

## **A Case Report Sixth Month Follow Up; Monoplegia at Left Lower Limb Due to Left Sacral Fracture Treated with Decompression and Lumbopelvic Fixation**

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### **INTRODUCTION**

Sacral fractures are complex and pose diagnostic challenges and technical difficulties for treatment. Due to their relative rarity and heterogeneous nature, they are often misdiagnosed and not treated properly.<sup>1</sup> This case was monoplegia at left lower limb due to left sacral fracture, there was a mismatch in the general clinical presentation of sacral fractures. This patient was treated with lumbopelvic fixation and decompression, which we evaluated the clinical functional outcome at 6<sup>th</sup> months.

### **CASE REPORT**

A 21-year-old man was taken to the emergency department, a referral from a regional hospital with complaints of not being able to move his left lower leg which had been experienced since 14 days before being admitted to the hospital due to an accident. The patient was riding a motorcycle alone and was hit from behind by another motorbike, with his left hip first falling to the ground, after the incident the patient had a history of loss of consciousness but soon regained consciousness and no history of vomiting. On the first day of the incident, the patient only felt cramps and pain in the lower back and lower left leg, was taken to the nearest hospital but was sent home because it was considered nothing and only conservative therapy with analgesics. 1 day later the patient began to feel weakness in his left lower leg and was unable to move his left lower leg. but the patient can still feel urination and defecation until the patient is referred.

From physical examination obtained; General status, Consciousness : Composmentis and well nourished, Blood pressure : 110/70mmhg, Heart rate : 100 times per minute, Respiratory rate : 20 times per minute, Temperature : 36,5<sup>o</sup>C, Pain Numerical Rating Scale: 4-5/10. Local status; Vertebral region, Look : Deformity (-) Gibbus (-), Wound (-), swelling (-), hematoma (-). Feel : Tenderness (+) at lumbal 5 – sacral 1, step off (-). Motoric : right lower limb 5/5 from L2 to S1, left lower limb NT from L2 to L4 and 0/5 from L5 to S1. Sensoric NT from L2 to L4 and Hypoesthesia from L5 to S1 . Physiologic Reflex : Knee and Achilles physiologic reflex are normal both of lower leg. Pathologic reflex : Babinski, burdzkinski, chaddock, openheim and clonus are negative both of lower limb.



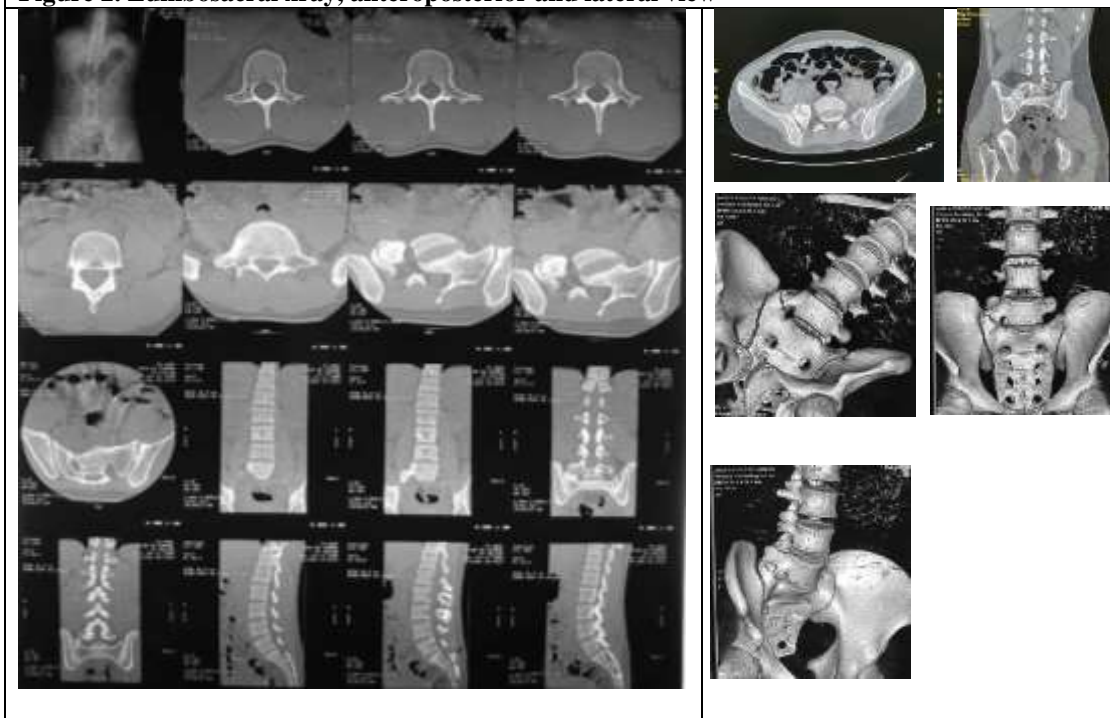
**Figure 1. Clinical finding at vertebral region from posterior and lateral aspect**

Additional examination, from On x-rays we were doubtful of the findings because it looked like there was no abnormality until we performed a general CT scan and 3-dimensional ct scan of the lumbosacral and pelvis, We focused on detecting the cause of monoplegia in the left lower leg, glimpsed at the cut of the corona or looked anteroposterior there was no abnormality. However, if we look closely at the axial section, we see a narrowing of the Lumbal 5 to Sacral 1 foramen which we suspect is due to compression of the fracture fragments. We also performed MRI to exclude other pathologic conditions.

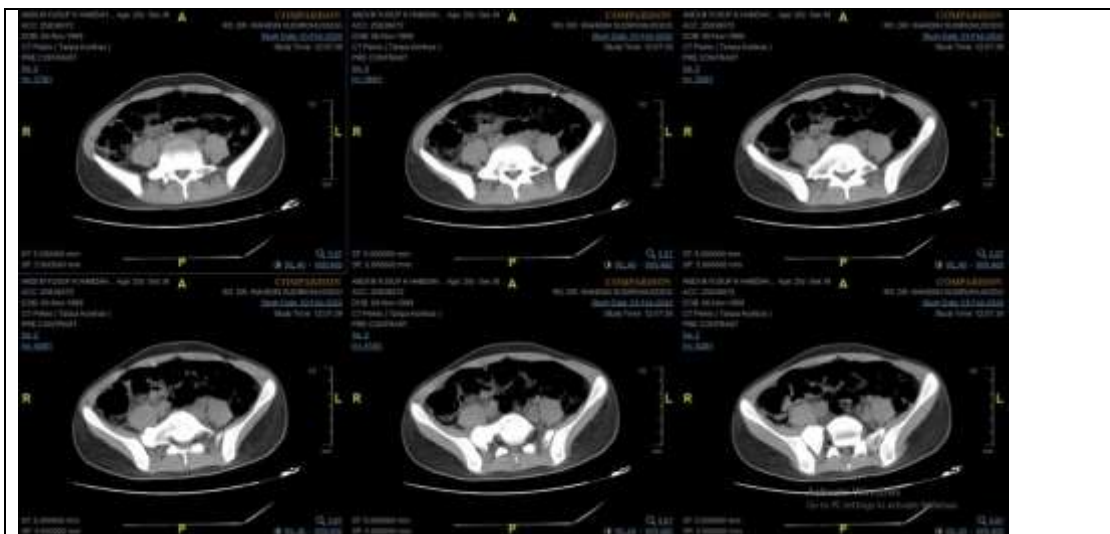
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**Figure 2. Lumbo-sacral xray, anteroposterior and lateral view**

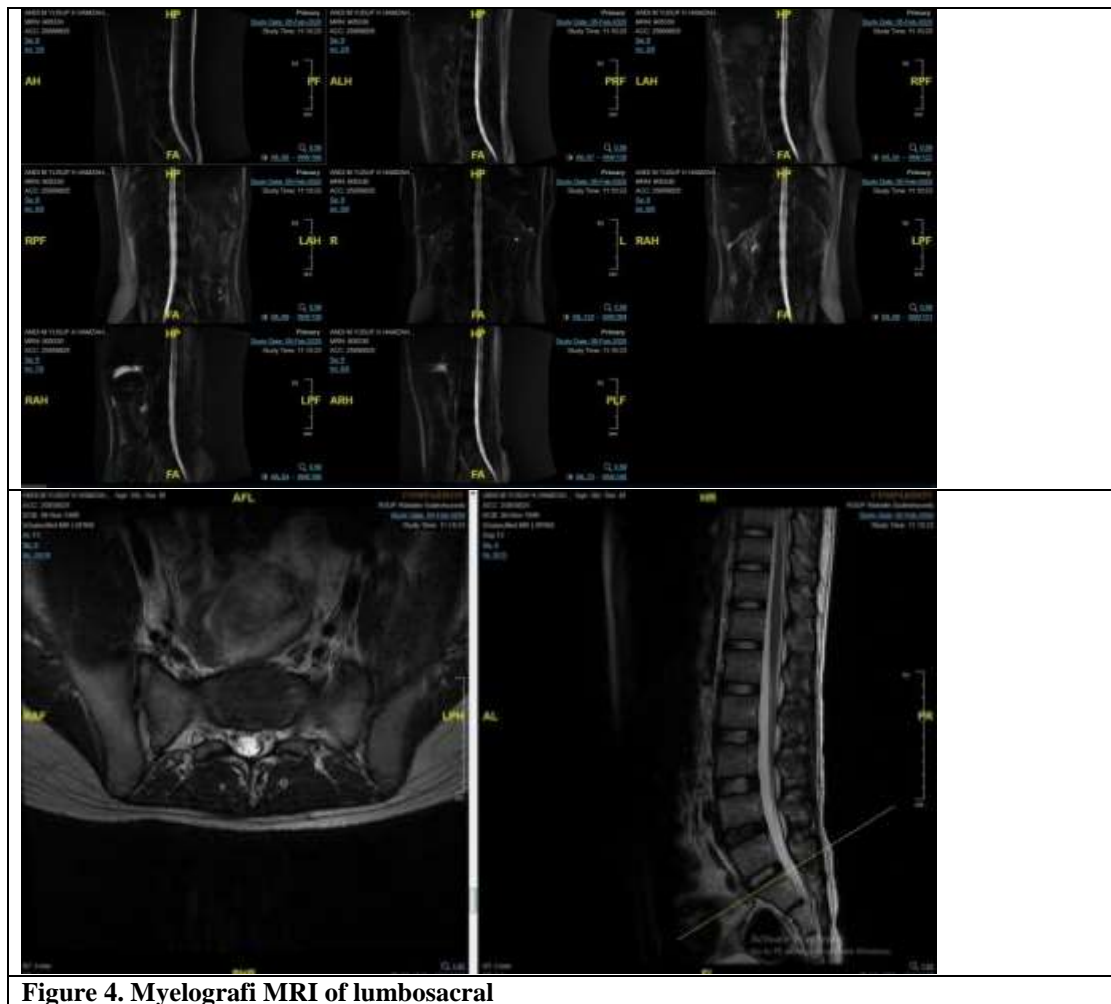


**Figure 2. General CT scan and 3 Dimensional Lumbo-sacral and Pelvic**



**Figure 3. Axial plane of General CT scan Lumbo-sacral and Pelvic**

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**Figure 4. Myelografi MRI of lumbosacral**

On additional laboratory examinations did not find any meaningful things such as signs of infection.

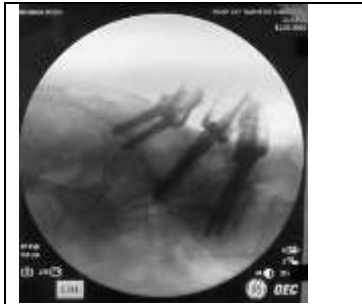
|           |   |          |              |
|-----------|---|----------|--------------|
| WBC       | : 6,2 x10 <sup>3</sup> /mm <sup>3</sup> | CT       | : 8'00       |
| HGB       | : 14,6 g/dL                             | BT       | : 3'00       |
| HCT       | : 42 %                                  | Natrium  | : 141 mmol/l |
| PLT       | : 345 x10 <sup>3</sup> /mm <sup>3</sup> | Kalium   | : 3,8 mmol/l |
| HbsAg     | : Non-Reaktif                           | Chloride | : 107 mmol/l |
| RBS       | : 104 mg/dl                             | ALT      | : 16 mg/dl   |
| Ureum     | : 46 mg/dl                              | AST      | : 15 mg/dl   |
| Creatinin | : 0.72 mg/dl                            |          |              |

From the history and physical examination as well as x-ray and laboratory investigations we diagnosed this patient with Monoplegia at left lower limb due to Left Sacral Fracture. Based from diagnosis we decided to do lumbopelvic and also performed decompression.

### METHOD

The patient is lying prone under general anesthesia, asepsis and drapping procedure so that only the operating field can be seen in the area as level as the Lumbar 2 to vertebra Sacral5, an incision is made with a posterior approach to the midline of the vertebra at the level of the Lumbar 3 to Sacral 3 vertebrae, deepen the incision layer by layer until the vertebrae are visible, we found fracture at left lumbosacral junction as level as lumbal 5 to sacral 1 and then performed Dorsal and dorsolumbar fusion, posterior technique for Lumbar 5 to pelvic using 6 GSS poly reduction 6.5 x 45 mm and 2 GSS Rod 100 mm with exploration and decompression of spinal canal, control the bleeding and apply a double vacuum drain, suture the wound layer by layer to the skin, cover the wound with sterile tulle and gauze and operation complete.

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**Figure 5. C-Arm intraoperative**



**Figure 6. Post-operative xray lumbosacral anteroposterior and lateral**



**Figure 7. Applied double vacuum drain after operation**

**RESULT**

Sixth month Follow-up, the results obtained in the patient were from the clinical presentation of surgical scars visible as level as lumbar 3 to sacral 3, there were no signs of infection, no tenderness. patients are able to walk independently without assistive devices and without pain. From the neurological status of the motor strength of the left lower leg 5 per 5 from lumbar 2 to sacral 1 was the same as in the right lower leg, there was no hypoesthesia or anesthesia, normal physiological reflexes and no pathological reflex in both lower limbs.

Lumbosacral x-ray examination after 6 months follow up, shows the good position of the implants in the lumbar 5 to pelvic, and there is callus formation around the implant and also shown fusion, the same picture is also shown on the 3-dimensional CT scan. At this time the patient has started to return to work and carry out daily activities without any complaints Including the function of micturition, erection and defecation.



**Figure 8. sixth month follow up clinical finding at vertebral region from posterior and lateral aspect**



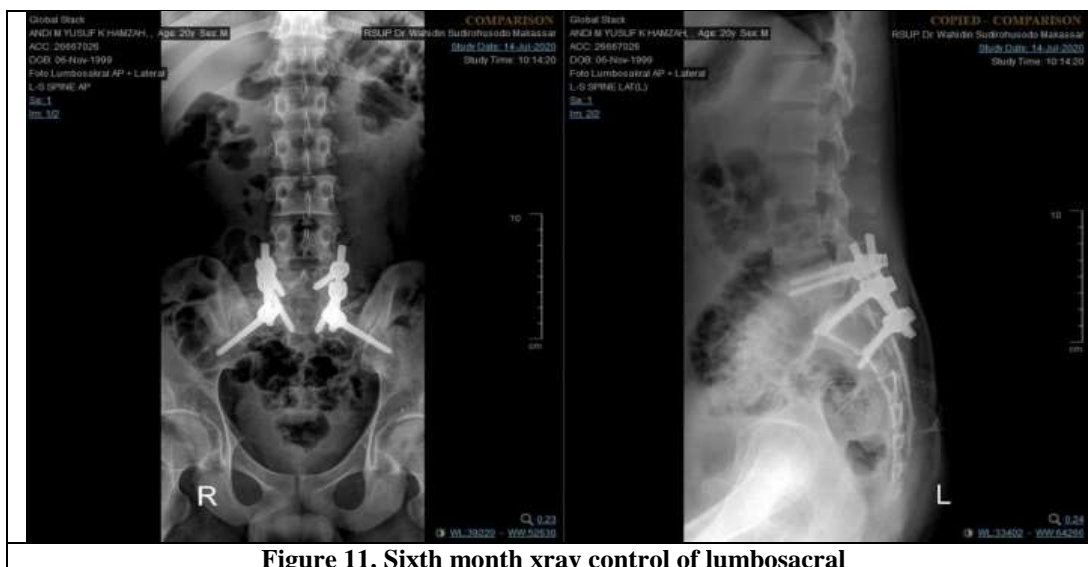
**Figure 9. Sixth month follow up independent walking ability patient**



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**Figure 10. Sixth month follow up Motoric examination from lumbal 2 to sacral 1**



**Figure 11. Sixth month xray control of lumbosacral**

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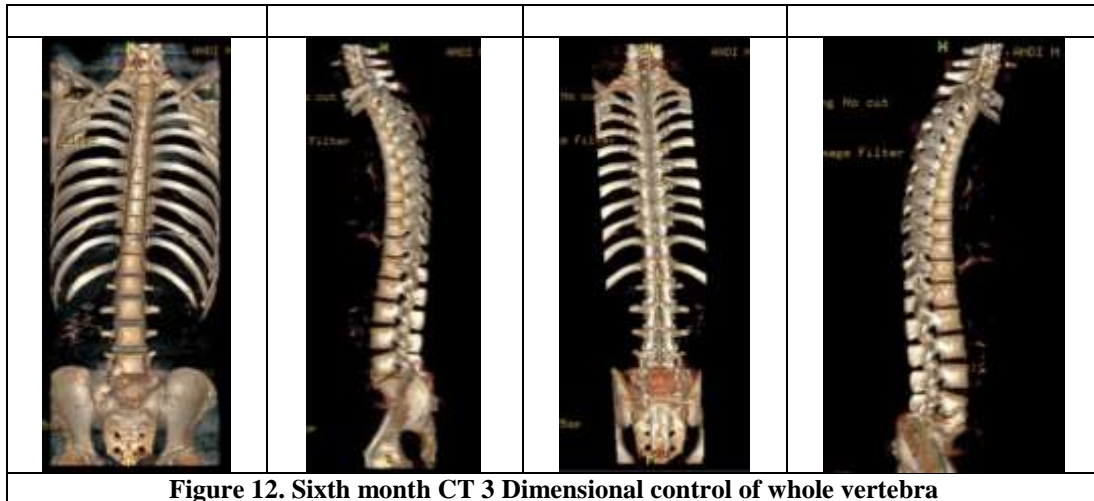


Figure 12. Sixth month CT 3 Dimensional control of whole vertebra

### BRIEF DISCUSSION

Sacrum fractures correspond to 1% of all spinal column fractures, and most of the time they are associated with pelvic injuries. Approximately 60% of sacral fractures go unnoticed in the patient's initial care. They are largely caused by high-energy traumas such as automobile accidents, falls from heights, and suicide attempts.<sup>2,3</sup> This also happened to this patient, where when the patient came to the health facility for the first time, further nerve damage could occur. We try to hunt with time for the patient's clinical improvement in order to prevent further irreversible damage.

At the beginning we examined this patient, from the history of the patient's complaints and expectations, physical and supporting examinations, doubts arose because of the inconsistent results we got. In the midst of this condition, we made the bold decision to perform surgery after education and patient consent.

This patient underwent decompression and posterior stabilization from the lumbar 5 to pelvic. Surgical decompression is recommended in the presence of a neurologic deficit.<sup>4</sup> Although 80% of neurological improvement has been reported regardless of the type of operative or nonoperative management.<sup>5</sup> We assess decompression still has a place to pursue clinical improvement in patients. Posterior stabilization we performed because we assessed the tendency of instability in this case plus decompression was done which added to the situation.

### CONCLUSION

Sacral fractures are complex and frequently overlooked. Late identification and inadequate treatment may, however, lead to painful deformity and neurologic dysfunction. A case of Monoplegia at left lower limb due to Left Sacral Fracture was

described. Decompression and Lumbopelvic Fixation was chosen to manage this patient.

Treatment needs to be determined on an individual basis and the potential benefits of neural decompression, stabilization and patient mobilization should be carefully weighed against the risks inherent to surgery to the patients. The timing and type of treatment (conservative or surgical, with or without neural decompression and/or fixation) should be dictated not only by the pattern and stability of the sacral fracture but also by the associated injuries in a multidisciplinary manner. 6 months follow up showing good functional result and clinical outcome.

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