

## Multiple Fracture in Osteopetrosis

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### INTRODUCTION:

Osteopetrosis is a rare bone disorder characterised by osteoclast dysfunction that leads to an increase in bone density, impaired remodelling, and bone fragility. Human osteopetrosis was first described by Albers-Schonberg in 1904, and it is also known as marble bone disease.

We report a case of low-velocity energy impact causing multiple fractures.

### CASE REPORT:

A 13-year-old Malay girl presented to the emergency department after alleged falling from a height of 1 meter at home. She had immediate pain in her left thigh, right elbow, and right forearm. She has never had surgery or had a previous fracture history.

Radiographs showed a diffuse sclerotic thickening throughout the extremities consistent with osteopetrosis. Notable findings from the trauma x-rays were a left midshaft femur fracture, a right proximal 3rd tibia and fibula fracture, a right radius and ulna fracture with a right olecranon fracture.



The patient elected to undergo surgery: locking plate left femur, dynamic compression plate right radius and ulna, and tension band wire right olecranon.

A carbide drill bit was used during the drilling of the bone with saline irrigation. No broken drill bit occurred. No other difficulty was experienced during the operation.



### RESULTS:

At her three-month visit, a radiograph shows a united fracture of her left femur, left radius and ulna, right olecranon, and right tibia, with good range of motion of the wrist, elbow, and knee. no signs of hardware failure or migration.

### DISCUSSIONS:

Osteopetrosis presents several challenges to fracture fixation stemming from the density of cortical bone. Careful reduction manoeuvres must be performed to avoid intraoperative fractures and to avoid the increased risk of drill breakage. A few methods have been described in the literature, such as (a) using a slow-speed high-torque electric drill; (b) frequent cooling with physiological saline; (c) clearing the drilling groove; and (d) using a staggered drill system. The advantage of our method is that it can avoid broken drill bits and reduce thermal injury and metal debris. Operation time is relatively faster as it reduces the time spent drilling.

### CONCLUSION:

Dealing with such cases poses a great challenge for orthopedic surgeons. Hence, thorough pre-operative planning and a surgical approach are required to provide a good outcome for the patient.

### REFERENCES:

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