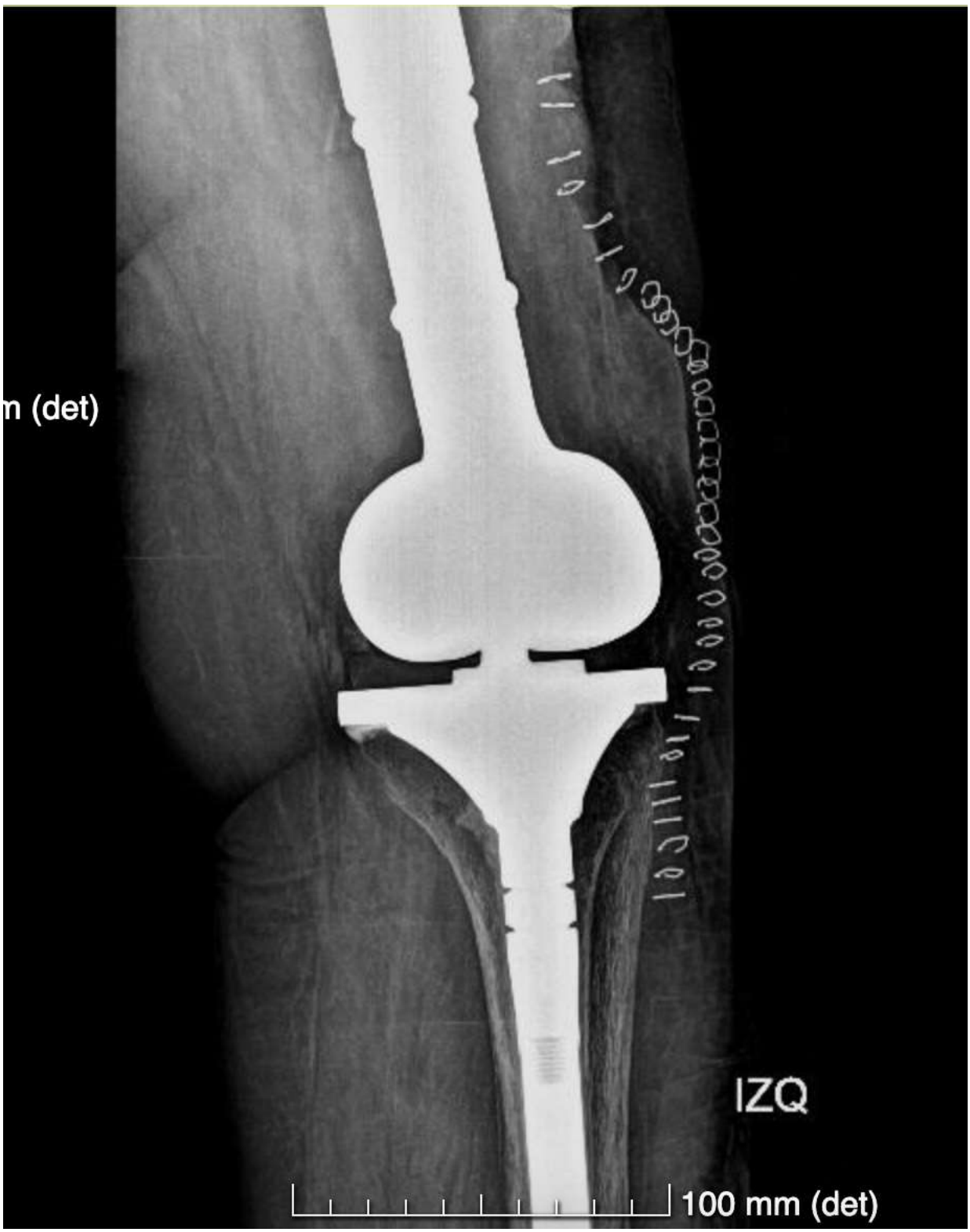

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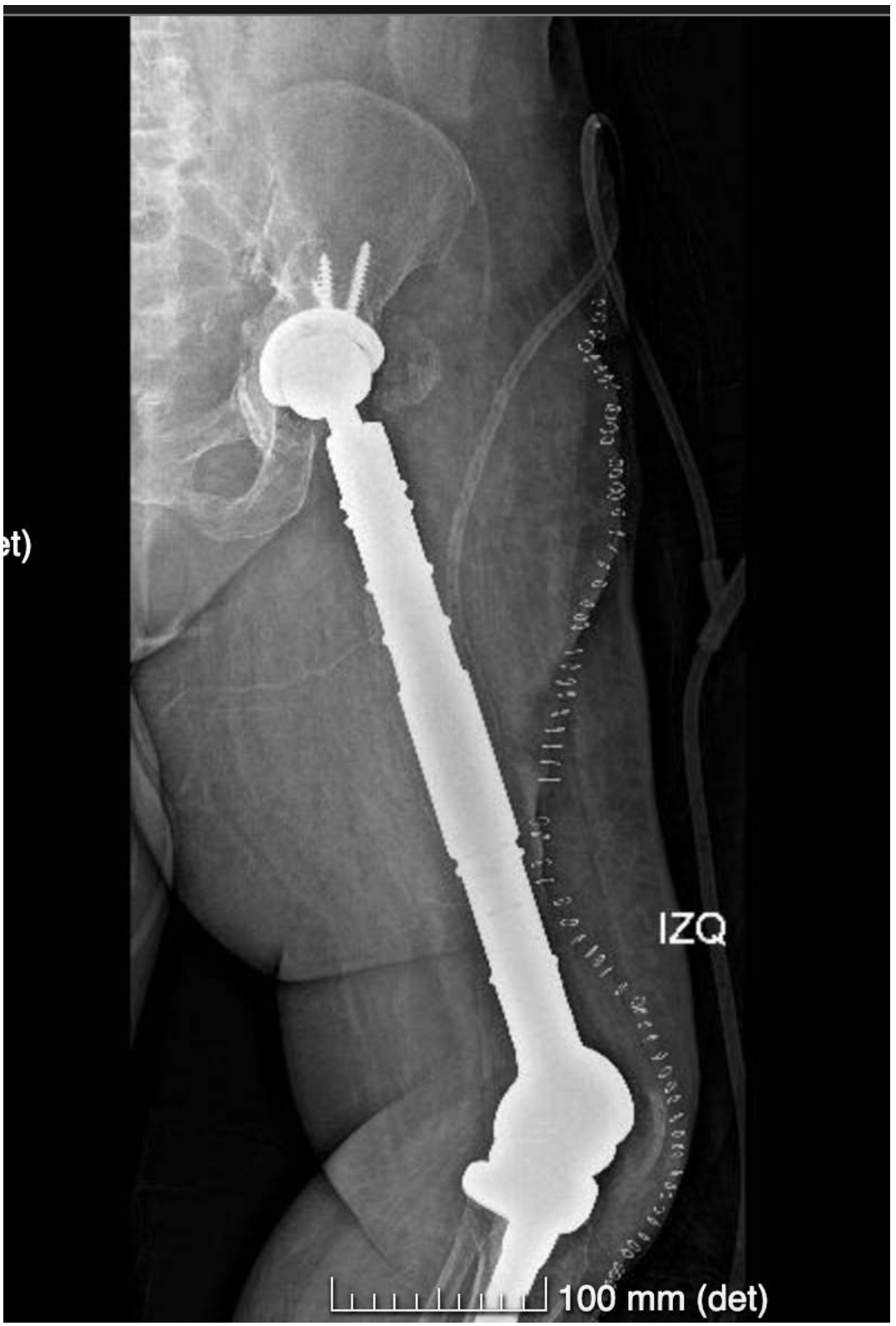

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Discussion

Periprosthetic infection is the most complex complication associated with megaprosthesis use, with an incidence of up to 23% of cases. Due to its multifactorial etiology, prevention is crucial. Silver coating generates the release of metallic cations, which, through multiple mechanisms, provide high antimicrobial activity associated with low toxicity. Literature reports describe a decrease in PI rates of up to 4.5%.

Conclusions

The use of megaprostheses is a viable salvage therapeutic alternative in the face of failed HA with a significant bone defect. Silver coating suggests a reduction in PI rates in multiple retrospective studies; however, further studies are needed to confirm these benefits.