CT scans are often preferred in scenarios where a detailed examination of spinal structures is essential, such as in complex cases involving traumatic injuries. The ability of CT imaging to provide detailed cross-sectional views makes it invaluable for visualizing small fractures or subtle lesions that might be missed by X-ray imaging (Ref-f099231). This is particularly critical in cases of suspected spinal fractures or dislocations where precision in imaging aids in accurate diagnosis and subsequent surgical planning. Furthermore, CT scans are indispensable in evaluating spinal tumors or infections, where precise anatomical details are necessary to determine the extent and nature of the pathology (Ref-f099231). These scenarios illustrate the circumstances under which the comprehensive imaging capabilities of CT scans are crucial for effective clinical decision-making, despite their higher cost and increased radiation exposure.