Fassier-Duval
Telescopic IM System™

# Are Fassier-Duval Rods at Risk of Migration in Patients Undergoing Spine Magnetic Resonance Imaging?

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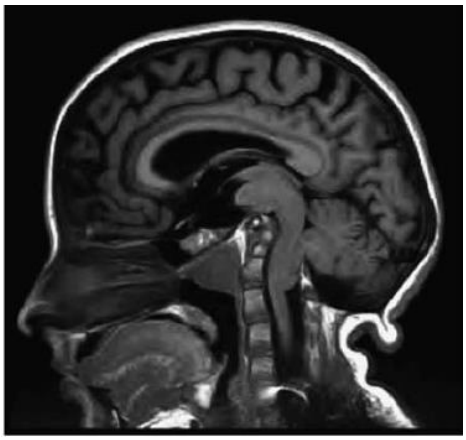
## Background:

The Fassier-Duval (FD) rod is a stainless-steel device widely used to correct bone deformities and reduce the risk of fractures in patients with osteogenesis imperfecta (OI). Since these are telescopic expandable rods, there has been a reluctance to perform magnetic resonance imaging (MRI) in patients with OI secondary to a theoretical risk of migration during the MRI scans. The primary aim of this study was to assess the risk of migration of FD rods in patients who underwent MRI of the spine. The secondary aims are to assess the heating effects and artifact of these implants.

## Methods:

We retrospectively reviewed our database for all patients with OI who had undergone FD rodding and subsequent MRI valuation for craniofacial and spinal disorders. Ten patients were eligible to be included in the study. The MRI examination was performed in all patients using a1.5 T magnet. The radiographic images pre-MRI and post-MRI were evaluated and compared to assess whether or not migration of implants had occurred. Patients' charts and MRI logbooks were reviewed to assess the heating effects based on patient-reported events during or immediately after the MRI. In addition, the scans were reviewed to evaluate peri-implant soft tissues to assess for changes that might indicate such effect. Artifact was judged to be present if it interfered with the evaluation of any portion of spinal anatomy of clinical interest.



## Results:

Ten patients underwent 19 FD roddings. The indications for MRI in these patients were basilar invagination, basilar impression, platybasia, and complex scoliosis. None of the implants have shown any migration, heating effect, or artifact.

## Conclusions:

FD rods are safe and pose no risk of migration, heating effects, or artifact when undergoing an MRI of the spine using a 1.5 T magnet. With the introduction of magnet strengths higher than 1.5 T, further testing should be performed.

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