

Comparison of radiography, CT, and MRI for the evaluation of spinal involvement in Morquio A¹²

| | Strengths | Limitations |
|-------------|---|---|
| Radiography | <ul style="list-style-type: none"> • Assess bone malformation • Assess spinal canal stenosis • Assess malalignment • Flexion-extension instability • Rapid • Inexpensive | <ul style="list-style-type: none"> • Poor soft tissue discrimination • Limited by overlapping structures • Ionising radiation • Limited to ossified structures |
| CT | <ul style="list-style-type: none"> • Rapid (may obviate need for anaesthesia) • Multiplanar imaging of bony structures • Alternative method for assessing flexion-extension instability in difficult cases (recommend low radiation dose protocol ^a) • Can assess some soft tissue components of canal stenosis and cord compression with appropriate filtering • Preoperative planning | <ul style="list-style-type: none"> • Suboptimal for visualising soft tissues and the spinal cord • Ionising radiation • More expensive and less accessible than plain film radiography |
| MRI | <ul style="list-style-type: none"> • Multiplanar imaging • Ideal for soft tissue imaging • Preferred method for assessing spinal cord compression and myelomalacia • Flexion-extension imaging directly visualizes spinal cord • Demonstrate venous collaterals • Non-ionising radiation | <ul style="list-style-type: none"> • Long imaging times • May require anaesthesia • Metal and motion artifacts • Limited access • Expensive |

^aFocus on area of interest only, with lowest possible dose technique to yield adequate signal-to-noise at bone algorithm displayed at bone window.